Appendix O. Verification Guidance Development and Review Process

The six technical workgroups—Agriculture, Forestry, Urban Stormwater, Wastewater Treatment, Wetlands, and Streams—developed their source sector and habitat specific BMP verification guidance over the course of their normal schedules of workgroup conference calls and face-to-face meetings. Each set of verification guidance underwent numerous reviews as drafts and revisions were distributed among workgroup members and interested parties, discussed by the workgroup, and direction from the collective workgroup membership was given on further changes to be made. Although each set of guidance was developed independently by the six workgroups, the workgroups were all using the same set of five BMP verification principles (see Appendix A) to guide the verification guidance development process. In addition, all six workgroups collectively presented incrementally updated draft versions of their respective protocols to the BMP Verification Committee and then the BMP Verification Review Panel, respectively, over the course of spring 2012 through summer 2013, receiving detailed feedback and direction along the way.

After more than a year in development, the six technical workgroups provided the BMP Verification Committee with their recommended BMP verification protocols in early July 2013. These recommended verification protocols were incorporated into the July 15, 2013 draft of this document and distributed to members of the BMP Verification Review Panel and the BMP Verification Committee for their review over the course of the summer. The BMP Verification Review Panel developed the formal comments, responses, and recommendations during their August 28-29, 2013 meeting[1] and follow-up October 31, 2013[2] and November 1, 2013[3] conference calls, all of which were contained within the Panel's November 19, 2013 recommendations document[4]. The Panel's recommendations to the workgroups are provided in Appendix D. The six workgroups provided their revised verification guidance documents to the BMP Verification Committee in early February 2014 for incorporation into the revised draft version of this document which was then distributed to members of the BMP Verification Review Panel and the BMP Verification Committee for their review and comment at the Panel's April 1, 2014 meeting and the joint Committee/Panel meeting on April 2, 2014.

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[1] http://www.chesapeakebay.net/calendar/event/20832
[2] http://www.chesapeakebay.net/calendar/event/21023/
[3] http://www.chesapeakebay.net/calendar/event/21024/
[4] Chesapeake Bay Program Partnership BMP Verification Review Panel's Guidance and Recommendations to the Six Source Sector Workgroups, the CBP BMP Verification Committee, and the Seven Watershed Jurisdictions. Distributed November 19, 2013.
http://www.chesapeakebay.net/channel_files/21511/cbp_bmp_verif_review_panel_recommendations_11_19_2013.pdf

Table O-1. Summary of the BMP Verification Review Panel's recommendations to the six technical workgroups.

- Workgroups provide guidance, the jurisdictions develop protocols.
- Use the Urban Stormwater Workgroup's narrative as a model to follow.
- Use the Panel's Verification Program Design Matrix in the form of a checklist in developing the workgroup's guidance.
- Consider the Panel's 14-steps when developing the workgroup's verification guidance.
- Use the Panel's State Protocol Components Checklist as a checklist for ensuring the guidance provides each jurisdiction with the workgroup's best insights how to address.
- Consider the need for the jurisdictions to submit any additional documents for protocol approval beyond referencing the workgroup's guidance.
- Consider the Panel's comments on workgroup's previous draft guidance.
- Group practices and verification options together within the workgroup's guidance.
- Aim high: provide recommendations on "robust" levels of verification.
- Define how to verify and at what frequency.
- Address inspection frequency for functional equivalents.
- Provide guidance on intensity of verification choices.
- Confirm cross-walks between CBP BMPs and NRCS/State BMP practice design definitions/standards.
- Establish practice life spans and use within the workgroup's verification guidance.
- Enable adaptation in the jurisdictions' verification protocols with the use of emerging technologies in conducting the actual verification procedures.

Achieving Internal Consistency Across the Workgroups' Guidance
The BMP Verification Committee, with the direct assistance of the BMP Verification Review Panel, worked to ensure there was a common 'level of fairness' in the expectations expressed within each workgroup's set of verification guidance. Below are summaries of the specific steps taken to ensured a level of internal consistency across the workgroups' guidance.

Ensuring Equity Across Sectors/ Habitats
The BMP Verification Review Panel's set of 14 specific recommendations directed at all six technical workgroups (see Attachment B, Appendix D) provided a uniform charge to all six workgroups and established a common bar for each workgroup to strive for in their respective guidance documents. The Panel's call for use of the Urban Stormwater Workgroup's verification guidance narrative as a template for use by the other five workgroups ensured each set of guidance addressed a common suite of elements and was written in a form understandable by readers not as familiar with each source sector and habitat.

Application of the Panel's Verification Program Design Matrix
The BMP Verification Review Panel developed a *Chesapeake Bay Program BMP Verification Program Design Matrix* (see Section 3) which outlined three recommended program components

along with the underlying program elements of a jurisdiction's verification program. The Panel saw the workgroups using the matrix essentially as a checklist to ensure their guidance was addressing all the program elements the Panel envisioned within each jurisdiction's verification program.

Use of the Panel's 14 Verification Program Development Steps
The *Jurisdictional BMP Verification Program Development Decision Steps for Implementation* developed by the BMP Verification Review Panel (see Section 3) spells out the 14 steps for each Chesapeake Bay watershed jurisdiction to consider when developing their jurisdiction's BMP verification program. Under each step are a series of questions for consideration which will prompt decisions that may be needed to develop the jurisdiction's verification protocols. The Panel envisioned the workgroups using the 14 steps as prompts to ensure their respective guidance provided the jurisdictions with part of the information needed to answer the questions under each step.

State Verification Protocol Components Checklist
The *State Verification Protocol Components Checklist* (see Section 3) developed by the BMP Verification Review Panel was provided to the workgroup as a checklist to ensure their guidance was addressing all the components the Panel envisioned within each jurisdiction's verification protocols.

Practices Which Cross Source Sector/Habitat Boundaries
The workgroup chairs and coordinators worked collectively to clearly define which specific set of workgroup verification guidance applied to practices which could apply across two or more source sectors or habitats. In each of these cases, whether it is wetlands restoration or tree planting, each workgroup's verification guidance clearly spells out the appropriate guidance the jurisdictions should follow for those practices spanning multiple source sectors or habitats.

Verification of Management Plan-based Practices
There is a significant verification challenge posed in ensuring practices which take the form of management plans are implemented and operating correctly. At the request of the BMP Verification Committee, the Agriculture Workgroup convened an expert panel to develop specific verification guidance for how jurisdictions could verify management plan-based practices.

Types of BMP Implementation
There were generally found to be three types of BMPs being implemented which required verification:

- Voluntary or required BMPs implemented with cost share support;

- Required BMPs without cost share support; and

- Voluntary BMPs implemented without cost share support.

Each of the workgroups provided upfront definitions and groupings of their BMPs and addressed how they recommended the jurisdictions verify the resultant categories of BMPs within their

guidance. Taking this approach ensured a level of consistency within and across the workgroup's guidance documents.

Key Phases for Verification

There are essentially three phases for verification common across most of the sectors and habitats:

- BMP installation (year 1)

- Post-BMP implementation while under a contract (state or federal cost share program) or regulatory oversight (state/federal permit)

- Post-BMP implementation after the contract expires and/or regulatory oversight ends

Each workgroup addressed how it recommended verifying practices under these phases, generally building off of and, in some cases, enhancing existing regulatory and permitting inspection and maintenance programs.

Recognizing Diversity of Choices in Conducting Verification

The six technical workgroups provided the jurisdictions with guidance, as recommended by the BMP Verification Review Panel, not specific protocols. It's each jurisdiction's responsibility for developing verification protocols which best address their implementation programs, local communities, and circumstances. As recognized in each workgroup's verification guidance document, the jurisdictions have choices to make within and across the source sectors and habitats in terms of the exact nature of their verification protocols.

To effectively illustrate the diversity of choices, Dr. Tim Gieseke, BMP Verification Review Panel member from Ag Resource Strategies in New Ulm, Minnesota, developed the illustration in Figure O-1.

Figure O-1. Illustration of Diversity of Verification Approaches Tailored to Reflect Practices							
Sector	**Inspected**	**Frequency**	**Timing**	**Method**	**Inspector**	**Data Recorded**	**Scale**
Stormwater	All	Statistics	<1 year	Monitoring	Independent	Water quality data	Site
	Percentage	Targeting	1-3 yrs	Visual	Regulator	Meets Specs	Subwatershed
	Subsample	Law	3-5 yrs	Aerial	Non-Regulator	Visual functioning	County
	Targeted	Funding	>5 yrs	Phone Survey	Self	Location	State
Agriculture	All	Statistics	<1 year	Monitoring	Independent	Water quality data	Site
	Percentage	Targeting	1-3 yrs	Visual	Regulator	Meets Specs	Subwatershed

	Subsample	Law	3-5 yrs	Aerial	Non-Regulator	Visual functioning	County
	Targeted	Funding	>5 yrs	Phone Survey	Self	Location	State
Forestry	All	Statistics	<1 year	Monitoring	Independent	Water quality data	Site
	Percentage	Targeting	1-3 yrs	Visual	Regulator	Meets Specs	Subwatershed
	Subsample	Law	3-5 yrs	Aerial	Non-Regulator	Visual functioning	County
	Targeted	Funding	>5 yrs	Phone Survey	Self	Location	State

Figure O-1 illustrates the choices being made by the jurisdictions, following guidance from the workgroups, for specific practices within three representative source sectors—urban stormwater, agriculture, and forestry. Through application of the workgroups' guidance, choices can be made by the jurisdictions about how much of the practice population will be inspected, the underlying basis for the frequency on inspections, the timing for the inspections, the method of verification, who the inspector represents, the data reported, and the scale at which the data are reported out at.