

Project Overview and Outline prepared by Jeremy Hanson for WQGIT discussion and feedback, May 22, 2017

Project Title

Chesapeake Bay Program Quick Reference Guide for Best Management Practices (BMPs):
Nonpoint Source BMPs to Reduce Nitrogen, Phosphorus and Sediment Loads to the Chesapeake Bay and its Local Waters

Background and description

As of April 2017 the Chesapeake Bay Program (CBP) partnership has over 200 approved Best Management Practices (BMPs) available for application in the Phase 6 Chesapeake Bay Watershed Model (CBWM). Many BMPs are split for modeling specificity and can be understood categorically, e.g., cover crops. Even so, CBP partners have dozens of BMPs to consider in the development of their Phase III Watershed Implementation Plans (WIPs) and beyond.

Coordination, planning, and implementation by state, regional, and local partners is strengthened when all parties have a consistent understanding of CBP-approved BMPs that are eligible for nitrogen, phosphorus, and sediment reductions toward their forthcoming Phase III WIP planning targets. However, basic key information about these BMPs – while publicly available online – is scattered among lengthy reports, appendices, and dense spreadsheets.^{1, 2} This disparate information adds further confusion to already complex processes for Phase III WIP development, 2-year milestone development, and annual BMP reporting.

There are some examples of explanatory materials that are more accessible to a state/regional/local partner or layperson who wants a clearer sense of the basic elements of specific CBP-approved BMPs, e.g., Chesapeake Stormwater Network Fact Sheets.³ Unfortunately, this information is not available for all sectors and all BMPs, particularly BMPs reviewed and approved prior to 2012. Therefore, Pennsylvania and other partners have expressed interest in the development of a “guide” with basic information for each CBP-approved BMP summarized in a brief and consistent (two page) format. For purposes of this project, the BMP-specific two page document is referred to as “information sheets,” “quick info sheets,” or “reference sheets” to distinguish them from more detailed “fact sheets” that already exist for some CBP-approved BMPs. Combined together, the information sheets comprise the overall “guide” document.

Scope

The main purpose of this project is to develop a “guide” document that includes a short (2-page) quick reference sheet for each Phase 6 CBP-approved BMP. The reference sheets will be grouped according to sector (see draft outline below). Additionally, the document will include a

¹ http://www.chesapeakebay.net/groups/group/bmp_expert_panels

² <http://casttool.org/Documentation.aspx>

³ <http://chesapeakestormwater.net/bay-stormwater/fact-sheets/>

brief introductory section to provide necessary background about the overall document, including an overview of the “guide” contents and organization, and a simplified summary of how BMPs fit into the overall Phase 6 suite of modeling tools. Some BMPs like stream restoration may appear in multiple sections even when the information is duplicative.

The overall document must be organized to allow for addition of new BMPs, as well as for revisions to existing Phase 6 BMPs. The individual BMP sheets should be available for individual download, but the document should also be available to download in more aggregated formats (e.g., whole document and by sector).

The exact outline and the contents of each information sheet are subject to change based on feedback and needs of the partnership. That said, the information contained in each BMP info sheet can be broken down into three categories: 1) general descriptive information about the practice(s); 2) specific information for CBP partnership modeling, reporting or tracking purposes, and; 3) supplementary information of broader partnership, federal or state interest. Sample questions for each of these categories are listed below for illustrative purposes. Ultimately, the information from these three categories is conveyed through the elements of the “draft quick reference sheet outline” at the end of this document.

General descriptive info about the practice(s)

- What is the BMP?
- What does it do?
- What does it look like?
- What kind of variety is there?

BMP information specific to CBP partnership, modeling or TMDL purposes

- What is the CBP definition?
- How is the BMP simulated in the CBWM?
- What average TN, TP and TSS reductions does it achieve in the CBWM?
- What CBWM land use(s) is it reported on?
- Which data elements are required for tracking, verifying, and reporting and incorporation into the CBWM?
- What is the credit duration for the BMP in the CBWM?
- When was the BMP and its reductions defined?
- What is the link to BMP panel report?

Supplementary and supporting information of interest to the audience

- Federal- or State-Specific links to BMP standards/specs, manuals or programmatic pages (E.g., NRCS Practice Standards, cost-share programs, stormwater BMP manuals, etc.)
- Other helpful links (e.g., ChesapeakeTrees.net)

Deliverables and draft timeline

Draft outline of overall document and individual BMP reference sheets: **May 2017**

Draft mock-up/examples: **May 2017**

Review/feedback from WTWG of draft outline and mock-ups; work with CBP communications team on quality info sheet template: **May – June 2017**

Fill in draft info sheets, work internally with CBP staff and with external partners as needed. In general, the most common BMPs or BMPs that account for greater reductions in the WIPs will be prioritized and less common BMPs will be completed towards the end. **June – November 2017**

Share draft document and draft info sheets with WTWG and sector workgroups for general feedback and addition of missing state-specific information as they become available: **June – November 2017**

Make additional edits and improvements based on feedback; work with CBP communications team on complete document: **November – December 2017**

Share complete draft-final document for final corrections/edits: **December 2017 – January 2018**

Final “guide” document published for use by partners during Phase III WIP development: **January – February 2018**

Parties subject to requests for responsive feedback on document

Watershed Technical Workgroup members for initial feedback on project, draft outline and mock-ups, in addition to review of draft-final document.

CBP Modeling Team and Scenario Builder team for QA/QC of statements in the BMP information sheets pertaining to the BMPs in the Phase 6 modeling tools.

State WIP leads for feedback on content and design of draft BMP information sheets.

Sector workgroup members and interested parties for providing state- and program-specific links of interest for respective sector BMPs.

CBP Communications Team to assist with quality improvements to document template and to ensure incorporation of document as part of Midpoint Assessment and Phase III WIPs communication strategy.

Draft Outline for overall “CBP BMP Manual”

Background and introduction

“Read me” about the document, contents and purpose of BMP info sheets

BMPs in the modeling tools 101: basics about how BMPs are simulated in the model

Agriculture BMPs

- A1. Alternative Crops
- A2. Nutrient Management**
- A3. Conservation Tillage**
- A4. Cover Crops – Traditional**
- A5. Cover Crops – Commodity**
- A6. Animal Waste Management System**
- A7. Barnyard Runoff Control
- A8. Horse Pasture Management
- A9. Loafing Lot Management
- A10. Dairy Precision Feeding and/or Forage Management
- A11. Lagoon Covers
- A12. Forest Buffer
- A13. Grass Buffer
- A14. Land Retirement
- A15. Manure Composting
- A16. Manure Incorporation
- A17. Manure Injection
- A18. Manure Transport
- A19. Manure Treatment
- A20. Mortality Composters
- A21. Off Stream Watering Without Fencing
- A22. Poultry Litter Amendments
- A23. Poultry Nutrient Reduction
- A24. Precision Intensive Rotational/Prescribed Grazing
- A25. Soil Conservation and Water Quality Plans
- A26. Sorbing Materials in Ag Ditches
- A27. Swine Phytase
- A28. Biofilters
- A29. Cropland Irrigation Management
- A30. Irrigation Water Capture Reuse
- A31. Tree Planting
- A32. Water Control Structures
- A33. Wetland Creation
- A34. Wetland Restoration
- A35. Stream Restoration**

Developed BMPs (Stormwater BMPs)

D1. Stormwater Retrofits

- Bioretention/rain garden (RR)
- Bioswale (RR)
- Vegetated Open Channel (RR)
- Filtering Practices (ST)
- Infiltration Practices (RR)
- Permeable Pavers (RR)
- Wet Ponds and Wetlands (ST)

D2. Stormwater Performance Standards

D3. Erosion and Sediment Control

- Dirt and Gravel Roads ESC

D4. Urban Stream Restoration

D5. Urban Nutrient Management

D6. Urban Tree Planting BMPs

- Urban Forest Buffers
- Urban Tree Canopy Expansion
- Urban Forest Planting

D7. Forest Conservation

D8. Reducing Nutrients from Gray Infrastructure

- Advanced MS4 Nutrient Discovery Program
- Elimination of Individual Nutrients from Gray Infrastructure

D9. Street Sweeping

D10. Storm Drain Cleaning

D11. Floating Treatment Wetlands

D12. IC Disconnections

- Impervious disconnection to amended soils
- Impervious Surface Reduction

D13. Dry Detention Ponds

Natural or Multi-Sector BMPs

N1. Urban and Non-Urban Stream Restoration

N2. Urban and Non-Urban Shoreline Erosion Control and Management

N3. Wetland Enhancement

N4. Wetland Rehabilitation

N5. Abandoned Mine Reclamation

N6. Algal Flow-way

N7. Oyster Aquaculture

N8. Forest Harvesting Practices

Septic BMPs

- S1. Septic Connection
- S2. Septic Denitrification
- S3. Septic Effluent – Enhanced
- S4. Septic Pumping
- S5. Septic Secondary Treatment

Total: 61 BMP reference sheets

New BMPs added as next Letter-Number in sequence; Letter-Number unchanged for updates or revisions to a BMP.

Draft outline for each “quick reference sheet” (see draft Conservation Tillage mock-up for example)

Practice Name

Practice Description

CBP definition(s)

Photo(s) [throughout]

Specifications or key qualifying conditions (minimal, not heavy details)

Nitrogen, Phosphorus and Sediment Reductions

Applicable Land Use Types (or other load sources) Treated by the BMP

Brief Description of BMP Simulation in the Model

- BMP type and description;
- Annual or Cumulative? (credit duration)
- Stackable with other BMPs?

Key Elements for State BMP Reporting through NEIEN

- BMP Name
- Measurement name
- Land Use
- Geographic Location
- Date of implementation

Additional Information

- Hyperlink to Expert Panel Report
- NRCS Practice Code Equivalent (or other key programmatic linkages)
- Reasonable number of links to Cost Share Agencies or key state/federal or other partner sites

Version and History Statement (origin, revisions)

- Date when the info sheet was published/revised; date when the BMP definitions and reductions were approved by the WQGIT
- “All BMP effectiveness estimates are subject to potential future reviews according to the availability of new scientific information and CBP partnership needs, as defined in the BMP Review Protocol.”

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