

Best Management Practice Verification Ad-Hoc Action Team (BMPVAHAT): Final Report and Suggestions

Draft – 08 March 2023

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I. BMPVAHAT Charge and Task Statement

The Best Management Practice Verification Ad-Hoc Action Team (BMPVAHAT) was an action team formed to address the 2020 charge from the Management Board (MB) to the Water Quality Goal Implementation Team (WQGIT). The group met once a month for two years from August 2020 to September 2022 (with a brief hiatus from April 2022 to August 2022). [Section IV](#) provides a detailed summary of each meeting.

Note: The action team is **not the BMP Verification Steering Committee, the BMP Transparency Subgroup, or the BMP Verification Review Panel. Below are brief descriptions of these separate but related groups. An action team is established to meet very explicit and short-term needs or products, per the CBP Governance.*

- *The [BMP Verification Steering Committee](#) met from 2012 to 2016 and was charged with the responsibilities for developing all of the elements of the Basinwide BMP Verification Framework (BMP verification principles, protocols, review panel, and other verification related procedures).*
- *The [BMP Verification Transparency Subgroup](#) was convened by the BMP Verification Committee at its February 2013 meeting to develop recommendations for how to address the issue of ensuring transparency in the context of the agricultural verification protocols and reporting back to the Agriculture Workgroup on its recommendations.*
- *The [BMP Verification Review Panel](#) was an independent panel of national and regional verification experts that provided advice, feedback, and recommendations to the Chesapeake Bay Program as it developed its BMP Verification Program. This included feedback on the BMP Verification Principles, the source sector workgroup verification protocols, and strengths/vulnerabilities of the state verification programs, as well as an evaluation of the equitability of verification rigor across source sectors and the watershed jurisdictions.*
- *The [BMP Verification Ad-Hoc Action Team](#) was convened in August 2020 in response to the two-year January 2020 Management Board Charge described below.*

Please see [here](#) and [here](#) for more context on the development BMP Verification Framework document and subsequent formation of jurisdiction verification programs, guided by each jurisdiction's nonpoint source and point source [Quality Assurance Program Plans \(QAPPs\)](#).

A brief sequence of events leading to the formation of the BMPVAHAT is provided below:

September 2019: The Letter from the WQGIT to the MB

On September 26th, 2019, Dinorah Dalmasy (WQGIT Co-Chair), James Davis-Martin (WQGIT Co-Chair), and Teresa Koon (WQGIT Vice Chair) sent a letter addressed to the Management Board Chair, Dana Aunkst, and the Management Board members requesting that the BMP Verification Subcommittee be reconvened to address the issues of concern identified by the WQGIT at their July 8, 2019, meeting. This letter is linked [here](#).

In this letter, the WQGIT leadership, on behalf of the WQGIT membership, requested a standing group composed of jurisdictions, the EPA, Chesapeake Bay Commission, sector workgroup chairs, staffers, and at-large members be convened to address issues pertaining to the annual progress analysis, the approval process for and format of jurisdictions' QAPPs, identifying a path for reviewing and approving

alternative data collection and verification methods, alternatives to the “all-or-nothing approach” to BMP re-verification, alternatives to improve the reporting of verification actions that remove or discount reported BMPs from the model, recommendations on procedures for updating or establishing BMP credit durations, increasing the transparency of back-out and cut-off procedures, the estimated cost of verification for each BMP, and the lack of full access to all federally cost-shared conservation practices (**a full description of issues can be found in the [letter](#)**).

January 2020: The Charge from the MB to the WQGIT

On January 22, 2020, the Management Board issued a direction in response to the September 2019 letter from the WQGIT. A PowerPoint breaking down the full charge from the Management Board is found [here](#).

The direction from the Management Board that led to the formation of the BMPVAHAT addressed **only two issues** from the WQGIT letter, Issue 5 and Issue 6:

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 Natural Resources Conservation Service (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 (Maryland Department of Agriculture would be very willing to discuss what’s worked well with their verification program and associated procedures)

ISSUE VI. Revisiting Credit Duration

- Credit durations established 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.

October 2020: The BMPVAHAT Task Statement

At the October 2020 WQGIT meeting, the WQGIT approved the draft BMPVAHAT Task Statement, linked [here](#). The BMPVAHAT task statement, developed from the Management Board Direction Issues V and VI and input from the BMPVAHAT and WQGIT memberships, included the following main tasks:

1. **Explore alternatives to BMP re-verification.** What is the potential for partial credit, or variable credit through time? Animal Waste Management Systems may serve as a case study to consider this issue. An important component of this exploration should include a primer on the purpose of the watershed model.
2. **Revisit credit duration.** What is the best available information to determine BMP credit durations for both current and new BMPs? What multiple lines of evidence can be used to update BMP specific credit durations? There is an opportunity to re-assess the established credit durations and update them using multiple lines of evidence (e.g., more up-to-date data, lessons

learned during preceding years, and best professional judgement for how best to use the evidence, including the most up-to-date Expert Panel reports with accompanying appendices).

3. **Explore lesser-used approaches to BMP verification.** As outlined in the Partnership's BMP Verification Framework, there are several approaches to verifying BMPs that are not being used to their full potential. For example, given developments in remote sensing, can BMPs be verified remotely using new technologies such as smart sensors and drones? Other opportunities could include the self-reporting of on-the-ground BMPs by farmers, businesses, NGOs, and other stakeholders, or BMP verification using performance-based metrics or presumed compliance principles.
4. **Review recommendations from ongoing BMP verification work being undertaken by the Chesapeake Bay Program.** Multiple issues (e.g., timing of updates for BMP verification plans, data collection, verification expectations, and verification costs into the Chesapeake Assessment Scenario Tool) and actions (e.g., charge the Watershed Technical Workgroup to develop options for updating and submitting changes to jurisdictions' Quality Assurance Project Plans) were noted by the Management Board during the BMP verification meeting in January 2020. Many of these issues have been directed to the partnership's Watershed Technical Workgroup. As verification recommendations advance for approval, the ad-hoc action team will review those recommendations to ensure they are consistent with the CBP partnership's verification framework. Upon review, the ad-hoc action team's recommendations will move forward to be reviewed by the appropriate technical workgroup before final approval by the WQGIT.

II. BMPVAHAT Structure and Membership

The BMP Verification Ad-Hoc Action Team (BMPVAHAT) included representatives from WQGIT signatory members, WQGIT at-large members, source sector workgroups, advisory committees, and national experts on verification. The following individuals served as the BMPVAHAT leadership from August 2020 to September 2022:

Table 1. BMPVAHAT Leadership Team (Chair and Vice Chair Approved at the [October 2020 Meeting](#)).

Role	Name
Chair	Elliott Kellner, West Virginia University
Vice Chair	Jason Keppler, Maryland Department of Agriculture
Coordinator	Vanessa Van Note, Environmental Protection Agency
Staffer	Jackie Pickford, Chesapeake Research Consortium

From 2020 to 2022, the following organizations and staff participated as voting members on the BMPVAHAT:

Table 2. Voting Members of the BMPVAHAT (Signatory, At-Large, and Workgroup Representation approved at the [August 2020 meeting](#)).

Organization	Primary	Secondary
Delaware	Brittany Sturgis, DNREC	
District of Columbia	Matt English, DOEE	Ed Dunne, DOEE
Maryland	Bill Tharpe, MDA	Gregorio Sandi, MDE
New York	Cassandra Davis, NY DEC	Emily Dekar, USC
Pennsylvania	Jill Whitcomb, PA DEP	Kate Bresaw, PA DEP
Virginia	James Martin, VA DNR	
West Virginia	Alana Hartman, WV DEP	
U.S. Environmental Protection Agency (EPA)	Suzanne Trevena	Jeff Sweeney
Chesapeake Bay Commission (CBC)	Adrienne Kotula	
Citizens Advisory Committee (CAC)	Jessica Blackburn, Alliance for the Bay	Matt Ehrhart, Stroud Center
Chesapeake Bay Foundation (CBF)	Joe Wood	
Green Earth Connection (GEC)	Dana York	
Local Government Advisory Committee (LGAC)	Jennifer Star, Alliance for the Bay	

Organization	Primary	Secondary
Scientific and Technical Advisory Committee (STAC)	Elliott Kellner, WVU	
U.S. Department of Agriculture (USDA)	Curtis Dell	
U.S. Forestry Service (USFS)	Sally Claggett	Katie Brownson
Department of Defense (DoD)	Jessica Rodriguez	
Urban Stormwater Workgroup (USWG)	Norm Goulet, NVRC/USWG Chair	
Agriculture Workgroup (AgWG)	Gary Felton, UMD/AgWG Chair	Loretta Collins, UMD/AgWG Coordinator
Watershed Technical Workgroup (WTWG)	Cassandra Davis, NYDEC/WTWG Chair	Vanessa Van Note, EPA CBPO/WTWG Coordinator
Forestry Workgroup (FWG)	Rebecca Hanmer, FWG Chair	Sally Claggett, USFS/FWG Coordinator
Land Use Workgroup (LUWG)	KC Filippino, HRPDC/LUWG Chair	
Wetlands Workgroup (WWG)	Did not nominate representative	
Wastewater Treatment Workgroup (WWTWG)	Did not nominate representative	

III. How the Management Board Charge was Addressed

The table below draws parallels between the BMPVAHAT Task Statement, the Management Board Direction, and the issues outlined in the 2020 WQGIT Letter.

Table 3. Flow chart connecting the tasks from the BMPVAHAT Task Statement to the issues within the Management Board Direction and the WQGIT Letter to the Management Board they sought to address.

BMPVAHAT Task Statement	Management Board Direction	WQGIT Letter
<p>Task 1. Explore alternatives to BMP re-verification.</p>	<p>Issue V. Alternatives to the “All-or-Nothing” Approach to BMP (Re)verification.</p>	<p>Issue 5. Make recommendations on alternatives to the current all-or-nothing approach to BMP re-verification.</p> <p>Additional Issue 2. Ensuring jurisdictions have full access to all federally cost shared conservation practice data and enhancing reporting of federally cost shared practices were among the 12 Verification Framework elements approved by the partnership.</p>
<p>Task 2. Revisit credit duration.</p>	<p>Issue VI. Revisiting Credit Duration.</p>	<p>Issue 6. Consider alternatives and make recommendations on procedures for updating or establishing BMP credit durations.</p>
<p>Task 3. Explore lesser-used approaches to BMP verification.</p>	<p>Issue V. Alternatives to the “All-or-Nothing” Approach to BMP (Re)verification.</p>	<p>Issue 3. Consider alternatives and make recommendations on procedures for review and approval of any additional data collection and verification expectations that are beyond those included in jurisdictions’ approved verification program plans, particularly those that are beyond the CBP partnership’s Basinwide verification framework document.</p>
<p>Task 4. Review recommendations from ongoing BMP verification work being undertaken by the Chesapeake Bay Program.</p>	<p>This Task was not developed at the direction of the Management Board. Only Issues V and VI were charged to the BMPVAHAT. Full list of “ongoing BMP verification work” addressed in the MB charge here.</p>	<p>This Task pertained to issues within the WQGIT letter that were not charged to the BMPVAHAT by the Management Board. <i>Mid-way through the two-year charge, this task began to focus more on “broader programmatic discussions”.</i></p>

Table 4 outlines the tasks from the BMPVAHAT Task Statement, how and when each task was addressed by the group, and the outcomes of the discussions. **For more details about specific meetings, discussions, and decision items, see [Section IV. Summary of Meetings and Appendix 1](#).**

Table 4. How the BMPVAHAT Charge Was Addressed.

Task	How this Task was addressed
<p>Task 1. Explore alternatives to BMP reverification.</p>	<p>Addressed by Introducing and Developing the Concept of Partial Credit</p> <p>The key issue that fell under Task 1 was, if a BMP is not re-verified prior to the expiration of its credit duration, the BMP will no longer receive a reduction efficiency in the Bay model. This idea was referred to by the BMPVAHAT membership as an “all-or-nothing” approach. The BMPVAHAT investigated potential alternatives to the “all-or-nothing” approach of verification by considering the concept of gradual or partial credit for BMPs that have not been reverified on the landscape prior to the expiration of the credit duration in the model. Several proposals regarding partial credit were developed in an iterative fashion to accommodate different perspectives of the group. The group considered various methodologies in these proposals, including but not limited to restricting the use of partial credit by requiring a “sunset period”, limiting partial credit to certain BMPs (e.g., only federally funded agricultural practices of which states do not have access to location data), changes in BMP efficiencies over time vs a gradual phase out of credit, etc. Feedback from members, as well as the Chesapeake Bay Program Office CAST modeling team, was consolidated into a single proposal by the leadership team which was brought to the BMPVAHAT for a vote. The BMPVAHAT leadership met with members of the group who expressed concerns with the proposal individually on several occasions in attempt to address the concerns by answering questions and altering the proposal. The group was unable to come to consensus on approving a methodology for partial credit.</p> <ul style="list-style-type: none"> • Timeline: May 2021 - August 2022 • Outcome: Proposal did not reach consensus due to concerns about the proposed sunset period, need for additional data on practices beyond their credit duration, unclear solution to the federal data sharing issue and inability to address the “all or nothing approach” for BMPs that do not fall under the federal data sharing agreement. For more information on “hold” votes, see Appendix 5. <p>Addressed by Coordinating with EPA Region 3 and USDA-NRCS</p> <p>One of the issues identified in the letter from the Water Quality Goal Implementation Team (WQGIT) to the Management Board that led to Task 1 in the BMPVAHAT charge was ensuring jurisdictions have full access to all federally cost shared conservation practice data and enhancing the reporting of federally cost shared practices – two elements included in the Verification Framework that were not fully realized after the framework was approved by the partnership. The BMPVAHAT Coordinator raised this issue to the EPA Region 3 Acting Regional Administrator and USDA-NRCS State Conservationist. NRCS stated they would be open to discussing potential solutions after the pilot projects were finalized (see Task 3 below) to determine if the results would assist jurisdictions in overcoming the programmatic issues associated with the 1619 agreements and lack of access to data for federally funded practices. In May 2022, the USDA announced a federal crediting task force, formed in partnership with the EPA, to better quantify the voluntary conservation efforts of farmers in the Bay Watershed. As of February 2023, the official charge of the task force is still being finalized by USDA and EPA, but the issues identified</p>

	<p>by the BMPVAHAT, such as the issue of credit durations, will inform topics of discussion and potential solutions that the task force investigates.</p>
<p>Task 2. Revisit credit durations.</p>	<p>The BMPVAHAT reviewed the established credit durations for the following practices and, with input from the appropriate source sector workgroups and subject matter experts, investigated the possibility of updating them on a case-by-case basis. The option to extend credit durations for all reported cumulative BMPs was not supported by the Partnership, which led the BMPVAHAT to prioritize which BMPs needed to be revisited. The priority list of BMPs and proposed method for reevaluation was developed and agreed upon by the group in December 2020.</p> <p>Reassessment of these credit durations involved analyses of more up-to-date data provided by state partners, lessons learned from previous years, and best professional judgement from subject matter experts across the source sectors. Below is an outline of each practice revisited by the BMPVAHAT and the outcome of each investigation.</p> <p>Agricultural Practices</p> <p>Agricultural (Non-Urban) Stream Restoration: Non-urban stream restoration BMPs are assigned a 10-year credit duration in the CAST, in contrast to the 5-year credit duration assigned to urban stream restoration BMPs. Because urban and non-urban stream restoration projects are defined under one framework in the 2014 Expert Panel report, the 10-year credit duration for non-urban projects came into question. An Expert Panel Exploratory Group (EPEG) was tasked with investigating the credit duration of non-urban stream restoration practices and determining if a change should be made.</p> <ul style="list-style-type: none"> • Timeline: Dec 2020 – May 2021 • Outcome: Rationale was brought forward by the EPEG to keep the credit duration at 10 years. An analysis of available compliance data across the CBW jurisdictions would improve confidence in assigned credit durations for stream restoration projects. <p>Barnyard Runoff Control (BRC) and Loafing Lot Management (LLM): These practices were prioritized in the original list of practices to explore because they fall under the category of Animal Waste Management Systems (AWMS), which have a credit duration of 15 years, while BRC and LLM have a credit duration of 10 years. Since BRC and LLM are components of the AWMS, certain members felt it was logical for the credit durations to be the same. The BMPVAHAT Coordinator worked with jurisdictions to perform an analysis on expired practice data for BRC/LLM to see if these practices were functioning as intended past their credit duration of 10 years. After surveying the group to gauge their initial reactions to the data, a proposal was developed to extend the credit duration of both practices to 15 years based on the data provided by the jurisdictions.</p> <ul style="list-style-type: none"> • Timeline: Jan 2021 – May 2021 • Outcome: Proposal did not reach consensus in the BMPVAHAT due to lack of consistent data across jurisdictions, clarification needed between BMP lifespan and credit duration, too many practices being grouped under one CAST BMP, and insufficient input from groups who originally developed the credit duration. The credit duration remains the same (10 years) for both practices.

Wetland Practices

Wetland Restoration, Rehabilitation, and Creation: The Wetlands Workgroup developed a recommendation to remove the credit duration of select wetland practices due to regulatory programs in place that provide oversight to these practices. The recommendation no longer required those practices to have a credit duration and they would be permanently accounted for in the model. The BMPVAHAT voted on this proposal in February 2023 and did not reach consensus. Members indicated some reservations with the proposal and offered a modification to compromise on: “Remove the credit duration of select wetland practices due to regulatory programs in place that provide oversight to these practices, *until such time that the technology is available to use mapping tools that more accurately portray land use changes and determine wetland gains and losses in the Bay watershed.*”

The current status (as of 03/2023) of tracking wetlands in the Chesapeake Bay Program’s land use data is as follows (from Peter Claggett, USGS/Land Use WG Coordinator):

“I am aware of the Chesapeake Conservancy’s work to use machine learning to map the probability of wetland presence/absence but was not directly involved in that project. This past fall, I instigated two successful GIT-funded projects concerning wetlands, one focused on mapping non-tidal wetlands to update the National Wetlands Inventory and another to monitor seasonal changes in vegetation condition with an emphasis on tidal wetlands on the DelMarVa (to detect early signs of marsh migration). Remote sensing and machine learning are at the point where we can use them to map, and potentially to monitor, the probability of wetland presence/absence. This assertion comes with a few caveats. Such data are likely more accurate at mapping wetlands that are ponds unobstructed by tree canopy with year-round standing water compared to seasonally-wet non-tidal forested wetlands. More importantly, freely-available remotely sensed imagery (e.g., Landsat, Sentinel, NAIP, LiDAR) are not yet reliable for assessing wetland vegetation type and wetland hydrology. We can only infer function based on landform, landscape position, soils, and spectral qualities. Without field verification, there is no way to know with certainty if a wetland is still performing as designed. Even for ponds, our remote sensing techniques won’t be able to tell us if it is filling up with sediment, overrun by invasives, or is experiencing altered hydrology. There are special instruments such as hyper-spectral sensors and side-aperture radar that can be used to map invasives and monitor changes in wetland hydroperiod. Such data are currently cost-prohibitive, requiring dedicated flights and special expertise for data interpretation.

One component of a “compromise” could involve evaluating the accuracy of our tools and data for mapping presence/absence of wetland BMPs. For this purpose, we would ideally need polygons (or less preferably points) representing the location of wetland restoration, rehabilitation, and creation projects. We could then quantify the ability of our land use/cover data and the Conservancy’s machine learning model to accurately identify those projects. The project polygon data could be further used for testing new approaches for monitoring projects remotely.

In summary- my suggestion is to continue with the current BMP verification protocols while actively pursuing a potential remote sensing alternative for the future. While remote sensing may never fully replace field verification, it can make field verification much more efficient- e.g., replacing random 5% or 10% project inspections with targeted inspections of wetland projects with the greatest probability of alternation or impairment based on remotely sensed indices. This improvement in efficiency can probably be instituted for Phase 7 but we’ll need accurate polygons for most wetland projects.”

- **Timeline:** March 2021 – Feb 2023 / **Ongoing.**
- **Outcome:** **Approval from the BMPVAHAT is still pending.** The vote on the initial proposal did not reach consensus but modifications to the proposal were offered.

Forestry Practices

Forest Buffers and Tree Planting: The Forestry Workgroup developed a [recommendation](#) to extend the credit duration of the following practices from 10 to 15 years: *Forest Buffers, Forest Buffer Exclusion, Forest Buffer Exclusion Narrow, Forest Buffers Narrow, Forest Buffers Urban, Tree Planting, and Urban Tree Planting*. Following the 15-year credit, forestry and tree planting practices will be backed out of the model as BMPs due to the ability of the practices to be captured in the high-resolution land use data. The proposal was brought to the BMPVAHAT for approval in July 2021. It was subsequently approved by the Water Quality Goal Implementation Team (WQGIT) in [August 2021](#).

- **Timeline:** Feb 2021 – August 2021
- **Outcome:** **Proposal reached consensus.** Credit durations extended to 15 years.

Resource Improvement (RI) Forestry Practices: After the Forest Buffer and Tree Planting practice credit durations were extended to 15 years (see above), members of the BMPVAHAT raised the question of whether RI forestry practices qualified for this extension as well. At the Forestry Workgroup (FWG) [February 2023 meeting](#), the FWG determined that *RI-9: Forest Buffer Exclusion Area on Watercourse* and *RI-10: Forest Buffer on Watercourse* practices were functionally equivalent to the Forest Buffer practices listed in the recommendation above. The FWG leadership will work with the Agriculture Workgroup (AgWG) to determine if the credit duration of these practices should be consistent with the extension granted to the Forest Buffer practices (15 years). The AgWG developed the original [RI Practice Definition and Verification Visual Indicators report](#) in 2014, meaning any changes to the credit durations of these practices would require consensus approval from the AgWG.

- **Timeline/Outcome:** **Ongoing.** The proposal was approved by the FWG in February 2023 and is still awaiting approval from the AgWG.

Grass Buffers: The original grass buffer [expert panel report](#) stated that more research was needed on the maintenance and implementation of the practice to determine verification requirements. No research was provided to support grass buffers having as long as a lifespan as forest buffers (15 years). Grass buffers require regular maintenance and are more easily converted to cropland. The FWG stated there was not enough information available to pursue the issue and recommended forming an Expert Panel to investigate extending the credit duration of grass buffers. In August 2021, the BMPVAHAT coordinator [presented data](#) from Maryland showing expired grass buffer practices and whether they met inspection standards. After this presentation, nothing came out of the BMPVAHAT to continue pursuing this issue.

- **Timeline:** March 2021 – August 2021 / Ongoing.
- **Outcome:** **Ongoing. Sufficient data was not provided to pursue extending the credit durations.** The FWG Expert Panel that grass buffers were originally included in did not have the subject matter expertise to determine the credit durations of this practice. Since the practice is categorized under the agricultural sector, the formation of an expert panel for grass buffers will need to be determined by the Agriculture Workgroup (AgWG) if they choose it to be a priority.

Discussions and decisions that the BMPVAHAT investigated to address *Task 3. Explore Lesser Used Approaches to BMP Verification* also relate to *Task 5. Broader Programmatic Discussions*. See more in the section below.

<p>Task 3. Explore lesser-used approaches to BMP verification.</p>	<p>To address Task 3, the BMPVAHAT investigated several lesser-used and new approaches to verifying BMPs (e.g., verifying remotely using new technologies such as smart sensors and drones, self-reporting of on-the-ground BMPs by farmers, businesses, NGOs, and other stakeholders, and verification using performance-based metrics or presumed compliance principles).</p> <p>The BMPVAHAT was briefed on a variety of projects looking to enhance agricultural data collection throughout the Bay watershed, including data management projects, survey projects, research projects, and remote sensing projects. These pilots were multiyear projects. The results of these pilots were not finalized by the time the BMPVAHAT charge was completed, however, they provided a pathway for new methodologies to be approved by source sector workgroups following the sunset of the BMPVAHAT.</p> <ul style="list-style-type: none"> • Timeline: September 2021 – March 2022 • Outcome: As of October 2022 (the last meeting of the BMPVAHAT and the end of its charge), the results of the pilot projects had not yet been finalized. As such, the BMPVAHAT was unable incorporate these into recommendations on procedures for review and approval of any additional data collection and verification expectations that are beyond those included in jurisdictions’ approved verification program plans and the CBP partnership’s Basinwide verification framework document. Source sector workgroups remain responsible for approving and reviewing new methodologies for verification. <p>Addressed by Exploring Alternative Verification Methods: Pilot Projects</p> <p>The BMPVAHAT was briefed on various research and projects exploring alternative verification methods, such as:</p> <ul style="list-style-type: none"> - PADEP / USDA-NRCS Potomac Watershed Remote Sensing Pilot Project - MDA / USGS Cover Crop Remote Sensing Project <ul style="list-style-type: none"> - Use of satellite remote sensing to evaluate winter cover crop performance, map conservation tillage, and assist MD and DE cost-share programs with additional understanding of field management - USGS / Chesapeake Conservancy Land Use Mapping Project <ul style="list-style-type: none"> - ongoing work with remote sensing and geospatial technologies. <p>The BMPVAHAT was also briefed on two pilot projects, developed by Pennsylvania and Virginia, to address the inability of states to have access to agricultural conservation practice location data due to privacy statutes in Section 1619 of the 2008 Farm Bill.</p> <ul style="list-style-type: none"> - Agricultural Conservation Data Aggregation Pilot Project <ul style="list-style-type: none"> - PA / EPA / USDA / USGS - Timeline for project: 2020 – 2022 - Virginia Technical Assistance Agreement Pilot Project <ul style="list-style-type: none"> - VA / USDA-NRCS - Timeline for project: 2020 – 2025 <p>Addressed by Identifying Barriers to Lesser-used Approaches to BMP Verification</p>
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	<p>A comprehensive overview of the of the current protocols and requirements in place for remote sensing, statistical subsampling, and other alternative methods of verification was presented to the BMPVAHAT. The BMPVAHAT leadership facilitated several discussions with the group to identify any challenges associated with jurisdictions’ ability to adopt this method of verification, including capacity constraints, available funding, and the inability to locate federally funded practices due to privacy restrictions.</p> <p>The barriers identified in these discussions, along with the discussions of broader programmatic issues (see Task 5 below), were taken to the WQGIT leadership, EPA Region 3 Acting Regional Administrator, and USDA-NRCS State Conservationist to identify potential solutions. The result of these meetings was to wait until the pilot projects were finalized to determine if they would assist jurisdictions’ in overcoming the programmatic issues associated with the 1619 agreements and lack of access to data for federally funded practices.</p>
<p>Task 4. Review recommendations from ongoing BMP verification work being undertaken by the Chesapeake Bay Program</p>	<p>The BMPVAHAT did not fit into the chain of approval for other workgroups across the Bay Program working on verification issues. As such, no official recommendations from the partnership were brought to the BMPVAHAT for consideration during their charge. The BMPVAHAT was updated on a regular basis on verification work charged to different workgroups by the Management Board (e.g., cutoff/backout, updating and submitting changes to jurisdictions’ Quality Assurance Project Plans, etc.), however, these issues were not directly tasked to the BMPVAHAT by the Management Board. Members were encouraged to attend those source sector workgroup meetings to provide input, as appropriate.</p>
<p>Task 5. Broader Programmatic Discussions</p>	<p>Addressed by Providing a Forum to Discuss Broader Programmatic Challenges</p> <p>Halfway through the two-year charge, BMPVAHAT members expressed the need to have broader conversations surrounding verification, as many of the challenges faced by jurisdictions relate to programmatic challenges rather than technical ones. The BMPVAHAT leadership incorporated these discussions into our monthly meetings as time allowed.</p> <p>The goal of these discussions was to help jurisdictions learn about similarities and differences across state verification programs, identify common challenges and brainstorm potential solutions. Topics included discussions on individual state verification programs, 1619 agreements and the ability to ensure full access to federal cost-shared agricultural conservation practice data, challenges and solutions related to the Verification Framework, concerns about capacity of jurisdictions to perform on-the-ground verification, and more.</p> <p>The extension of credit durations and implementation of partial credit were identified as potential interim solutions to start addressing the challenges identified by the group while longer term solutions were being developed. The verification pilot projects in Pennsylvania and Virginia were also identified as potential solutions, contingent upon whether the outcomes of these pilots meet the expectations of the state agencies and assist them in overcoming the issue of the 1619 agreements (see Task 3 above).</p> <p>Discussions and decisions that the BMPVAHAT investigated to address <i>Task 3. Explore Lesser Used Approaches to BMP Verification</i> also relate to <i>Task 5. Broader Programmatic Discussions</i>. See more detail in the section above.</p> <ul style="list-style-type: none"> • Timeline: April 2021 – March 2022

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| | <ul style="list-style-type: none">• Outcome: The extension of credit durations and implementation of partial credit were identified as potential interim solutions to start addressing the concerns raised in these discussions while longer term solutions were being developed. Partial credit was explored but the BMPVAHAT did not come to consensus on the proposal. The extension of credit durations for individual practices were also explored and approved on a case-by-case basis. These broader discussions and identification of programmatic challenges helped inform the <u>suggestions</u> developed by the BMPVAHAT leadership team in Section VI. See Appendix 2 for more information regarding verification program complications and solutions identified by jurisdictions. |
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IV. Summary of Meetings

The BMPVAHAT convened virtually twenty-one times from August 2020 to September 2022. Each meeting was approximately two hours. The dates, key agenda items, and outcomes of each meeting are summarized in Table 3, with links to notes from each meeting. See [Appendix 1](#) for direct links to meeting minutes, along with bulleted action items and decisions.

In addition to the meetings in Table 3, the coordinator, Vanessa Van Note and staffer, Jackie Pickford, attended the meetings outlined in Table 4.

Table 5. List and Summary of BMPVAHAT Meetings with Decisions.

Date and Title (link to meeting materials)	Key Agenda Items and Outcomes
08/2020 BMPVAHAT Meeting	<p>Review of the WQGIT request letter to the Management Board and the Management Board charge to the WQGIT that resulted in the formation of the BMPVAHAT. Presented the draft task statement to the BMPVAHAT that would later be brought to the WQGIT for approval. The BMPVAHAT participants confirmed that there was accurate representation in the materials Vanessa Van Note provided.</p> <p>Lucinda Power, EPA, presented on the availability of funding to support the charge of the group. Jeff Sweeney, EPA, presented on credit durations. Vanessa Van Note, EPA/Coordinator, gave a comprehensive history of the BMP Verification Program. Additionally, a condensed history was provided to the team for their reference to help them understand how the framework document was developed. A link to the jurisdictions' quality assurance project plans (QAPPs) was provided, as this material outlines how each jurisdiction actually implements its point source and nonpoint source verification programs.</p> <p>DECISION: The BMP Verification Ad Hoc Action Team decided there is fair representation of participants included on the team to meet the current goals of the group.</p>
09/2020 BMPVAHAT Meeting	<p>Those who were nominated to chair the BMPVAHAT (Dr. Elliott Kellner, James Martin, and Jason Keppler) introduced themselves and explained their interest in and qualifications for serving as chair.</p> <p>Vanessa Van Note, EPA/Coordinator, presented on the difference between Resource Improvement (RI) Practices and NRCS conservation practices, as the AgWG took different approaches for assigning credit durations to these practice types. Vanessa Van Note and Mark Dubin, UME-CBPO, provided an in-depth look into the establishment of credit durations. Vanessa Van Note outlined the concerns regarding BMP credit durations brought forward by the group.</p>
10/2020 BMPVAHAT Meeting	<p>The Chair and Vice Chair were approved by the group. Vanessa Van Note presented on the group's key focus areas (credit duration and partial credit), as well as summarizing the status on additional verification concerns. Jeff Sweeney, EPA, presented on the impact of verification on load reductions.</p> <p>DECISION: The BMP Verification Ad Hoc Action Team approved Dr. Elliott Kellner, WVU, as the Chair for the group.</p>

Date and Title (link to meeting materials)	Key Agenda Items and Outcomes
	<p><u>DECISION</u>: The BMP Verification Ad Hoc Action Team members <u>approved a Vice Chair Structure</u> and approved Jason Kepler, MDA, as the Vice Chair.</p> <p><u>DECISION</u>: The WQGIT approved the BMPVAHAT's Task Statement in October 2020.</p>
<p><u>11/2020 BMPVAHAT Meeting</u></p>	<p>Elliott Kellner, WVU/Chair, and Vanessa Van Note, EPA/Coordinator, facilitated a discussion on the <u>process for approving recommendations</u>, as one was not outlined for the group by the WQGIT or MB. Vanessa Van Note presented on the specific BMPs that group membership had brought forward for credit durations reevaluation, along with a <u>proposed method for reevaluating these credit durations</u>.</p> <p>Jason Kepler, MDA/Vice Chair, presented on <u>Maryland's verification program</u>, how the program is implemented, and what their procedures are.</p>
<p><u>12/2020 BMPVAHAT Meeting</u></p>	<p>Peter Claggett, USGS-CBPO, presented on <u>how aerial imagery can be used as a verification method</u> and the limitations of using aerial imagery.</p> <p>Vanessa Van Note, EPA/Coordinator, revisited the <u>method for approving the decisions</u> after incorporating the feedback provided following the November meeting. Vanessa Van Note and Elliott Kellner continued to facilitate discussion on the <u>specific BMPs for which credit durations would be reevaluated</u>.</p> <p><u>DECISION</u>: The BMP Verification Ad Hoc Action Team approved the <u>proposed method for reevaluating credit durations</u>.</p> <p><u>DECISION</u>: The list of priority BMPs has been approved by the BMP Verification Ad Hoc Action Team.</p>
<p><u>01/2021 BMPVAHAT Meeting</u></p>	<p>Vanessa Van Note, EPA/Coordinator, incorporated the changes requested at the December meeting for the proposed <u>chain of approval for decisions/recommendations</u> and a discussion was again facilitated by Elliott Kellner and Vanessa Van Note. Vanessa Van Note presented with Timothy Peters, NRCS, on <u>Barnyard Runoff Control (BRC) and Loafing Lot Management (LLM) Credit Durations</u>.</p> <p><u>DECISION</u>: The BMP Verification Ad Hoc Action Team approved the <u>chain of approval method</u> for decisions made withing the BMP Verification Ad Hoc Action Team.</p>
<p><u>02/2021 BMPVAHAT Meeting</u></p>	<p>Sally Claggett, USFS, <u>presented existing and proposed credit durations for forestry practices</u>: Forest Buffers, Narrow Forest Buffers, Tree Planting, and Forest Planting.</p> <p>Vanessa Van Note, EPA/Coordinator, and Elliott Kellner, WVU/Chair, <u>recapped the January meeting discussion</u> on BRC and LLM and <u>continued the discussion on BRC and LLM credit durations</u>. Kate Bresaw, PA DEP, presented BRC and LLM practice data from Pennsylvania's PracticeKeeper database.</p>
<p><u>03/2021 BMPVAHAT Meeting</u></p>	<p>Vanessa Van Note, EPA/Coordinator, <u>presented on</u> the state data for BRC and LLM provided by Maryland, Pennsylvania, and New York. She expanded on the Trails and Walkways BMP (that select states report as BRC). This discussion also covered inspection dates reported in the 2020 progress run and the impacts of credit duration on implementation of new BMPs.</p> <p>Vanessa Van Note and Elliott Kellner, WVU/Chair, provided an <u>introductory presentation</u> to the Grass Buffer BMP and the credit duration assigned to it.</p>

Date and Title (link to meeting materials)	Key Agenda Items and Outcomes
	<p>Vanessa Van Note began preliminary research for and working with the Wetlands Workgroup (WWG) on the credit durations for wetland practices. See Wetland Announcement.</p> <p>The draft proposal for the extension of credit durations for the forestry practices discussed in the February meeting was provided to the group for review. The Forestry Workgroup (FWG) provided an update on work being done to verify forest practices using aerial imagery.</p>
<p>04/2021 BMPVAHAT Meeting</p>	<p>Dr. David Goshorn, chair of the Enhancing Partnership, Leadership, and Management GIT (GIT6), presented a brief overview of consensus to assist the group in its decision-making.</p> <p>Jill Whitcomb, Director of the PA DEP Chesapeake Bay Office, presented an overview of PA's verification program and the inspection data that is available through their program for BRC and LLM practices.</p> <p>Vanessa Van Note, EPA/Coordinator, provided new information for the group to consider when voting to extend the credit duration of BRC and LLM. A discussion followed, facilitated by Elliott Kellner. A vote on extending the credit durations was conducted per the consensus continuum. Consensus was not reached.</p> <p>Vanessa Van Note and Elliott Kellner, WVU-Chair, presented on the Credit Durations of Grass Buffers.</p> <p>CONSENSUS NOT REACHED: The BMP Verification Ad-Hoc Action Team did not reach consensus on the extension of BRC/LLM credit durations. See results for more information on votes and rationale. Moving forward, the BMPVAHAT leadership will discuss next steps after hearing recommendations from the smaller GIT6 meeting on Wednesday, April 14th, 2021.</p>
<p>05/2021 BMPVAHAT Meeting</p>	<p>Elliott Kellner, WVU/Chair, outlined the path forward for the BRC and LLM decision. The options were: 1) work to find a solution as a group and strive for consensus again based on the solution (suggested); 2) table the issue until more information becomes available; or 3) elevate the issue to the WQGIT. The decision on which option pursued by the group was determined by simple majority per input from GIT6.</p> <p>Brittany Sturgis, DNREC, presented on the successes and challenges of Delaware's Verification Program.</p> <p>Vanessa Van Note, EPA/Coordinator, introduced the concept of partial credit to provide the group with a general understanding of what was addressed in the MB charge.</p> <p>DECISION: The BMP Verification Ad-Hoc Action Team has decided to table the conversation of extending BRC and LLM credit durations.</p>
<p>06/2021 BMPVAHAT Meeting</p>	<p>Vanessa Van Note, EPA/Coordinator, gave a brief review of the differences between practice lifespan and credit duration and highlighted key information from the verification framework (along with a history on 1619 agreements) and facilitated a larger discussion on programmatic issues brought to light by Delaware at the May 2021 meeting.</p> <p>Vanessa Van Note provided requested clarification on the concept of partial credit.</p>

Date and Title (link to meeting materials)	Key Agenda Items and Outcomes
	Vanessa Van Note introduced the effort to compile solutions to verification challenges.
07/2021 BMPVAHAT Meeting	<p>Sally Claggett, USFS/FWG Coordinator, presented an updated proposal from the Forestry Workgroup for extending the credit durations of forest and tree planting BMPs. The BMPVAHAT voted on the extension from 10 to 15 years on the following practices:</p> <ol style="list-style-type: none"> 5. Forest Buffers 6. Forest Buffers Exclusion 7. Forest Buffers Exclusion Narrow 8. Forest Buffers Narrow 9. Forest Buffers Urban 10. Tree Planting 11. Urban Tree Planting <p>The group continued the June Meeting discussion on broader programmatic issues with implementing BMP verification programs. Definitions from the BMP Framework Document were provided.</p> <p>Vanessa Van Note, EPA/Coordinator, facilitated a discussion on the support for partial/diminishing credit.</p> <p>DECISION: The BMP Verification Ad-Hoc Action Team voted to support* the following recommendation from the FWG: Extend the credit durations for the practices listed below from 10 to 15 years: Forest Buffers, Forest Buffers Exclusion, Forest Buffers Exclusion Narrow, Forest Buffers Narrow, Forest Buffers Urban, Tree Planting, and Urban Tree Planting. *Note: <i>There were stand aside votes and concerns raised by the group. The BMPVAHAT will brief the WQGIT on the concerns raised and the limits of our "support".</i></p>
08/2021 BMPVAHAT Meeting	<p>The group continued a broader programmatic discussion led by the following guiding questions: <i>How have states overcome the challenge of not being able to locate NRCS/federally funded practices? Should states be responsible for federally funded practices? Which BMPs are the most difficult to locate? What are the proper channels for these discussions that have not already been identified?</i></p> <p>Vanessa Van Note, EPA/Coordinator, presented on short term solutions to overarching problems.</p> <p>Vanessa Van Note categorized the federally funded BMPs to prioritize the efforts of the BMPVAHAT and Chesapeake Bay Program.</p> <p>Vanessa Van Note shared the results of the Mentimeter exercise (the purpose of the unofficial vote was to determine if there was interest in pursuing partial credit from the majority of the group). See results here. She facilitated a discussion to support the request for developing an official proposal for partial credit.</p> <p>Vanessa Van Note presented on arguments for and against the extension of the grass buffer credit duration and presented Maryland's inspection data on expired grass buffer practices. A breakdown of grass buffer related practices was provided.</p>

Date and Title (link to meeting materials)	Key Agenda Items and Outcomes
09/2021 BMPVAHAT Meeting	<p>Mark Dubin, UME-CBPO, presented on alternative verification methods for verifying agricultural BMPs (as approved in the Agriculture Verification Guidance of the BMP Verification Framework). This presentation included ongoing research projects.</p> <p>Vanessa Van Note, EPA/Coordinator, identified, outlined, and presented on the approved or suggested process for developing and approving alternative verification methods. An updated version provided at the 10/2021 meeting is here.</p> <p>Vanessa Van Note led a broader programmatic discussion guided by the following questions: <i>If all states had full access to point location data, would they then have no obstacles in the way of executing their verification plans? What additional resources are needed for states to execute their verification programs? Should states be responsible for locating and verifying federally funded practices? Are we undercounting conservation at the Bay Program?</i></p> <p>Responses were collected on a JamBoard here.</p>
10/2021 BMPVAHAT Meeting	<p>Vanessa Van Note, EPA/Coordinator, led a programmatic discussion focused on statistical sub-sampling and the state responsibility for verifying federally funded practices. Link to the JamBoard is here.</p> <p>Vanessa Van Note and Jason Keppler, MDE/Vice Chair, proposed a diminishing credit (partial credit) solution for expired NEIEN practices and solicited feedback from the group.</p> <p>At the request of the membership, Vanessa Van Note provided reference materials on the development and approval process for alternative verification methods, the CBP BMP Verification Program design matrix, the steps jurisdictions need to take to develop and implement their programs, and the checklist of components that make up jurisdictions' verification protocols/methods.</p>
11/2021 BMPVAHAT Meeting	<p>Vanessa Van Note, EPA/Coordinator, presented an update from the wetlands workgroup on the extension of the wetland restoration and wetland creation BMP credit durations.</p> <p>The group continued a discussion, facilitated by Vanessa Van Note, on statistical sub-sampling methods and funding available for verification program. Link to the JamBoard here. Vanessa Van Note provided an overview on statistical sub sampling, per Appendix B of the Verification Framework.</p> <p>Vanessa Van Note reviewed the results from the partial credit survey in preparation for a vote on the proposal at the 12/2021 meeting. <i>This survey enabled members to voice their support of the concept, explain why they may not support it, provide issues they see with incorporating the method, identify which BMPs it should apply to, and request supporting documentation.</i></p>
12/2021 BMPVAHAT Meeting	<p>Vanessa Van Note, EPA/Coordinator, presented the proposal for extending the credit durations of wetland restoration and wetland creation.</p> <p>Elliott Kellner, WVU/Chair, reviewed the original charge of the BMP Verification Ad-Hoc Action Team and discussed sunsetting the group prior to August 2022 or meeting less frequently up to August 2022 (August 2022 is when the 2-year charge would officially come to a close).</p>

Date and Title (link to meeting materials)	Key Agenda Items and Outcomes
	<p>Vanessa Van Note reviewed the draft recommendation for partial (diminishing) credit. Partial credit was the preferred phrase for describing the concept as it had been used originally in the letter from the WQGIT to the MB. The proposal included how partial credit would work in NEIEN, which practices it would apply to, and the sunset period for the proposal.</p>
<p>01/2022 BMPVAHAT Meeting</p>	<p>Ted Tesler and Kate Bresaw from PA DEP came forward to the group with different “reporting and tracking scenarios for partial credit for inclusion in the partial credit recommendation”.</p> <p>Vanessa Van Note, EPA/Coordinator, reviewed the additional comments and feedback provided by the group on the draft partial credit recommendation. She presented points to consider for the recommendation of partial credit to summarize how the group arrived at its most recent proposal, a discussion on partial credit with the WQGIT leadership and the takeaways from the survey of the AgWG on the concept of partial credit (as partial credit would apply to agriculture practices primarily). A new proposal was drafted from the comments received.</p> <p>Feedback on the proposal to extend the credit duration of wetland practices were compiled by Vanessa Van Note and provided to the group. This was taken back to the Wetlands Workgroup and an ad-hoc group of interested parties from the Wetlands Workgroup.</p> <p>Vanessa Van Note provided an example of how partial credit would influence the amount of units of a practice credited using 2021 progress data.</p>
<p>02/2022 BMPVAHAT Meeting</p>	<p>A decision was requested on the proposed partial credit methodology using the consensus continuum: <i>Apply partial credit to the federally funded multi-year agriculture practices listed in Table 1. Partial credit will only be applied during the development of Phase 7 of the watershed model to allow time for the Partnership to address the issues outlined below [see document]. When Phase 7 is officially implemented, partial credit will sunset (terminate).</i></p> <p>Dean Hively, USGS, presented on his work using satellite remote sensing to evaluate winter cover crop performance, map conservation tillage, and assist Maryland and Delaware’s cost-share programs with additional understanding of field management.</p> <p>CONSENSUS NOT REACHED: The BMPVAHAT did not reach consensus on recommending the proposed methodology for partial credit. See results of the vote for more information.</p>
<p>03/2022 BMPVAHAT Meeting</p>	<p>Marcie Dunn and Andrew Kling, USGS/USDA-ARS, presented on an NRCS Remote Sensing Pilot project in PA that was completed by NRCS in partnership with PA DEP to assist the commonwealth in receiving additional credit for applied agricultural conservation practices. The concept was to determine if remote sensing imagery could be utilized to identify and inventory conservation practices if their associated attributes can also be collected using these methods. The project developed a baseline inventory of conservation practices in the Pennsylvania portion of the Potomac River Watershed.</p> <p>Katie Walker, Chesapeake Conservancy, presented on ways to utilize remote sensing and other geospatial technologies to support BMP verification.</p> <p>Vanessa Van Note outlined next steps for the partial credit proposal that did not reach consensus at the 02/2022 meeting.</p>

Date and Title (link to meeting materials)	Key Agenda Items and Outcomes
10/2022 BMPVAHAT Meeting	<p>Vanessa Van Note, EPA/Coordinator, gave an overview of the BMPVAHAT comments on the wetland credit duration recommendation and updated the group on the ad-hoc meeting with Wetlands experts and Wetland Workgroup (WWG) leadership regarding these comments. Pam Mason, VIMS/WWG Chair, shared the WWG perspective on verification of wetland practices.</p> <p>Vanessa Van Note reviewed the BMPVAHAT final report and suggestions document, including an outline of the findings of the group, official decisions made to meet the original charge, and any outstanding issues and/or recommendations to the WQGIT on a path forward regarding verification. There was an open discussion on the suggestions to the WQGIT. A review period of one month will be issued at the time the document is released to the BMPVAHAT membership for members to provide comments on the report before the report is provided to the WQGIT.</p> <p><u>CONSENSUS NOT REACHED:</u> Following this meeting, a poll was sent out to the BMPVAHAT membership to vote on the extension of credit duration for select wetland practices. The proposal did not reach consensus. See the official poll results for more information. Modifications to the proposal will be offered for additional consideration.</p>

Table 6. Meetings Attended by the Coordinator and Staffer on behalf of the BMPVAHAT. **Note:** as many of these meetings were irregular meetings scheduled separately from the BMPVAHAT, there is no official documentation on these meetings. The notes shown in this table are in a draft form. Not all additional meetings attended by the chair, coordinator, and staffer are listed here.

Date and Title (link to meeting materials)	Key Discussion Points and Outcomes
02/2021 BMPVAHAT Update to the WTWG	<p>The BMPVAHAT Coordinator summarized the credit durations reevaluation and alternative to the “all or nothing” approach task, which included summarizing possible approaches to partial credit. Presentation is here.</p>
03/2021 BMPVAHAT Update to the WQGIT	<p>The BMPVAHAT Chair and Coordinator outlined the team’s chain of approval and status on re-evaluating credit durations and discussing partial credit. This presentation focused on outlining the arguments for and against the extensions to the forestry practices, barnyard runoff control, and loafing lot management credit durations. Presentation is here.</p>
04/2021 Meeting with PA DEP to Discuss the credit duration of Barnyard Runoff Control and Loafing Lot Management	<p>Jill Whitcomb, PA DEP, shared the PA DEP presentation on Barnyard Runoff Control and Loafing Lot Management data from PA’s PracticeKeeper database. Full meeting minutes are in Appendix 1.</p>
05/2021 Forestry Workgroup Forestry Practices Credit Durations	<p>Sally Claggett, USFS, received confirmation from the FWG on the practice life/credit durations assigned to each forestry practice. These credit durations were incorporated into the recommendation by Vanessa Van Note, Coordinator.</p>

Date and Title (link to meeting materials)	Key Discussion Points and Outcomes
07/2021 AgWG Meeting Introduction to the BMPVAHAT	Vanessa Van Note, Coordinator, and Elliott Kellner, Chair, gave an overview of the purpose, scope, and tasks of the team, as well as the agricultural credit durations the team was working to evaluate. Presentation is here . Through this presentation, the leadership team hoped to collect AgWG input on the credit durations being reevaluated that were previously established through AgWG decisions.
07/2021 Wetland Workgroup Presentation on Credit Durations	Vanessa Van Note explained the purpose of verification, the concept of credit durations, and proposed the possibility of extending the credit duration of wetland restoration. Presentation is here .
08/2021 Wetland Workgroup Presentation on Credit Durations	Vanessa Van Note, Coordinator, presented on rationale for existing credit durations and facilitated a discussion on an extension for wetland restoration and wetland reestablishment. Presentation is here . This led to an ad-hoc meeting with a smaller group to discuss options.
08/2021 BMPVAHAT Update to the EPA Bay Program Management Team	Vanessa Van Note, Coordinator, presented to the Bay Managers on the issues with data sharing and capacity to verify. She outlined the issues faced by WV, DE, VA, and PA with verifying multi-year agricultural practices, providing suggestions on realistic asks of USDA-NRCS and posing the question “Should States be responsible for verifying practices that are only funded through the NRCS?”. On the capacity to perform verification, the coordinator outlined the resource issues in DE, VA, and PA, along with the solutions states have employed to overcome the workforce issue posing the question “How do we respond to the “not enough resources” statements if we do not have a concrete amount of what verification programs cost?”. Slides are found in Appendix .
08/2021 Meeting between Ad-Hoc Leadership and WQGIT Leadership on the Charge of the Ad-Hoc Team.	<p><u>Points brought forward to the WQGIT by the BMPVAHAT Chair and Coordinator:</u></p> <ul style="list-style-type: none"> - We have fulfilled the charge relating to (in my opinion) credit durations and partial credit. We have given members the opportunity for broader programmatic discussions (which we started providing the opportunity for back in October/November when MD came forward to discuss their verification program). - We can continue forward to discuss verification methods to overcome state challenges. - Meeting as a larger group at a lesser frequency – bimonthly? Quarterly? In between meetings, have the possibility for smaller group meetings if needed (meetings with jurisdictions on issues, meetings with workgroup chairs on sector guidance) - The jurisdiction the group has over the framework document: We are not the BMP Verification Committee or BMP Verification Review Panel, nor are we the sector workgroups. We can meet to discuss the guidance, but we should not be able to propose changes to them without the source sector workgroup’s input (as they established these guidance documents originally). - Shifting the focus of the group to discussing new verification methods (for example, utilizing statistic methods to overcome resource challenges) - We need higher level support from the MB on: Data Sharing Issues. For NRCS/FSA BMPs, DE, VA, PA and WV do not have the point locations for these practices, so they cannot find these practices to verify them. If they can find them, they still require approval from the landowner

Date and Title (link to meeting materials)	Key Discussion Points and Outcomes
	<p><u>Questions</u></p> <p>We need higher level support from the MB on: The states have resource concerns: “we do not have the resources to complete verification”. How do we confirm or deny this? How do we track the flow of resources and cost of verification programs? Is a Cost-Benefit Analysis an option?</p>
<p><u>08/2021</u> <u>WQGIT Meeting Recommendation to Extend the Credit Duration of Forestry Practices</u></p>	<p>Sally Claggett and Vanessa Van Note gave <u>an overview of the recommendation</u> from the FWG. Consensus was reached on the proposal and the credit durations were approved by the WQGIT.</p>
<p><u>09/2021</u> <u>Wetland Workgroup Ad-Hoc Meeting on Credit Durations</u></p>	<p>The Coordinator and Staffer met with a smaller group from the wetlands workgroup to develop the <u>Recommendation from the Wetlands Workgroup to Extend the Credit Duration of Select Wetland Practices</u>. Meeting minutes are in the recommendation document.</p>
<p>09/2021 (Approximate Date) NRCS – EPA Meeting on 1619 Agreements</p>	<p>Diana Esher, Acting Regional Administrator at the time, and Terrell Erickson, USDA-NRCS Northeast Regional Conservationist met to discuss the challenges the CBP partnership was facing due to lack of full access to federal agricultural conservation practice data through 1619 data sharing agreements. EPA proposed collaborating to find workable solutions that comply with data privacy provisions in the Farm Bill. The options presented were:</p> <p><i>For addressing expired practices:</i></p> <ol style="list-style-type: none"> 1) USDA grant data sharing agreements with appropriate entities (land grant universities, state ag departments, etc) within the Chesapeake Bay States. 2) EPA and the Bay States pay NRCS or an approved third party to work with willing landowners to evaluate expired practices to determine whether they are functioning as designed. 3) CBP partnership apply a statistically valid methodology for crediting expired practices based on data from MD and VA’s (via the VADCR 1619 agreement) verification efforts for the subset of multi-year practices that are most critical for Bay States. <p><i>For accounting for all conservation efforts without double counting:</i></p> <ol style="list-style-type: none"> 1) USGS compiles all state and USDA into one database, remove the double counted practices, and send aggregated data to State for reporting to CBPO (assuming PA Data Aggregation Pilot is successful and USGS is willing to carry out this work). <p>Outcome of the meeting: USDA-NRCS would continue this conversation once the pilot projects in VA and PA (completed in 2022) were finished.</p>
<p><u>02/2022</u> <u>Wetlands Workgroup Meeting to Discuss BMPVAHAT</u></p>	<p>Vanessa Van Note, Coordinator, presented the <u>comments from the BMPVAHAT</u> membership from the December 2021 meeting on the wetland workgroup recommendation to extend the credit duration of wetland practices.</p>

Date and Title (link to meeting materials)	Key Discussion Points and Outcomes
Comments on Recommendation	
<p>07/2022 Ad-Hoc Meeting with Wetlands Workgroup Leadership on the Extension of Wetland Practice Credit Durations</p>	<p>Attendees: Pam Mason, Chris Guy, Steve Strano, Vanessa Van Note, Denise Clearwater</p> <p>Notes taken by BMPVAHAT Staffer during Meeting:</p> <ul style="list-style-type: none"> • Wording in Wetlands Outcome is inconsistent with the BMP definitions <ul style="list-style-type: none"> - Outcome doesn't have rehabilitation. <p>The wording of "Verification" in Expert Panel report is not used correctly (see pg 34)</p> <ul style="list-style-type: none"> - Difference between ongoing follow up versus verification immediately after it's built - Should have use the word "validate" instead - From EP Report: "5. Ongoing verification – Verification is required to ensure that the wetland BMP projects are performing as designed." <p>Argument from BMPVAHAT: Comparison to forestry practices. <i>Counter argument:</i> Unfair to compare forest practices to wetlands.</p> <ul style="list-style-type: none"> - Wetlands is changing habitat, forest practices are changing land cover - Forest practices can be identified using imagery, whereas wetlands cannot be identified using land cover/use data yet ➤ For nontidal wetlands, practices are not disappearing. FSA has looked at re-enrollment rates for these that may satisfy the BMPVAHAT concerns. <ul style="list-style-type: none"> - In cases where people do not re-enroll, it's almost always because they are not eligible anymore & instead went to some easement. Not because they are "getting rid of the wetland" or changing it to ag land or something - The re-enrollment rate is around 88% (need to double check this) - Talk to Glenn Carowan, MD DNR, and Lara Pleasanton, FSA-MD (they might have access to the data) ➤ For tidal wetlands, practices are also not disappearing. <ul style="list-style-type: none"> - Required to ask for a permit to "undo" a tidal wetland so it's a non-issue - Permits for tidal wetlands are usually for highways being built, but not common - All permits tracked through regulatory authority, lots of regulatory aspects to it <ul style="list-style-type: none"> - Should investigate these regulations. - Reach out to Todd Lutte, EPA
<p>12/2021 AgWG Meeting Partial Credit Proposal Input</p>	<p>The BMPVAHAT Coordinator partnered with the AgWG Coordinator to receive input from the AgWG on the partial credit proposal prior to the official vote on the proposal at the BMPVAHAT. The reason for collecting this information was because of the USDA-NRCS data sharing issue. Loretta Collins, AgWG Coordinator, presented on the concept of partial credit linked here and conducted the survey linked here.</p>
<p>03/2022 Meeting with WQGIT Leadership to Discuss Charge and</p>	<p>The WQGIT leadership recommended an additional attempt to reach consensus by meeting with the members who voted "HOLD" to discuss potential compromises or modifications of the proposal. If consensus is not reached after this additional</p>

Date and Title (link to meeting materials)	Key Discussion Points and Outcomes
Challenges in the Group	<p>attempt, the issue will be elevated to the WQGIT. Vanessa also discussed the group’s desire to elevate the conversation of access to federal data. The WQGIT leadership indicated that these discussions would not take place until after the pilot projects in PA and VA end.</p> <p>Notes taken by the BMPVAHAT staffer are below:</p> <ul style="list-style-type: none"> • Possible solutions to verification seemed to be in dissonance with one another. There seems to be so many stipulations attached to everyone’s votes and a lot of them seem to be in dissonance with one another. • Identify what work is needed for HOLD votes for partial credit. <ul style="list-style-type: none"> ○ Suggestion to elevate the issue rather than the solution if we can’t come up with one. • Fed data sharing issue - “ensuring full access to federal ag data” part of the verification agreement has not been fulfilled. <ul style="list-style-type: none"> ○ How do we talk about this as a partnership? High level conversation. We can’t fix it in the BMPVAHAT. <ol style="list-style-type: none"> a. Maybe states approaching USDA from the PSC level? b. EPA elevated this to the Regional Administrator who spoke with NRCS. NRCS said we’ll see how the pilots go. c. Maybe ask for a commitment to finding a solution (on a federal level) d. Maybe have a one on one with Kelly Shenk to talk about this on federal side e. Wait until Pennsylvania pilot to see what comes to fruition
03/2022 Meeting with Members who voted “hold” on the partial credit proposal	<p>Follow up meeting with members who voted “HOLD” on the partial credit proposal with the purpose of identifying room for compromise on the proposal. This meeting did not end in all members moving from their “HOLD” position. Meeting minutes are in Appendix 1.</p>
02/2023 FWG meeting for approval of RI forestry practices	<p>Vanessa presented to the Forestry Workgroup about Forest Buffer Resource Improvement (RI) practices currently being reported by the states and held a discussion about whether these practices are functionally equivalent to the Forest Buffer BMPs that had their credit duration extended to 15 years. The FWG came to the following decision:</p> <p>Decision: The FWG determined Resource Improvement (RI) practices 9: Exclusion Area on Watercourse and 10: Forest Buffer on Watercourse to be functionally equivalent to CBP Riparian Forest Buffers based on the visual indicators published in the CBP Resource Improvement Practice Definitions and Verifications Visual Indicators Report by the AgWG. The FWG requests that the credit durations for these practices be extended to 15 years to align with previous decisions made by the partnership on the credit durations of tree practices.</p> <p>Outcome of this meeting: Vanessa plans to present the FWG recommendation above to the AgWG in March/April 2023. Because the original report and verification requirements for these practices were developed under the AgWG, they will have to vote to overturn the decision and extend the credit duration to 15 years.</p>

VI. Suggestions from the BMPVAHAT Leadership Team

As a result of the discussions and outcomes of the BMPVAHAT charge and tasks, the BMPVAHAT leadership team developed the following suggestions for consideration by the Water Quality GIT, Chesapeake Bay Program Office, and the broader Partnership. The suggestions outlined below are not consensus-based recommendations from the BMPVAHAT membership, but rather, suggestions to the WQGIT and the CBP from the leadership team.

The [October 2022](#) meeting minutes outlines initial questions and comments from the BMPVAHAT membership on the suggestions below. [Appendix 7](#) documents a formalized poll from the membership on the degree to which they support the following suggestions and any additional feedback they gave.

Suggestions From the BMPVAHAT Leadership Team

1) *Managing Verification Issues in the Future:*

- A) Disband the BMP Verification Ad-Hoc Action Team.
- B) Per the [Basinwide Framework](#), responsibilities for addressing verification issues identified to the BMPVAHAT through the Management Board Charge are assigned to the following groups:
 - **Alternative Verification Methods** that build on or deviate from the guidance in Appendix B should be managed in the appropriate source sector workgroup that developed the guidance originally. (Pg. 11)
 - **Reevaluating Assigned Credit Durations** should also be tasked to the appropriate source sector workgroup that originally assigned the value. (pg. 12)
 - **An effort to reevaluate the concept of credit duration** (“all-or-nothing” approach) should be tasked to the Watershed Technical Workgroup (WTWG), as the WTWG developed guidance to ensure the Bay Program’s National Environmental Information Exchange Network (NEIEN)-based BMP reporting system specifically addresses the issue of practice life span. (This refers to credit duration.) (pg. 12)

2) *On the 1619 Data Sharing Issue:*

- The Basinwide Framework identified “Ensuring full access to federal cost-shared agricultural conservation practice data” as one of 12 key components of the Chesapeake Bay Basinwide BMP Verification Framework, which relied heavily on the jurisdiction’s ability to obtain a 1619 data sharing agreement but was never fully realized.
- In addition, the BMPVAHAT Coordinator met with WQGIT leadership and contributed to the meeting between the EPA Region 3 Acting Regional Administrator and USDA-NRCS State Conservationist. The outcomes of both these meetings were to wait until the NRCS pilots in Virginia and Pennsylvania were complete to begin exploring options for moving past the 1619 agreement issue. As of October 2022, these pilots are complete, but the results have not yet been finalized.
- Suggestions to move forward:
 - A) Discontinue the requirement to verify multi-year federally funded agricultural conservation practices (that are not implemented through a state cost-share

program) until the element of the verification framework document is fully realized.

- B) In May 2022, the USDA [announced a task force](#), in partnership with the EPA, to better quantify the voluntary conservation efforts of farmers in the Bay Watershed. Leon Tillman, NRCS, introduced this task force through a brief update at the September 2022 AgWG meeting. **The Bay Partnership (via the WQGIT) should follow this group closely and receive updates at the same frequency the AgWG is being updated.**
- C) The CBP Partnership via the WQGIT and MB should request that the Chair of the PSC, the Region 3 Regional Administrator, to open communication once again with NRCS to discuss solutions to the data sharing issue now that the VA and PA verification pilot projects are complete.
- D) The AgWG should be briefed on the outcomes of the PA and VA pilots and discuss if these outcomes met the expectations of the state agencies and assisted them in overcoming the issue of the 1619 agreements. The WQGIT should be briefed on the discussion at the AgWG and the NRCS pilot projects that were completed in 2022.

3) *On addressing the jurisdictions concerns on the capacity (or workforce) to perform on-the-ground verification:*

- Without proper understanding of the flow of resources to jurisdictions from the Bay Program or the “true cost” of the verification program, it is difficult to 1) identify the resources needed to complete verification and 2) determine if the jurisdictions are currently operating with inadequate resources.
- Some recommendations:
 - A) Due to the issue above, the leadership suggests that **a cost-benefit analysis is performed on the CBP’s verification program** to track the investment, identify any drains on resources, determine what resources are really needed, and to define the return on investment the Bay Program is currently receiving through the Bay Verification Program.
 - B) In 2009, the National Academy of Science (NAS) performed an in-depth evaluation of the Bay Program partners’ existing practice accountability systems which was a key starting point for the verification program we know today. **An external review of the Bay Verification Program, conducted by NAS or another entity, should be performed** to ensure that the Verification Program has improved practice accounting and accountability overall since 2009. This would contribute to a clearly defined return on investment, as mentioned above. This effort would assist the Program in prioritizing needs for post-2025.
 - C) Should the main body of the framework at any point be reevaluated, a committee with similar structure, membership, and chain of approval to the BMP Verification Committee should be reestablished under the WQGIT.
 - D) If the partnership does not support the recommendations above, a STAC Technical Review or Workshop could be a possible first step. Some potential guiding questions below:

- Our system for verifying BMPs – Does it work? Are we more accountable than we were before? What is our return on investment?
- Itemized BMP verification – Does this really give us a view of what is happening in agriculture?
- Visiting national and international accountability systems – Are there any other systems out there that we can study and compare to our own?

4) *On addressing BMP Performance:*

- Evaluation of BMP Performance* outcomes through (summarized [here](#)) the “systematic collection of data” to ensure the BMPs are working as expected, to adapt approaches to future installation and practice maintenance, and to help refine pollutant reduction efficiencies, is a key part of the verification life cycle defined in the Basinwide Framework. This “systematic collection of data” can only occur if the partnership receives all the data collected during practice installation and inspection(s). Despite BMP performance being the final step in the verification life cycle, the investments made into verification by the partnership have not yet allowed for the full exploration, collection, and application of BMP performance outcomes.

A) A STAC Workshop or Technical Review could be convened to begin this conversation. Some potential guiding questions below:

- BMP performance over time (Inspections) – What is the most efficient way to collect data on performance over time? Should statistical analyses be applied across the board? What assumptions are we willing to make?
- Uncertainty in verification – How do we account for uncertainty in our reporting?

**At the October 2022 BMPVAHAT meeting, a request was made to clarify the difference between longevity and performance. “BMP Performance” was selected by the partnership as the final step (step 3) of the BMP Verification Life Cycle. Longevity is defined as “life expectancy”. Performance refers to the execution of the practice and the ability of that practice to carry out (perform) the action it was designed to fulfill. While longevity could be defined as a practice’s ability to remain functional for a set period of time, this has not been clearly defined by the Bay Program Partnership in the way BMP Performance has been defined. Given CBP practice life span, design life span, and regulatory life span, a practice may have longevity of structure, but not performance. While a practice may be visually observed (its structure is present on the landscape), an inspection has to occur to determine if the practice is functioning or performing as expected.*

5) *On continuing discussions on credit durations:*

- A) The RI-10 Forest Buffer Practice should be included in the Recommendation from the FWG as the Forestry Workgroup considers this practice to be a Riparian Forest buffer.
- B) The Forestry Workgroup was responsible for completing an expert panel on riparian areas, which included grass buffers. Grass buffers are an agricultural practice. The FWG feels that a new expert panel, focused on grass buffers, should be convened. Expert panels are responsible for assigning credit durations as part of their process. The FWG

originally assigned a credit duration of 10 years to grass buffers. This should be done under the AgWG if determined to be a priority from the partnership.

6) *To improve documentation of CBP activities surrounding verification:*

- A) Amend this report as an appendix to the Basinwide Verification Framework.

Appendix 1. Links to Meeting Minutes, Summary of Actions, and Record of Decisions

See [Section IV](#) for a complete summary of each meeting.

2020 (First Meeting of the Action Team in August 2020):

- [August 7th, 2020](#)
- [September 8th, 2020](#)
- [October 8th, 2020](#)
- [November 12, 2020](#)
- [December 11, 2020](#)

2021:

- [January 28th, 2021](#)
- [February 12th, 2021](#)
- [March 12th, 2021](#)
- [April 9th, 2021](#)
- [May 14th, 2021](#)
- [June 11, 2021](#)
- [July 9th, 2021](#)
- [August 13th, 2021](#)
- [September 10th, 2021](#)
- [October 8th, 2021](#)
- [November 12th, 2021](#)
- [December 10th, 2021](#)

2021 (Final Meeting September 30th, 2022)

- [January 14th, 2022](#)
- [February 11th, 2022](#)
- [March 11th, 2022](#)
- [September 30th, 2022](#)

Appendix 2. Verification Program Complications and Solutions Identified by Jurisdictions

State	Complication	What challenge has this introduced?	Solution	Did the solution reach the intended result?	What work still needs to be done?
DE	Historic BMP Data Cleanup for ALL BMPS	For the Phase 6 historic data cleanup, Delaware was instructed to shift the implementation years of the BMPs which has caused BMPs to fall out faster due to credit duration expiration and an inspection date not being reported. DE current BMP implementation years are not truly reflective of on the ground practices.	Hire a contractor to track down original datasets prior to the Phase 6 model calibration and report the original implementation dates.	TBD - Contractor is working with DNREC through Dec. 2021	Resubmit all of Delaware's previous BMP data to reflect the true implementation year.
DE	Fatal Error of Original Database to House Inspection Information	Original database did not allow for inputting inspection records. Database was updated with the intent to enable inspection record inputs, but the updates led to fatal technical database errors. Unique BMP identifiers were unknowingly changed every time data was entered, so the link to the original dataset has been lost. This prevents the correct inspection information from being entered into the database.	New database developed in 2019, intention is to restore original BMP identifiers.	TBD. New database only contains 2019 and 2020 practices. Contractor attempting to restore original BMP unique identifiers now.	By December 2021, DE hopes to first input the original input records then input the inspection records for historic BMPs.

State	Complication	What challenge has this introduced?	Solution	Did the solution reach the intended result?	What work still needs to be done?
DE	Decision to Prioritize inspections vs new BMP implementation	Three Soil Conservation Districts inundated with Inspection and Implementation expectations. Staff are not able to keep up with the number of inspections that need to happen. The number of staff that have access to the locational data are very limited because of the 1619 Agreement.	Hire Internally or Contractually to inspect.	No. DE cannot hire internally or contractually because the staff will not have access to original BMP data.	No known resolution. More staff need access to the locational data.
DE	1619 Agreement	BMP inspectors do not have locational data on BMPs they need to inspect. Verification Programs were designed on the idea that all states would have access to raw federal data. Without locational data, BMPs are not getting inspected.	No known solution other than allowing partners to have raw data access.	No, the state office does not have the capacity to perform inspections.	
PA	Capacity/Workforce to Complete Inspections		Statistical Sub-Sampling Tetra Tech White Paper		
PA	Capacity/Workforce to Complete Inspections		Whole Farm Inspections through Ag E&S Plans		
PA	1619 Agreement	Not having the location of NRCS BMPs and therefore not being able to perform inspections on them. PA relies heavily on NRCS Practice Implementation as they do not have an Ag Cost-Share Program (there is a tax-credit program,			

State	Complication	What challenge has this introduced?	Solution	Did the solution reach the intended result?	What work still needs to be done?
		REAP). Small farms are difficult to reach.			
PA	1619 Agreement	Not having the location of NRCS BMPs and therefore not being able to perform inspections on them. PA relies heavily on NRCS Practice Implementation as they do not have an Ag Cost-Share Program (there is a tax-credit program, REAP). Small farms are difficult to reach.	Conversations with state NRCS office.		
PA	1619 Agreement	Not having the location of NRCS BMPs and therefore not being able to perform inspections on them. PA relies heavily on NRCS Practice Implementation as they do not have an Ag Cost-Share Program (there is a tax-credit program, REAP).	PennState Producer Survey, which includes a voluntary survey and sample onsite verification of at least 10% of respondents in each county.	Depends. The PSU producer survey has been completed in four southcentral counties. The original survey was completed for the entire Bay watershed of Pennsylvania. The data is only as good as what is available.	On-going project. Currently only complete for four southcentral counties.
PA	1619 Agreement	Not having the location of NRCS BMPs and therefore not being able to perform inspections on them. PA relies heavily on NRCS Practice Implementation as they do not have an Ag Cost-Share Program (there is a tax-credit program, REAP). Small farms are difficult to reach.	PADEP/NRCS Pilot Project in the Potomac watershed. Developing an inventory through aerial imagery using NRCS point locations. NRCS also conducted the search.	Partially, there were data transfer limitations.	

State	Complication	What challenge has this introduced?	Solution	Did the solution reach the intended result?	What work still needs to be done?
VA	1619 Agreement	Not having the location of NRCS BMPs and therefore not being able to perform inspections on them.	Pilot Ag MOU between DNR and NRCS in one VA district. After the contract duration expires, NRCS will provide the contact information to the farms. Not the practices on the farm, only the contact information.	TBD. Privacy issues. Farmer's have the option to refuse DNR from inspecting their land. This pilot would need to spread throughout VA.	This project only applies to one district in the state and may not be renewed after it is complete.
VA	1619 Agreement and Practice Implementation		VA Cost-Share Program		
VA	Capacity/Workforce to Complete Inspections (Specifically on State Funded Practices)		Random Sampling Approach with Failure Rates Applied Across Practices.	Partially, there is concern with the loss of practices that may be observed from applying a large failure rate across all reported practices.	
MD	Workforce to complete verification inspections.		Utilize resources to Establish the BMP Verification Task Force.	Yes.	
MD	Workforce to complete verification inspections.	During the pandemic, the MD workforce was unable to access farms in person.	USGS Cover Crop Verification Using Remote Sensing	Yes. This project enabled MD to replace the windshield survey with remote sensing.	Outside of the field inspection, more work needs to be done to complete verification on cover crops; but this project lessened the burden on the workforce needed for in person inspections.

State	Complication	What challenge has this introduced?	Solution	Did the solution reach the intended result?	What work still needs to be done?
MD	1619 Agreement	Not having the location of NRCS BMPs and therefore not being able to perform inspections on them.	MD Cost-Share Program		
MD	Locating NRCS Practices	Not having the location of NRCS BMPs and therefore not being able to perform inspections on them.	1619 Agreement with NRCS and FSA		
	Not having access to point location information				
			Prioritizing practices and locations through analyzing practice information gathered during inspections.		
WV	1619 Agreement		WV Cost-Share Program		
WV	1619 Agreement		Partnership with FSA to report the conservation practices that apply to buffers.		
WV	Commercial Poultry Operations	Difficulty accounting for practices implemented within commercial poultry operations.	VT Research Project. The project field staff will be used to verify AWMS and Mortality Management Systems for poultry operations. Aggregated data will be submitted to	TBD. The project is in the planning phase.	

State	Complication	What challenge has this introduced?	Solution	Did the solution reach the intended result?	What work still needs to be done?
			the WVDA for use in progress reporting. All commercial poultry operations will be visited in the state to create a baseline for the future. A historic timeline of implementation will be established.		
NY	Capacity/Workforce to Complete Inspections		Statistical Sub-Sampling approach developed in partnership with Tetra Tech.		
NY	1619 Agreements	Not having the location of NRCS Structural BMPs and therefore not being able to perform inspections on them.	Soil and Water Conservation Districts, along with the USC, conduct whole farm inspections.	Yes.	
DC					
DoD	Identifying BMPs across facility locations	Inability to report BMPs when the agency was unsure of which kinds of practices were located throughout DoD facilities in the watershed.	Worked with Brown and Caldwell to develop a database for tracking and reporting progress.	Yes.	The USACE is currently under the DoD umbrella due to the land use. This may need to be addressed in the future.
DoD	Inability to Track BMPs as Practices on DoD Land.	DoD was not getting credit for the BMPs implemented on its locations throughout the watershed. DoD BMPs were grouped under the states DoD	Worked with Brown and Caldwell to develop a database for tracking and reporting	Yes.	Work still needs to be done within the FFWG to allocate BMPs to federal facilities.

State	Complication	What challenge has this introduced?	Solution	Did the solution reach the intended result?	What work still needs to be done?
		has facilities in even though DoD funded the projects and has TMDL expectations as a federal agency.	progress. Developed alternative tracking and reporting methods with the federal facilities workgroup.		

Appendix 3. Barnyard Runoff Control and Loafing Lot Management Credit Duration Proposal Concerns

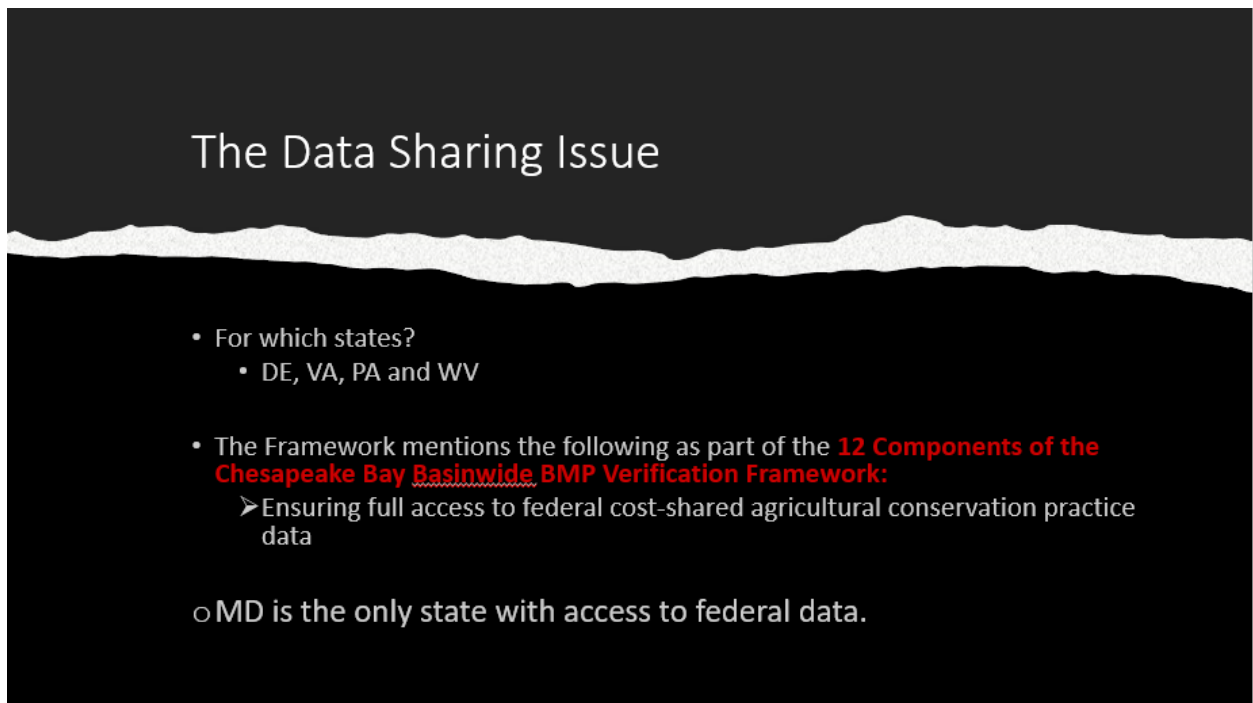
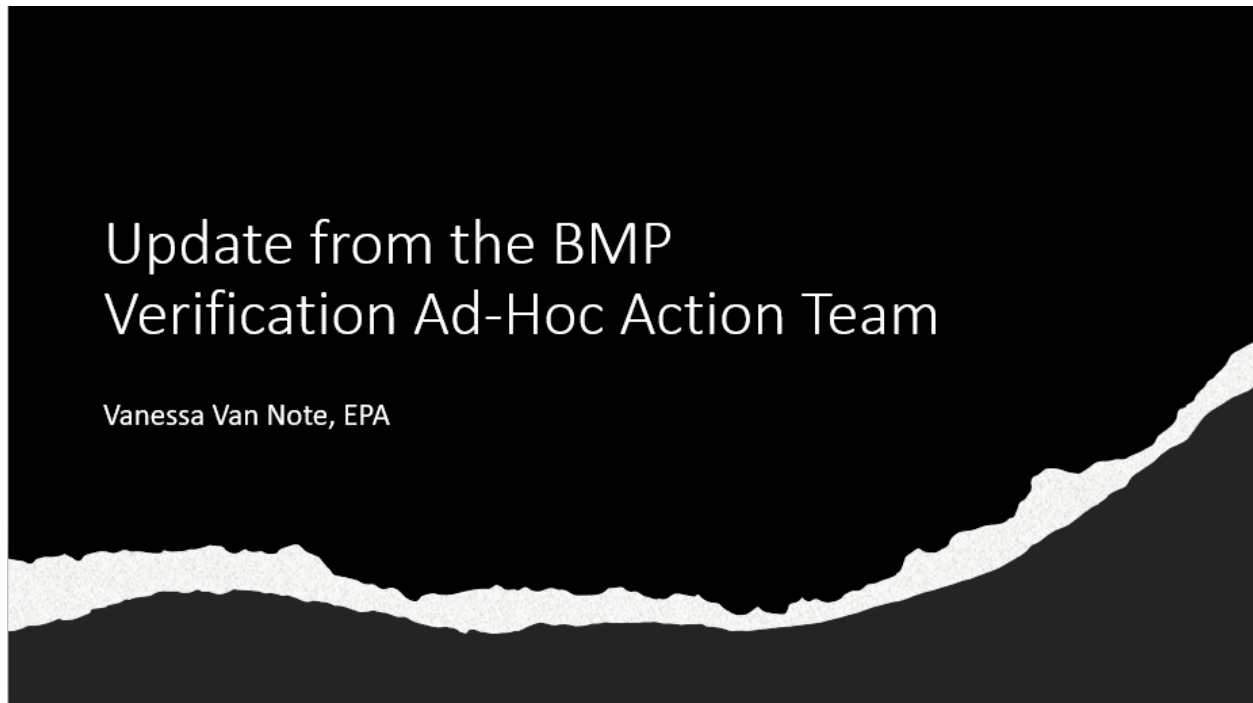
BRC & LLM Credit Duration Concerns and Next Steps

Number of BMPVAHAT members that raised the concern	Concern	Next Steps: Addressing the Concern	Notes
###+	Lack of consistent data	<p>Request for consistent, comparable data across the entire watershed:</p> <ul style="list-style-type: none"> - What universe of already built practices was surveyed, how many passed and how many failed. - Percent failure/success for only the BMPs that were inspected 15 years after the initial installation or previous inspection. - Suggestion: data could be broken down by individual practices, rather than lumping together varied practices with varied lifespans. 	<ul style="list-style-type: none"> - PA data: need more context, analysis, and explanation, question of how often a farm might be visited, need a number or percentage of practices that are in failure, need to differentiate which BMPs have failed or are beyond their useful life versus new BMPs needed - MD data: need further information
### I	Confusion between BMP lifespan and credit duration	<p>Clarifications between the concepts of lifespan and credit duration:</p> <ul style="list-style-type: none"> - How they are different and why that distinction matters in this context. 	
IIII	Too many BMPs under the categories of BRC and LLM	<p>Request for a breakdown of the practices within BRC & LLM. Explore all of the different practices that roll up into these two categories:</p> <ul style="list-style-type: none"> - Look into having different credit durations for each of the sub BMPs rather than a single credit duration for everything under Barnyard Runoff Control. 	
I	Lack of input from WGs that developed the original credit duration	<p>Increase the role of the WG that developed the original credit duration:</p> <ul style="list-style-type: none"> - Bring the WGs into the discussion prior 	

		to drafting a recommendation.	
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Appendix 4. BMPVAHAT Presentation to Bay Managers Slides

Return to meeting table [here](#).



Which Practices are the Problem?

- **Do not have issues verifying annual practices** as these are provided in the aggregated data set annually and do not require outyear verification.
 - States can report what is provided by NRCS annually.
- **Only Multi-Year Agricultural Practices (Not Urban).**
- **For WV**, not able to reverify the following:
 - Prescribed Grazing
 - Roof Runoff Structure
 - Streambank and Shoreline Protection
 - Tree/Shrub Establishment
 - Watering Facility
 - Heavy Use Area Protection
 - Waste Storage Facility (Poultry, Livestock) (WV can locate some facilities with the help of VA Tech)
 - CP22 Riparian Buffers (WV has an agreement with FSA to help verify CP22)
 - *What about AWMS?* – WV has a good relationship with producers and reports these separately from the aggregate data.
- **For DE**, Riparian Forest Buffers and Grass Buffers are the hardest hit practices due to verification.
- **For VA**, Forest Buffers are high on the list due to the 10-year CREP anniversary.
- **For PA**, structural Ag practices that are funded by NRCS with no state money allocated.
 - PA has attempted to overcome this by having landowners sign a records release when conservation district staff verify conservation plans.

How do we overcome the data sharing issue?

• How do we support states and overcome this data sharing issue?

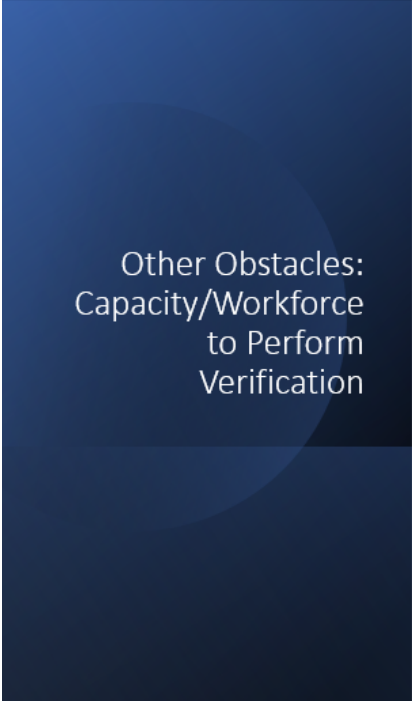
- *What are realistic asks of the NRCS?*

Areas to explore to maximize conservation:

- Practice codes are bundled: For example, cannot distinguish between interior fencing and stream exclusion fencing as they share the same practice code, 382.
- NRCS records the main practice, while the Bay Program records individual supporting practices.
- CTA Practice Reporting

Data Sharing Issue still outstanding. But enabling access will not fix all the verification program issues.

- **Should states be responsible for verifying practices that are only funded through the NRCS?**



Other Obstacles:
Capacity/Workforce
to Perform
Verification

- **In DE, VA and PA:** Not enough resources to perform implementation and verification to the extent the WIPs require.
- **How have states tried to overcome this obstacle?**
 - Producer Surveys
 - Statistical Sub-Sampling (Random Sampling of Practices and a Failure Rate approach)
 - Remote Sensing
- ***Next Steps for the Group:*** Trying to determine which states have implemented the approaches outlined above successfully.
- **Question:** How do we respond to the “not enough resources” statements if we do not have a concrete amount of what verification programs cost?

Appendix 5. Partial Credit “Hold” Votes Meeting Minutes

Return to meeting table [here](#).

Meeting slides below.

BMP Verification Ad-Hoc Action Team

Partial Credit “HOLD” Votes Meeting Minutes

March 22nd, 2022

1:00 PM – 2:00 PM

Attendees

Kate Bresaw, PA DEP
Ted Tessler, PA DEP
Lisa Beatty, PA DEP
James Martin, VA DCR - *absent*
Adrienne Kotula, CBC - *absent*
Suzanne Trevena, EPA
Joe Wood, CBF
Loretta Collins, AgWG - *absent*
Rebecca Hanmer, FWG - *absent*
Jackie Pickford, CRC (Staffer)
Vanessa Van Note, EPA (Coordinator)
Elliott Kellner (Chair)

Meeting Materials

- Feb meeting minutes (discussion and vote on partial credit):
https://www.chesapeakebay.net/channel_files/44324/bmpvahat_feb_minutes_draft_v3.pdf
- Draft Recommendation:
https://www.chesapeakebay.net/channel_files/44324/recommendation_for_partial_credit_feb_ruary_2022.pdf
- Partial Credit Voting Results spreadsheet:
https://www.chesapeakebay.net/channel_files/44324/bmpvahat_partial_credit_vote_-_sheet1.pdf
- Points to consider for Recommendation on Partial Credit PPT:
https://www.chesapeakebay.net/channel_files/44324/points_to_consider_for_the_recommendation_on_partial.pdf
- Consensus Continuum:
https://www.chesapeakebay.net/channel_files/44324/consensus_continuum.png

NOTES

Vanessa reviewed the rationale provided by each member that voted “hold” and identified key issues of disagreement: (a) sunset period; (b) collecting data for practices beyond credit duration; (c) solution to federal data sharing issue; and (d) all or nothing approach” for BMPs that do not fall under federal sharing. Each member was then given the opportunity to propose modifications on key issues and/or expand on their position and the flexibility that may or may not exist with it.

Sunset period

Check-ins?

Joe: I feel like this is just a band-aid solution. The obvious solution is to fix the 1619 agreements so that we have information sharing.

Elliott: I think some people argue that they aren’t mutually exclusive. They could lobby Congress to change the 1619 agreements while we implemented partial credit in the meantime.

Joe: We agree on the problem, that our progress evaluation data is what’s actually happening on the ground, but I haven’t been persuaded that the partial credit solution puts us in that much of a better position than we are right now. It seems like change for the sake of change.

Vanessa: How do we move forward with the solution to fix the 1619 agreements? Letter to MB or PSC?

Suzanne: Consult with GIT6. Maybe a letter or presentation about our understanding of the problem. Then we need consensus endorsement from the WQGIT and present it to the MB, who will hopefully move it forward to the PSC.

Vanessa: Okay, for the federal data sharing issue, I’ll start there and get back to you guys.

Elliott: I think there was already a consensus about the issue which was the charge to this group. Our charge as a group was to develop a band-aid solution.

Vanessa: I agree. The partnership knows it’s an issue, but the question is how do we get the partnership to realize the severity of the issue enough to take it seriously and do something about it.

Kate: There is a large misconception about the ease of changing 1619 policy. Don’t think there has been a serious consideration of changing our own program policy.

Vanessa: I will compile the request, summary of our decisions and rationale etc., send to this group for feedback, and send that to GIT6. Maybe we present that to the larger group at our April meeting.

Joe - doesn’t seem too enthusiastic about check-ins.

Suzanne - question of what a check-in looks like. Partnership vote either to maintain it or reassess if there have been changes or projects to reassess these BMPs.

Vanessa: Is our default reverting back to no partial credit and consensus to

Lisa: We would need a vote to stop partial credit. Have no sunset date but open to talking about how it would be reevaluated. Would it be during the period

48:20

Suzanne: well wouldn't that just

Lisa: well they would only be for the BMPs that we don't know where they are. This is a Bay Program policy solution to the 1619 issue.

Elliott: I have heard the proposal that the ultimate solution is to not require verification for federally funded ag practices. One of the things that Vanessa and I have been trying to underline is that we don't have a problem with all of our BMPs, its only federally funded ag BMPs that we don't have data on.

Joe: personally having a good understanding of where practices are is important. Verification is a central tenant of the midpoint assessment (?).

Elliott: the consequences of a dysfunctional verification program is that it falls unproportionately on the jurisdictions, more so than the rest of the partnership.

Joe: I think there are nuances to this problem that are not well understood, and need to be understood to develop a solution we can agree on.

Lisa: NRCS update

Lisa: we're open to the discussion about not having a sunset. We just have to know what that might look like.

Ted Tessler: See this as a policy issue. We can choose not to apply credit duration to federal BMPs and no sunset on the policy until the 1619 problem is solved. The band aid stays on until the wound is healed. We have WIP goals well above the existing federal support, but we need this heavy hitter to make and maintain progress. Would be nice to get out of our own way on this.

Meeting Slides



Voting Member (Signatory)	Rationale
PA	<ul style="list-style-type: none"> PA DEP CBO requests that PC stays in perpetuity (no sunset period) and will "HOLD" if there is any BMP sunset period. PA DEP is requesting more discussions on the BMP "sunset" in regards to partial credit duration. Seeking longer term solution. We need locational data and, following the locational data, we need financial support to send staff out to verify these BMPs. PC is a policy decision that should not replace data collected from the field, or otherwise, for specific BMP credit duration and lifespan.
VA	This is a step in the right direction, but it is an incomplete step. Concerned that approving this decision would be presumed to have solved the two concerns brought up by this group: (1) the 1619 agreements, and (2) the all or nothing approach to credit duration that is only addressed for federal practices
CBC	Stand with VA and PA. Believes this proposal is close to having a solution, but requests that we figure out more of the path forward in terms of in-between 2025 and P7 and how we will deal with things during that time. Requests an overview of potential steps to take to address the issues at hand after PC sunsets.
EPA	<ul style="list-style-type: none"> Requests a BMP performance standard instead of arbitrary percentage (looking at state data to see how many fail and when, some sort of assessment of the practices that would be a better justification of PC). Would like to see what comes out of the pilot projects, if we could find longer term solutions to at least address some of these BMPs. Need scientific validity to this solution. Maybe some compromise of check-in points for sunset period to see if things have changed and if PC an appropriate mechanism.

Voting Member (At-Large)	Rationale
CBF	<ul style="list-style-type: none"> If PC existed in perpetuity, CBF would vote "STOP", but can live with this as a three or four year solution. Reason CBF is a hold is because this group's voice will be diluted if we move forward with this (i.e. people in charge are less likely to take action to address the larger issue if we put a bandaid solution like PC in place). <p>Would be more powerful to send a message that says we looked into this and could not find a solution.</p>

Voting Member (WKGPs)	Rationale
AgWG	AgWG survey results were all across the board. Most of the same arguments brought up here, but that was before changes, so we might be able to move to a stand aside with an updated proposal.
FWG	<p>Agree with comments from AgWG, CBC and EPA. Requests</p> <p>(1) Proposal for moving ahead on 1619 issue. Despite statutory requirement in 1619, the policy interpretation could be revisited in the Dept of Ag.</p> <p>(2) A pathway for better data gathering for practices and whether they last beyond credit duration</p>

Key Reasons for “Hold”

The Sunset Period

- One member does not want one, another will not vote to endorse without one, and another suggested check-ins.

Collecting Data for Practices beyond their credit duration

- Need to define the kind of data needed to make a decision, which states would be willing to be involved
- Would the data collected inform the value assigned to PC?
- Timeline: What can we do prior to the CAST-23 deadline?

Solution to the Federal Data Sharing Issue

- Writing a letter to the MB? already have gone to EPA and the WQGIT leadership.
- Would our voice be diluted by approving PC?

“All or nothing approach” for BMPs that do not fall under federal data-sharing

Appendix 6. Pennsylvania's Barnyard Runoff Control and Loafing Lot Management Credit Durations Presentation

Return to meeting table [here](#).

Participants

Jackie Pickford

Vanessa Van Note, EPA/Coordinator

Jason Kepler, Chair

Jeff Sweeney, CBPO

Kate Bresaw, PA

Jill Whitcomb, PA

Lisa Beatty, PA

Jill Whitcomb explained that NEIEN is a compilation of multiple data sources that they can't necessarily pull detailed information from. Instead, PA used the PracticeKeeper System to find the data that was requested of them. She described this process and how they obtained the information provided as a rationale to extend the credit duration.

Vanessa Van Note: I want to make sure I'm understanding this correctly - the 1802 practices are a combination of the BRC practices that are older than 10 years and younger than 10 years?

Kate Bresaw: Yes, that's a typo on the heading on that slide that I missed when I reviewed it. It should say "Total BRC Inspected" instead of "Total BRC Inspected that are Older than 10 Year Credit Duration".

Vanessa Van Note: From the note that Kate made earlier, anything that was brought back into compliance would be included in that younger than 10 years category, so when we're saying amount in compliance, are we saying that's not necessarily at the time of inspection? I understand PA is going to retain their practices and bring them back into compliance, but when the group has talked about failure rate/assessments, we're talking about when it fails, what circumstances it will fail after, etc. I want to make sure I'm mentioning: at the time of inspection, these number of practices were not in compliance but were brought back into compliance. That's still really useful data to know.

Kate Bresaw: All of the practices we are reporting for this discussion are in compliance at the time of the inspection. But some of them are newly implemented, they're either zero years old or older at this point.

Vanessa Van Note: So you're including new implementation inspections as well?

Kate Bresaw: Yes.

Jill Whitcomb: It's a challenge for us to report our failure rate because we don't have a system that specifically tracks that.

Vanessa Van Note: When I had first requested info, I had no idea what data states had available to them, so it's good to see this information. I'm trying to create a bridge between the different data I'm receiving from all of the states.

Jill Whitcomb: I think it might be helpful to have a change in scope of what the states need to provide. The BMP Ad-Hoc was not provided resources to do their own statistical sampling and analysis and yet, that is being requested from us. If that's the case, I think it needs to go up to the MB or WQGIT for revaluation of what is actually being expected of us. States have provided information based on the data that is available to them, and of the 3 states, all 3 states showed that there is a rationale for support to extend the credit duration for these two practices. So if after the states provide that data, people in the group say it's not good enough, I'm not really sure what the next steps are with zero funding assigned to this.

Jeffrey Sweeney: The onus would be on you or anyone who is asking for the extension to convince them why this should be because we already have a decision at 10 years. The onus is always on the person recommending the change.

Jill Whitcomb: I had thought updates to the processes and procedures were made on a regular basis through the Bay Program. I think it's just as important for those that are saying no, that we should remain at the status quo, to justify using data to support their thought process, just as the jurisdictions are doing.

Jeffrey Sweeney: Actually, no.

Ted Tessler: Well the assignment of the group is to investigate this credit duration. Because there was insufficient basis to the status quo.

Jeffrey Sweeney: Right, so those would be the arguments that you would use in order to recommend that change amongst the Members. But others feel that there was a lot that went into these credit durations and think that it is sufficient to keep them. At the time, it was in-line with how long these things last before they fail, and you want a credit duration to be a shorter time frame than that so that when it would be inspected it would avoid a failure. It really doesn't have that much to do with how these things actually last on the ground. Just to argue the other side, I don't actually have a stake in this.

Vanessa Van Note: I spoke with Carin and Dave and they said the 10 year credit duration is a consensus decision so it needs to be changed by consensus. Dave is coming to speak to the group on Friday so people can ask questions about the process. But outside of consensus, we could keep working on this to find a better solution and maybe address your concerns, Jill, about what resources we have available to us and going to the WQGIT and/or MB.

Jill Whitcomb: If consensus cannot be reached then it goes to the WQGIT right?

Vanessa Van Note: Yes, right. I'm still waiting on the answer from Carin and Dave about the path to take if we don't reach consensus on Friday.

Jill Whitcomb: Okay. I'm personally frustrated by the fact that these members don't seem to have a data based rationale for why they are voting "No." whereas in other groups, when someone votes "no, hold, or stop" they are asked to provide a rationale as to why.

Jeffrey Sweeney: I think it's a matter of getting together with those who also want to extend this credit duration and stating your case.

Jill Whitcomb: We haven't been provided with the names/affiliations of votes yet.

Jeffrey Sweeney: Right, you'll know on Friday and that's when you can start your lobby and the idea is to convince them. If, after a second vote, then there's still anyone who says hold or stop, then it goes up to the WQGIT.

Vanessa Van Note: That's the idea of the roll call vote on Friday, to get everyone out in the open. From there, we can continue to work on this to maybe find a solution that would get voting members more comfortable with extending these credit durations, but I'm not sure what that will look like yet.

Jason Keppler: I think we should try our best to come to a decision within this group and not rely on it getting pushed up to the WQGIT or MB because in my experience it doesn't always end well. If we can't come to a consensus on Friday, I would encourage Jill and others to work with those who have a dissenting opinion and try to ease or address their concerns.

Jill Whitcomb: I agree with you Jason, I am just concerned that no matter how much time and effort is expended, there's still going to be dissent. If there are things we can do to change people's opinions then yes, we will work to do that, but if we're asked to do things outside of our capabilities, then I think that's a valid reason for it to get elevated.

Jason Keppler: Right, and that's on us as the leadership as well to explain the importance of these decisions for the positions that these folks may have and how it may impact the partnership as a whole. And find out how firm they are in their position and whether or not they would be willing to work through the process and not just be another roadblock.

Jill Whitcomb: So, just to be clear, this particular item on the do list for the BMP Ad-Hoc will not go to the AgWG, but it would go to the WQGIT?

Vanessa Van Note: Correct. For an official vote, the intention was to drop the recommendation and receive input from source sector work groups that are applicable, in this case the AgWG. But we're at the point where we can't even draft a recommendation to provide to these WGs for them to comment on because there was still that concern of voting members who have voting power on the BMPVAHAT if they feel like they don't understand how their workgroup feels about it, they feel like they can't vote for their work group to endorse or support something.

Jeffrey Sweeney: A word of advice - think about compromises, too, and reach out to them and ask what it would take for them to change their vote and start from there. But if they're going to say I'm never going to change, then I agree with you Jill that it would just be worth elevating it at that point.

Jason Keppler: Yeah, I hate to say it but sometimes it starts to become more of a political decision than a scientifically based one.

Jill Whitcomb: Can we have an opportunity on Friday to review this?

Vanessa Van Note: Absolutely, I'll add it to the agenda.

Jill Whitcomb: Will you be discussing NEIN?

Vanessa Van Note: I still need to talk with Jason and Elliott to decide if I'm going to. I wanted to explain what NEIEN is and what we're tracking in NEIEN vs what the states have in their own databases. My issue is that I can't see the inspection dates in PracticeKeeper and I'm trying to understand where those inspection are fitting into the inspections that are reported to the Bay Program so that's something I'd like to keep working with you and Kate to make sure I'm understanding if that's all being accounted for in NEIN or if they're being accounted for in different ways. I can update you after I talk with them as to what we want to discuss in the Friday meeting.

Kate Bresaw: Okay, yes, let's talk more about it.

Jill Whitcomb: This is what we pulled out of PracticeKeeper (pointing to Total BRC Inspected Chart - 1802 practices), and that could include NRCS practices, but not the total amount of NRCS practices, it's only the ones that the conservation districts touch. It gets really complicated but we have to remove it so that we don't have potential for duplicate reporting.

Vanessa Van Note: Okay, got it, thanks.

Appendix 7. BMPVAHAT Membership Feedback on Final Report and Suggestions from Leadership Team

Following the completion of this report and the suggestions developed by the BMPVAHAT leadership team, this document was sent to the BMPVAHAT membership for a month-long review period. Members were encouraged to fill out a survey to indicate their level of support for each of the suggestions outlined in [Section VI](#) and offer any additional feedback regarding next steps. The results of the survey are outlined below.

This section is a placeholder and will be updated after the BMPVAHAT membership gives feedback on the suggestions developed by the leadership team.

Appendix 8. Acronym List

AgWG – Agricultural Workgroup

BMPVAHAT – Best Management Practice Verification Ad-Hoc Action Team

BRC – Barnyard Runoff Control

CAC – Citizens Advisory

CBC – Chesapeake Bay Commission

CBF – Chesapeake Bay Foundation

CBP – Chesapeake Bay Program

CBPO – Chesapeake Bay Program Office

EPA – Environmental Protection Agency

LLM – Loafing Lot Management

LUWG – Land Use Workgroup

MB – Management Board

NRCS – Natural Resources Conservation Service (USDA)

RFB – Riparian Forest Buffer

STAC – Science and Technical Advisory Committee

USDA – United States Department of Agriculture

USFS – United State Forest Service

USGS – United State Geological Survey

USWG – Urban Stormwater Workgroup

WQGIT – Water Quality Goal Implementation Team

WTWG – Watershed Technical Workgroup

WWG – Wetlands Workgroup

WWWG – Wastewater Workgroup