Meeting Minutes
2023 Virginia Stormwater Handbook
Stakeholder Advisory Group (SAG) Meeting #6
Wednesday December 14, 2022
Location: DEQ Headquarters
1111 East Main Street
Richmond, VA 23219
Start – 9:30 AM

Attendees:

- SAG Members
  - Alex Forasté, Virginia Department of Transportation (VDOT)
  - Ashley Hall, Stantec
  - Benjamin Slaughter, Hazen and Sawyer
  - Blair Blanchette, Virginia Conservation Assistance Program (VCAP)
  - Brian Parker, VTCA – alternate
  - Charles Bodnar, City of Virginia Beach
  - Dale Chestnut, James Madison University
  - Darrell Marshall, Virginia Department of Agriculture and Consumer Services (VDACS)
  - Dave Maxwell , Prince William County - alternate
  - David Hirschman, Hirschman Environmental
  - Doug Moseley, GKY & Associates
  - Frank Graziano, Wetland Studies and Solutions, Inc. (WSSI)
  - Hannah Zegler, Dominion
  - Jack Dawson, City of Charlottesville
  - Jacob Dorman, SW Manufacturers Association
  - James Taylor, Balzer & Associates
  - Jared Webb, American Electric Power
  - Jerry Stonefield, Fairfax County
  - Joe Wilder, Frederick County
  - John Burke, Montgomery County
  - Justin Doyle, James River Association
  - Kateri Simon, Luck Ecosystems
  - KC Filippino, Hampton Roads Planning District Commission (HRPDC)
  - Laurence Benson, Kimley-Horn
  - Liz Scheessele, Timmons Group
  - Logan Borror, City of Waynesboro
  - Matthew Huston, City of Harrisonburg
  - Melissa Burgh, JMT (Johnson, Mirmiran & Thompson, Inc)
  - Michael S. Kitchen, Christopher Consultants
  - Mike Hogan, American Council of Engineering Companies of Virginia (ACEC Virginia)
  - Mike Huggins, City of Danville – alternate
  - Norm Goulet, Northern Virginia Regional Commission (NOVARC)
  - Raj Bidari, Prince William County
  - Wil Orndorff, Virginia Department of Conservation and Recreation (DCR) - Alternate

    - Richard Jacobs, Culpeper Soil and Water Conservation District (SWCD)
    - Brian Parker, Virginia Transportation Construction Alliance (VTCA) - Alternate
    - Scott Jackson, Henrico County
    - Tommy Branin, Colonial Materials
    - Jason Franitti
    - W. Lee Daniels – Virginia Tech.
- Members of the Public
    - Ben Leatherland – H&P Engineering
    - Joe Belmonte – ECS Products
- DEQ Staff
    - Evan Branosky
    - Drew Hammond
    - Rebecca Rochet
    - Nelson Daniel
    - Joe Crook
- Arcadis / Contractor for Handbook Development
    - Fernando Pasquel
    - James Patteson
    - Michael Wooden
    - Mike DeVuono
    - Shandor Szalay
    - Chris Solden

- Welcome, fifth meeting recap, and FOIA
    - Evan Branosky (Chief Stormwater Policy Advisor, DEQ) welcomed the SAG members and provided an overview of the Arcadis workplan and efforts since the last meeting in November. The presentation Evan, and later Arcadis, used during the meeting follows the minutes.
    - FOIA Information: Evan reminded SAG members that the SAG is a public body and that they should not use "reply all" for any email correspondence.
    - Evan asked each organization represented on the SAG to have one primary member and one alternate member so that all contributions, questions, comments or concerns sent to either DEQ staff or Arcadis come from either the primary or alternate SAG member.
    - Evan told SAG members that DEQ Director Mike Rolband sent an email to each of the 50 entities in Virginia that have Annual Standards & Specifications. In the email he asked for their input on revisions to the specs and/or help drafting individual specs. Evan asked SAG members to please provide their comments concerning annual standards and specifications. DEQ and Arcadis are developing a template form for the Handbook and want SAG members to have the opportunity to review the content and to provide feedback.
    - DEQ also sent emails to the heads of engineering programs at Virginia colleges and universities, giving them an opportunity to participate in development of the Handbook

by producing, submitting, and reviewing content. Several universities responded and expressed interest in reviewing the content and providing feedback.

- Handbook Development Tasks
    - Arcadis staff led discussions with SAG members about several topics related to development of the Handbook. Additional information is in the presentation that follows the minutes.
    - SAG Subcommittees: Arcadis sent emails to SAG members last week with links to a SharePoint site – so that SAG members can review outlines and draft content and provide feedback to Arcadis and DEQ. The goal is to have all discussions concerning the Handbook outline completed by January 2023, then shift to reviewing specific content for each chapter after that.
    - The Arcadis team reviewed the planned Work and Production schedule for 2023.
        - Rollout – Construction BMPs (E&SC)
            - Goal is to be done with these by Apr. – so that Arcadis can spend May-Jun responding to feedback received throughout development process
            - Color coding on slide indicates expected level of work/effort to complete (green being easiest, going to red – most challenging)
        - Post Construction BMPs
            - Color coding on slide indicates expected level of work/effort to complete (green being easiest, going to dark red – most challenging)
            - AS&S entities – if they have submitted a spec already, DEQ has it and will review it. If there is something else, something new, please submit – particularly if there is something from another state that the AS&S entity wants DEQ to consider
            - Arcadis noted bioretention will need significant effort
        - Chapters – Arcadis has a general outline for the handbook (goal is for the general outline to be final by January 2023) and is developing detailed outlines for each chapter
        - Appendices – timeline for development is comparable to BMPs and Chapters
            - SAG members asked about content related to karst and treatment trains. Arcadis said both would be addressed in Chapter 6
- Handbook Outline and Chapters
    - The Arcadis team provided additional outline updates and feedback concerning the changes to the overall outline (V.3) and the changes made to V.2. Some of these changes included:
        - Renaming Chapter 9 and 10 by eliminating BMP
        - Modified Chapter 3 to include more guidance on municipal program requirements. SAG members were reminded that the Handbook is geared towards developers. However, the Handbook will describe municipal programs – not guidance to describe municipal programs – but rather links to those programs, including comprehensive stormwater management plans to better retain the Handbook's focus on development.
        - Guidance not focused on design and construction of BMPs in development projects will be removed.

    - Whether to provide links or document relevant material is appendices has not been decided yet, but a decision will be made in the coming months.
    - In discussing the Laws and Regulations chapter, it was explained that this chapter will provide an expanded annotated summary.
    - The proposed construction BMP categorization includes five "buckets" that include Erosion Control Measures, Sediment Control Measures, Perimeter Control Measures, Surface Stabilization Measures, and Environmental Sensitive Area Protection. These sub-categories will have unique numbering with support components found within the BMP Clearinghouse.
    - The proposed post-construction BMP categorization includes Basins, Conveyance, and Filtration and Infiltration.
        - SAG members asked about manufactured treatment devices. Some will be integrated but may be addressed as a separate chapter. Arcadis has to make a decision and bring it back to SAG for feedback.
        - There was also discussion about filtrations/infiltration. Arcadis responded saying this is a broader concept that will be covered outside of the BMP-specific chapters.
    - Schedule for review/review process
        - SAG members will get about 1 week prior to each meeting to review draft specs and be ready to provide feedback at the meeting. Draft specs will go to subcommittee members only for first review process. Individual members may request to review specific content if they have subject matter expertise/or specific interest.
        - Arcadis has created form for comments/feedback
        - Attachments (including pictures and CAD files) are welcome, including mark-ups, and may be submitted using the Arcadis form. Arcadis asked SAG members to try to have graphics associated with a line number.
        - Arcadius will follow the same process for chapters and outline review
- Outreach and Engagement
    - The objective is to get information about the Handbook out to industry, developers, other stakeholders. SAG members suggested additional groups/events that were not listed on the presentation slide.
- Breakout session
    - Following a break, SAG members divided up into groups based on their subcommittee assignments. Each group met with Arcadis staff to provide feedback on draft content for the Handbook, the Handbook outline/chapter outlines, and calculations
- Public Comment
    - At the conclusion of the breakout session, Evan invited SAG members and members of the public to provide thoughts and comments. No one offered comments.
- Wrap-Up
    - Evan Branosky thanked members for their support and participation. The next meeting is scheduled for Friday, January 20, 2023. The meeting is on a Friday to minimize conflict with the General Assembly which will be in session.
- Evan closed the meeting at 3:45 pm.

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

2023 Virginia Stormwater Handbook

Stakeholder Advisory Group

Meeting #6 (December 14, 2022)

Agenda

- **Welcome & 5th Meeting Recap**
  - ✓ FOIA Information
  - ✓ 5th Meeting Content and Outcomes
  - ✓ General Update

  Evan Branosky, DEQ

- **Handbook Development Tasks**
  - ✓ SAG Subcommittees
  - ✓ Planned Work and Production Schedule

  Arcadis Team

Break

- **Handbook Outline & Chapters**
  - ✓ Outline Update and Feedback
  - ✓ Chapters Update and Feedback

  Arcadis Team
  SAG

Lunch Break

- **E&S Controls and SWM BMP Specifications and Outreach Discussion**
  - ✓ Draft Specifications Release and Review Process
  - ✓ Outreach and Engagement Plan Update
  - ✓Brainstorm

  Arcadis Team
  SAG

DEQ

Agenda

- **Subcommittee Brainstorm: Outline Content**
  - ✓ Subcommittee Discussions
  - ✓ Report Out

    - **Outline & Chapters Subcommittee and Handbook Planning, Production, and Outreach Subcommittee**– Feedback on outline revisions and draft chapter outlines
    - **E&S Controls Group** – Review the E&S specifications and provide feedback. Identify SAG members that can contribute content
    - **SWM BMPs Group and Calculations Subcommittee** – Review stormwater specifications and provide feedback. Identify SAG members that can contribute content
    - ALL – Identify SAG members that can contribute content

    SAG
    Arcadis Team

Break

- **Public Comment** — All

- **Wrap-Up** — Evan Branosky, DEQ

DEQ

Welcome & 5th Meeting Recap

FOIA Information

1. The SAG is a public body subject to the Freedom of Information Act (FOIA). As such, all business of the group must be conducted in a public forum that has been noticed in accordance with the Act and minutes must be prepared.

2. Emails may be considered as the conduct of business. Thus, individual members of the SAG should not use "reply to all" when receiving emails from DEQ. Also, any member of the SAG that wants to provide information to the group should send it to the DEQ Project Manager for distribution.

3. If more than two members of the SAG serve on a subcommittee, those subcommittees are also public bodies and thus subject to FOIA rules.

NOTE:

- Subcommittees seeking to meet virtually will be subject to § 2.2-3708.3. (Meetings held through electronic communication means), of the *Code of Virginia*.

DEQ

Handbook Development Tasks

SAG Subcommittees

- ✓ ESC & SWM BMPs
- ✓ Calculations (H&H, Water Quality)
- ✓ Outline & Chapters
- ✓ Handbook Planning, Production, Outreach

DEQ

Construction BMP Rollout

6 – Dec 2022	7 – Jan 2023	8 – Feb 2023	9 – March 2023	10 – Apr 2023
"New" BMPs Compost Sock Super Silt Fence	3.21 – Level Spreader	3.05 – Silt Fence	3.27 – Turbidity Curtain	3.36 – Soil Stabilization & Matting
	3.34 – Bermudagrass and Zoysiagrass Est.	3.17 – Storm Conveyance Channel	3.25 – Utility Stream Crossing	3.37 – Trees, Shrubs, Vines, Groundcover
	3.14 – Temporary Sediment Basin	3.23 – Struct. Streambank Stabilization	3.28 – Subsurface Drain	3.04 – Straw Bale Barrier
3.07 – Storm Drain Inlet Protection	3.18 – Outlet Protection	3.22 – Veg. Streambank Stabilization	3.24 – Temporary Vehicular Stream Crossing	3.31 – Temporary Seeding
3.01 – Safety Fence	3.08 – Culvert Inlet Protection	3.13 – Temporary Sediment Trap	3.26 – Dewatering Structure	3.32 – Permanent Seeding
3.06 – Brush Barrier	3.38 – Tree Preservation & Protection	3.12 – Diversion	3.20 – Rock Check Dams	3.16 – Paved Flume
3.33 – Sodding	3.09 – Temporary Diversion Dike	3.03 – Construction Road Stabilizations	3.19 – Riprap	3.15 – Temp. Slope Drain
3.30 – Topsoiling	3.11 – Temporary ROW Diversion	3.10 – Temporary Fill Diversion	3.02 – Temp Stone Construction Entrance	3.35 – Mulching
3.29 – Surface Roughening	3.39 – Dust Control			
AS&S Release 1/4	AS&S Release 2/4	AS&S Release 3/4	AS&S Release 4/4	Graphics / Details

SAG Schedule

DEQ

Post-Construction Stormwater BMP Rollout

6 – Dec 2022	7 – Jan 2023	8 – Feb 2023	9 – Mar 2023	10 – Apr 2023
3 – Grass Channels	4 – Soil Compost Amendment	2 – Sheet Flow to Veg. Filter Strip/Conserved Open Space	"New" BMPs - RSC - Trees	8 – Infiltration Practices
11 – Wet Swales	15 – Extended Detention Pond	14 – Wet Pond	6 – Rainwater Harvesting	7 – Permeable Pavement
5 – Vegetated Roof	12 – Filtering Practices	Support Component: Principal Spillway	13 – Constructed Wetlands	Support Component: Quantity-Only Approach to BMPs
1 – Rooftop Disconnection	10 – Dry Swales	Support Component: Vegetated Emergency Spillway	Support Component: Sediment Forebay	9 – Bioretention (Urban Retention)
	Support Component: Earthen Embankments		Support Component: Pretreatment	

SAG Schedule

DEQ

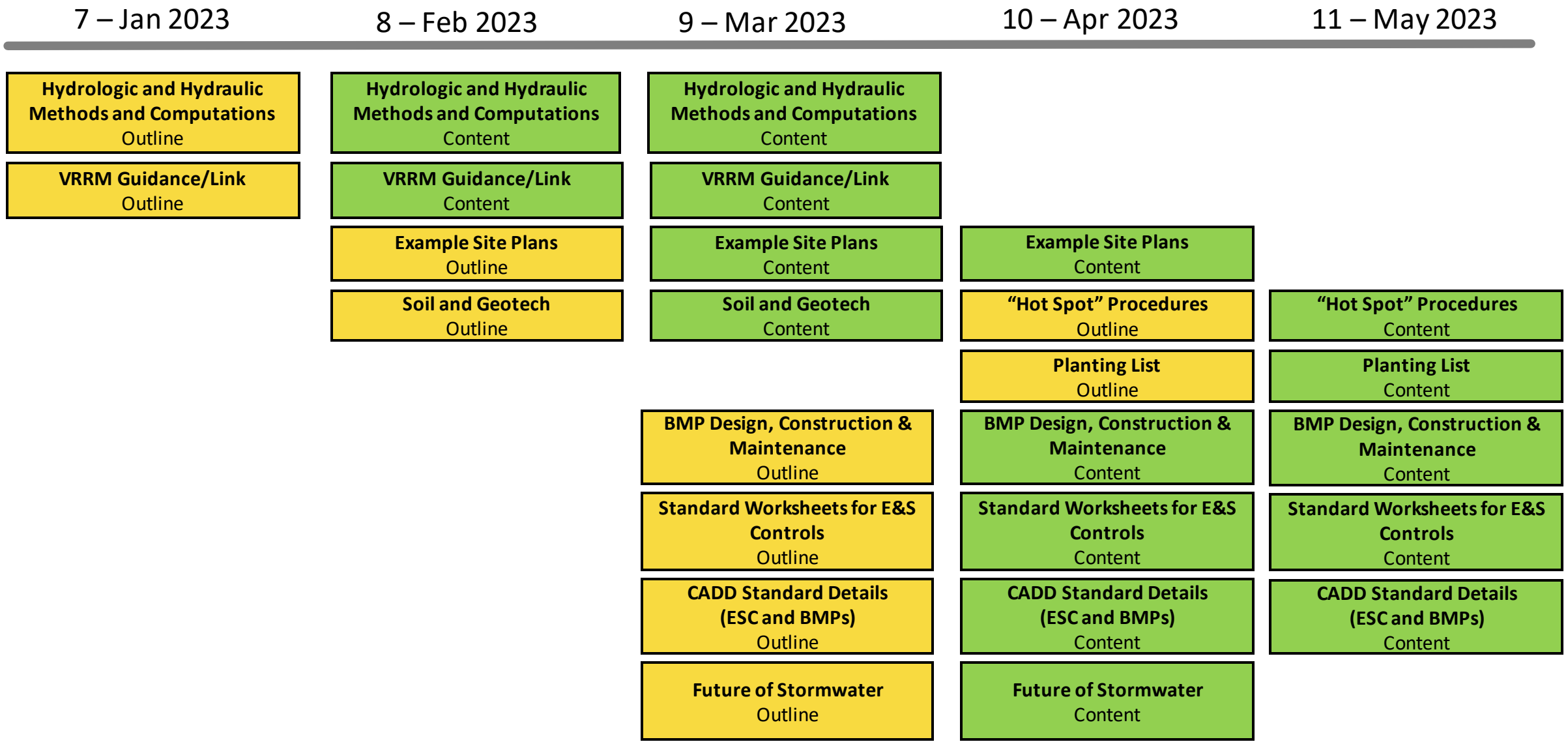
Stormwater Handbook Chapters Rollout

6 – Dec 2022	7 – Jan 2023	8 – Feb 2023	9 – Mar 2023	10 – Apr 2023
Chapter 5 Section 5.1	**Chapter 1** Outline	**Chapter 1** Content	**Chapter 2** Content	**Chapter 9** Content
Chapter 6 Outline	**Chapter 3** Outline	**Chapter 2** Outline	**Chapter 6** Section 6.3	**Chapter 10** Content
	Chapter 4 Section 4.1	**Chapter 3** Content	**Chapter 9** Outline	
	Chapter 4 Section 4.2.1 Section 4.2.2 Section 4.2.3	**Chapter 4** Section 4.2.3 Section 4.2.4 Section 4.2.5	**Chapter 10** Outline	
	Chapter 5 Section 5.2	**Chapter 5** Section 5.3		
	Chapter 6 Section 6.1	**Chapter 6** Section 6.2		

SAG Schedule

DEQ

Stormwater Handbook Appendices Rollout



SAG Schedule

DEQ

DRAFT Handbook Outline and Chapters

Changes to Overall Outline - V3

- **Changes from V2**
  - Renamed Chapter 9 and 10 to eliminate “BMP”
  - Modified Chapter 3 to include more guidance on municipal programs
  - Removal of guidance not focused on design and construction of BMPs in development projects
    - Will add links to guidance available on municipal program development, including Comprehensive Stormwater Management Plans.
    - Other topics will be added in the appropriate sections
    - DEQ discussing options

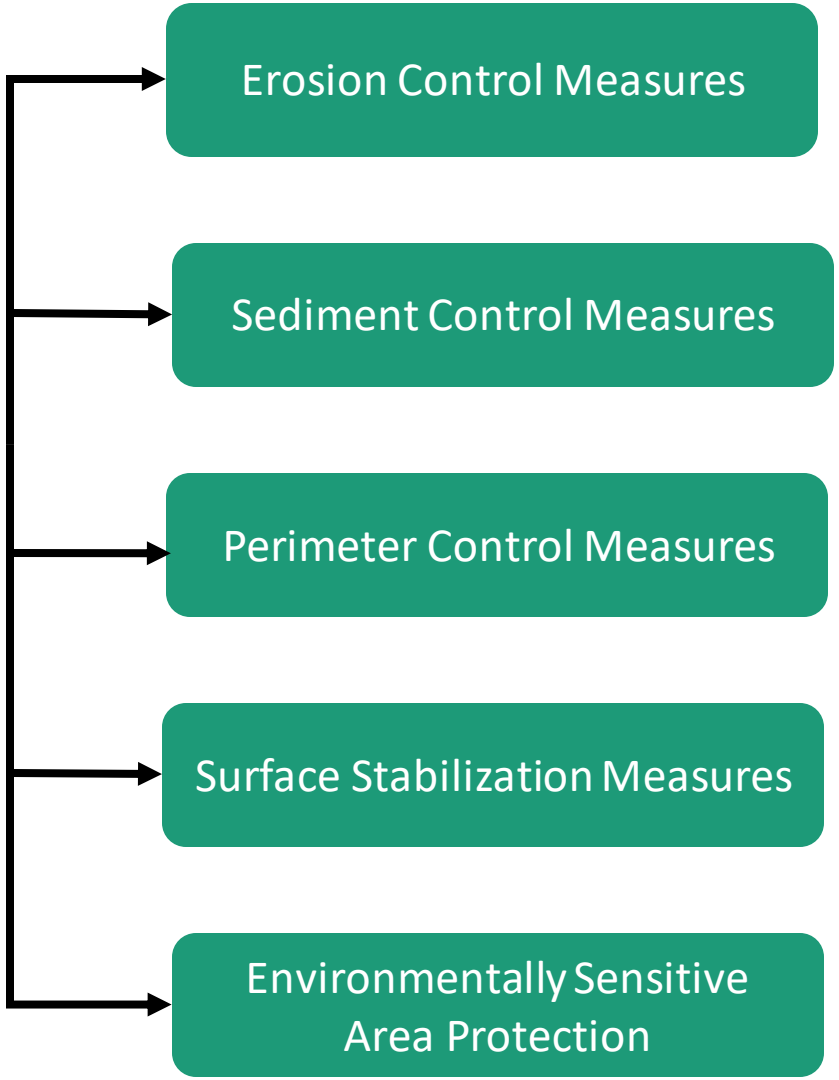
Changes to Overall Outline

- Chapter 3 – Laws and Regulations
  - Provide an expanded annotated summary of the following, providing guidance to orient developers and engineers to critical sections and referencing to other sections of the handbook:
    - Virginia Stormwater Act
    - Virginia Stormwater Management Program (VSMP) Regulations
    - Erosion and Sediment Control Law
    - Erosion and Sediment Control Regulations
    - VPDES General Permit for Discharges of Construction Activities
    - Chesapeake Bay Preservation Act
    - Chesapeake Bay TMDL
  - Outlines how the regulatory compliance process integrates with the municipal stormwater management and state-level water quality initiatives
    - Municipal Stormwater Management Programs
      - Program Structure and Administration (provide links to PDF with municipal program guidance from 2013 draft manual)
      - Regulating Development
      - Implementing Stand Alone Water Quality Projects
        - Stormwater Retrofits
        - Stream Restoration (provide link to Stream Restoration Handbook)

DEQ

Proposed Construction BMP Categorization

3.01 - Safety Fence
3.02 - Construction Entrance
3.03 - Construction Road Stabilization
3.04 - Straw Bale Barrier
3.05 - Silt Fence
3.06 - Brush Barrier
3.07 - Storm Drain Inlet Protection
3.08 - Culvert Inlet Protection
3.09 - Temporary Diversion Dike
3.10 - Temporary Fill Diversion
3.11 - Temporary Right-of-Way Diversion
3.12 - Diversion
3.13 - Temporary Sediment Trap
3.14 - Temporary Sediment Basin
3.15 - Temporary Slope Drain
3.16 - Paved Flume
3.17 - Stormwater Conveyance Channel
3.18 - Outlet Protection
3.19 - Riprap
3.20 - Rock Check Dams
3.21 - Level Spreader
3.22 - Vegetative Streambank Stabilization
3.23 - Structural Streambank Stabilization
3.24 - Temporary Vehicular Stream Crossing
3.25 - Utility Stream Crossing
3.26 - Dewatering Structure
3.27 - Turbidity Curtain
3.28 - Subsurface Drain
3.29 - Surface Roughening
3.30 - Topsoiling
3.31 - Temporary Seeding
3.32 - Permanent Seeding
3.33 - Sodding
3.34 - Bermudagrass and Zoysiagrass Establishment
3.35 - Mulching
3.36 - Soil Stabilization Blankets and Matting
3.37 - Trees, Shrubs, Vines and Ground Covers
3.38 - Tree Preservation and Protection
3.39 - Dust Control



Proposed Construction BMP Categorization

Surface Stabilization Measures
C-SSM- (01-XX)

- 3.29 - Surface Roughening
- 3.31 - Temporary Seeding
- 3.32 - Permanent Seeding
- 3.33 - Sodding
- 3.34 - Bermudagrass and Zoysiagrass Establishment
- 3.35 - Mulching
- 3.36 - Soil Stabilization Blankets and Matting
- 3.37 - Trees, Shrubs, Vines, and Ground Cover
- 3.30 - Topsoiling
- 3.38 - Tree Preservation and Protection
- New BMPs from Annual Specs and Standards

Erosion Control Measures
C-ECM- (01-XX)

- 3.09 - Temporary Diversion Dike
- 3.10 - Temporary Fill Diversion
- 3.11 - Temporary Right-of-Way Diversion
- 3.12 - Diversion
- 3.15 - Temporary Slope Drain
- 3.16 - Paved Flume
- 3.17 - Stormwater Conveyance Channel
- 3.18 - Outlet Protection
- 3.19 - Rip Rap
- 3.21 - Level Spreader
- 3.28 - Subsurface Drain
- Waterbars
- New BMPs from Annual Specs and Standards

Sediment Control Measures
C-SCM- (01-XX)

- 3.02 - Temporary Stone Construction Entrance
- 3.03 - Construction Road Stabilization
- 3.13 - Temporary Sediment Trap
- 3.14 - Temporary Sediment Basin
- 3.20 - Rock Check Dams
- 3.27 - Turbidity Curtain
- 3.26 - Dewatering Structure
- 3.39 - Dust Control
- 3.07 - Storm Drain Inlet Protection
- 3.08 - Culvert Inlet Protection
- New BMPs from Annual Specs and Standards

Perimeter Control Measures
C-PCM- (01-XX)

- 3.01 - Safety Fence
- 3.04 - Straw Bale Barrier
- 3.05 - Silt Fence
- 3.06 - Brush Barrier
- Compost Filter Sock
- Super Silt Fence

Environmentally Sensitive Area Protection
C-ENV- (01-XX)

- 3.22 - Vegetative Streambank Stabilization
- 3.23 - Structural Streambank Stabilization
- 3.24 - Temporary Vehicular Stream Crossing
- 3.25 - Utility Stream Crossing
- New BMPs from Annual Specs and Standards

Construction BMP Rollout

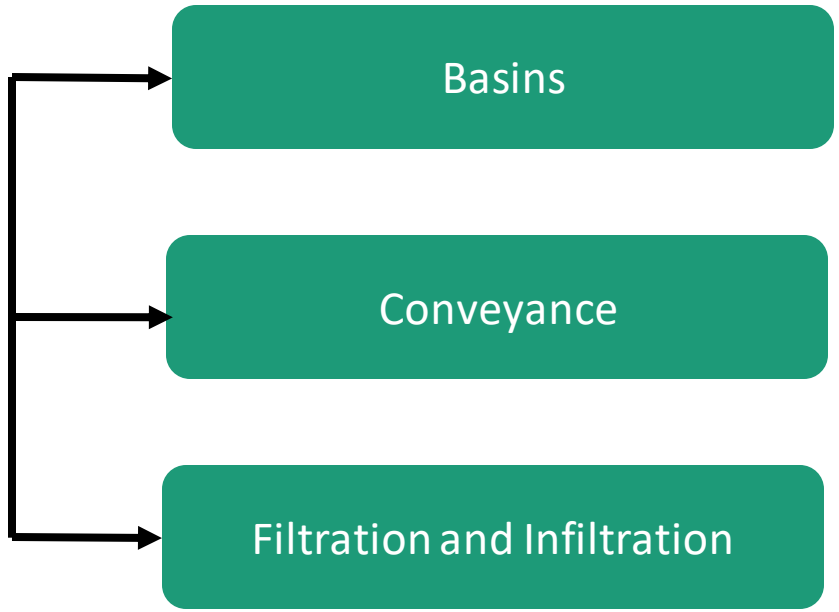
6 – Dec 2022	7 – Jan 2023	8 – Feb 2023	9 – March 2023	10 – Apr 2023
"New" BMPs Compost Sock Super Silt Fence	3.21 – Level Spreader	3.05 – Silt Fence	3.27 – Turbidity Curtain	3.36 – Soil Stabilization & Matting
	3.34 – Bermudagrass and Zoysiagrass Est.	3.17 – Storm Conveyance Channel	3.25 – Utility Stream Crossing	3.37 – Trees, Shrubs, Vines, Groundcover
	3.14 – Temporary Sediment Basin	3.23 – Struct. Streambank Stabilization	3.28 – Subsurface Drain	3.04 – Straw Bale Barrier
3.07 – Storm Drain Inlet Protection	3.18 – Outlet Protection	3.22 – Veg. Streambank Stabilization	3.24 – Temporary Vehicular Stream Crossing	3.31 – Temporary Seeding
3.01 – Safety Fence	3.08 – Culvert Inlet Protection	3.13 – Temporary Sediment Trap	3.26 – Dewatering Structure	3.32 – Permanent Seeding
3.06 – Brush Barrier	3.38 – Tree Preservation & Protection	3.12 – Diversion	3.20 – Rock Check Dams	3.16 – Paved Flume
3.33 – Sodding	3.09 – Temporary Diversion Dike	3.03 – Construction Road Stabilizations	3.19 – Riprap	3.15 – Temp. Slope Drain
3.30 – Topsoiling	3.11 – Temporary ROW Diversion	3.10 – Temporary Fill Diversion	3.02 – Temp Stone Construction Entrance	3.35 – Mulching
3.29 – Surface Roughening	3.39 – Dust Control			
AS&S Release 1/4	AS&S Release 2/4	AS&S Release 3/4	AS&S Release 4/4	Graphics / Details

SAG Schedule

DEQ

Proposed Post-Construction Stormwater BMP Categorization

Practice 1 - Rooftop/Impervious Disconnection
Practice 2 – Sheet Flow to Vegetated Filter Strip/Conserved Open Space
Practice 3 – Grass Channels
Practice 4 – Soil Compost Amendment
Practice 5 – Vegetated Roof
Practice 6 – Rainwater Harvesting
Practice 7 – Permeable Pavement
Practice 8 – Infiltration Practices
Practice 9 – Bioretention
Practice 10 – Dry Swales
Practice 11 – Wet Swales
Practice 12 – Filtering Practices
Practice 13 – Constructed Wetlands
Practice 14 – Wet Pond
Practice 15 – Extended Detention (ED) Pond



Post-Construction Stormwater BMP Categorization

Basins
P-BAS- (01-XX)

- Constructed Wetlands (BMP 13)
- Wet Pond
- Extended Detention (ED) Pond

Conveyance
P-CNV- (01-XX)

- Grass Channels
- Dry Swales
- Wet Swales
- Regenerative Swale Conveyance

Filtration and Infiltration
P-FIL- (01-XX)

- Rooftop (Impervious Surface) Disconnection (BMP 01)
- Soil Compost Amendment
- Vegetated Roof
- Rainwater Harvesting
- Permeable Pavement
- Infiltration Practices
- Bioretention
- Filtering Practices
- Sheet Flow to Vegetated Filter Strip/Conserved Open Space
- Trees

Support Components

- **Appendix A** – Earthen Embankment
- **Appendix B** – Principal Spillway
- **Appendix C** – Vegetated Emergency Spillway
- **Appendix D** – Sediment Forebay
- **Appendix E** – Landscaping
- **Appendix F** – Pre-Treatment
- **Appendix G** – Quantity-Only Approach to BMPs

Post-Construction Stormwater BMP Rollout

6 – Dec 2022	7 – Jan 2023	8 – Feb 2023	9 – Mar 2023	10 – Apr 2023
3 – Grass Channels	4 – Soil Compost Amendment	2 – Sheet Flow to Veg. Filter Strip/Conserved Open Space	"New" BMPs - RSC - Trees	8 – Infiltration Practices
11 – Wet Swales	15 – Extended Detention Pond	14 – Wet Pond	6 – Rainwater Harvesting	7 – Permeable Pavement
5 – Vegetated Roof	12 – Filtering Practices	Support Component: Principal Spillway	13 – Constructed Wetlands	Support Component: Quantity-Only Approach to BMPs
1 – Rooftop Disconnection	10 – Dry Swales	Support Component: Vegetated Emergency Spillway	Support Component: Sediment Forebay	9 – Bioretention (Urban Retention)
	Support Component: Earthen Embankments		Support Component: Pretreatment	

SAG Schedule

DEQ

Stormwater Handbook Chapters Rollout

6 – Dec 2022	7 – Jan 2023	8 – Feb 2023	9 – Mar 2023	10 – Apr 2023
Chapter 5 Section 5.1	**Chapter 1** Outline	**Chapter 1** Content	**Chapter 2** Content	**Chapter 9** Content
Chapter 6 Outline	**Chapter 3** Outline	**Chapter 2** Outline	**Chapter 6** Section 6.3	**Chapter 10** Content
	Chapter 4 Section 4.1	**Chapter 3** Content	**Chapter 9** Outline	
	Chapter 4 Section 4.2.1 Section 4.2.2 Section 4.2.3	**Chapter 4** Section 4.2.3 Section 4.2.4 Section 4.2.5	**Chapter 10** Outline	
	Chapter 5 Section 5.2	**Chapter 5** Section 5.3		
	Chapter 6 Section 6.1	**Chapter 6** Section 6.2		

SAG Schedule

DEQ

Stormwater Handbook Appendices Rollout

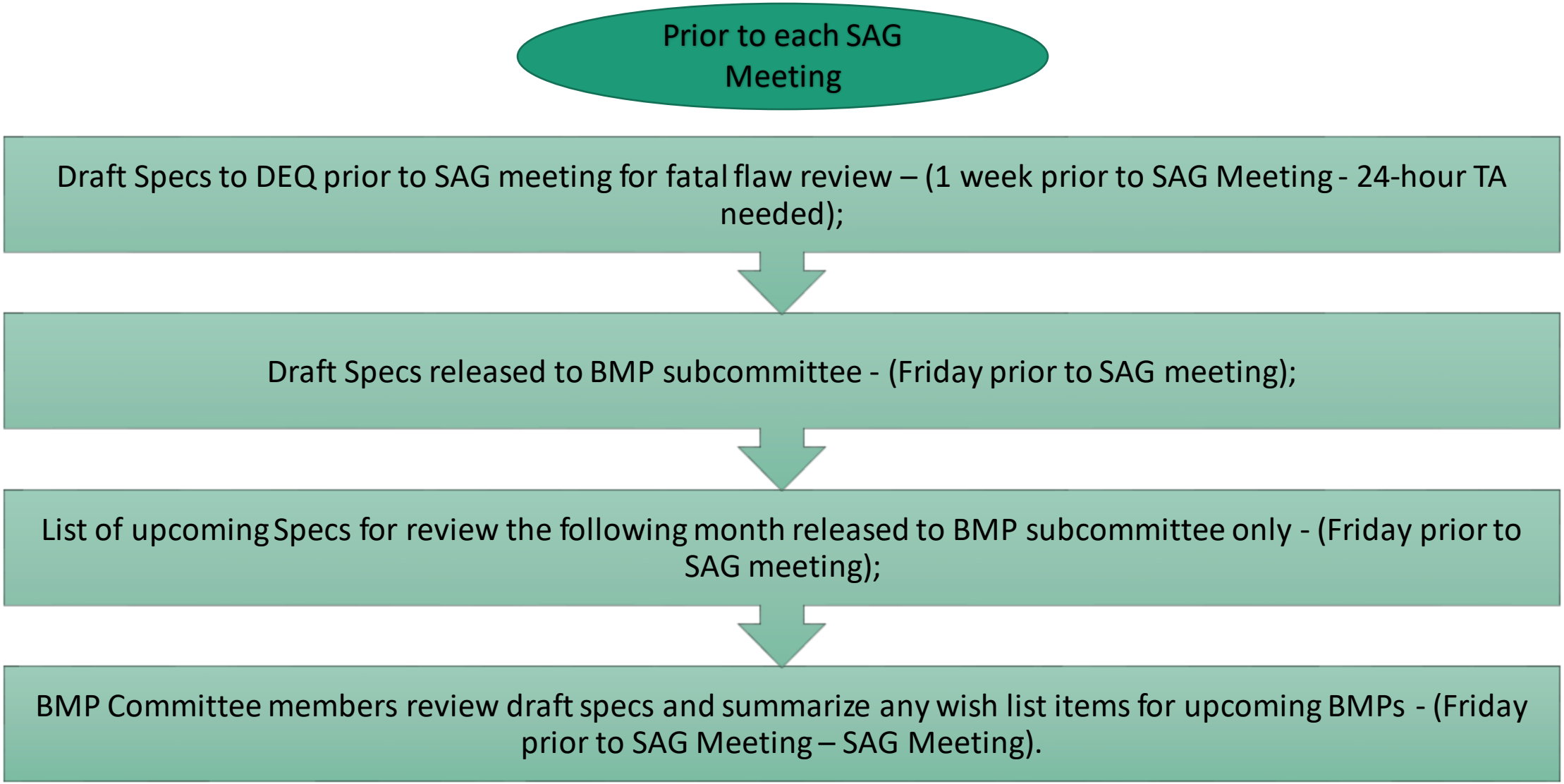
7 – Jan 2023	8 – Feb 2023	9 – Mar 2023	10 – Apr 2023	11 – May 2023
Hydrologic and Hydraulic Methods and Computations Outline	**Hydrologic and Hydraulic Methods and Computations** Content	**Hydrologic and Hydraulic Methods and Computations** Content		
VRRM Guidance/Link Outline	**VRRM Guidance/Link** Content	**VRRM Guidance/Link** Content		
	Example Site Plans Outline	**Example Site Plans** Content	**Example Site Plans** Content	
	Soil and Geotech Outline	**Soil and Geotech** Content	**"Hot Spot" Procedures** Outline	**"Hot Spot" Procedures** Content
			Planting List Outline	**Planting List** Content
		BMP Design, Construction & Maintenance Outline	**BMP Design, Construction & Maintenance** Content	**BMP Design, Construction & Maintenance** Content
		Standard Worksheets for E&S Controls Outline	**Standard Worksheets for E&S Controls** Content	**Standard Worksheets for E&S Controls** Content
		CADD Standard Details (ESC and BMPs) Outline	**CADD Standard Details (ESC and BMPs)** Content	**CADD Standard Details (ESC and BMPs)** Content
		Future of Stormwater Outline	**Future of Stormwater** Content	

SAG Schedule

DEQ

E&S Controls and SWM BMP Specifications and Outreach Discussion

BMP Review Process



DEQ

BMP Review Process

PLEASE USE REVIEW FORM TO PROVIDE COMMENTS

BMP C-ECM-XXX: Waterbar

→ WB →

1.0 Definition

A ridge of soil or a ridge and channel combination constructed on an angle across a utility right-of-way used to shorten flow paths and flatten slopes to reduce the erosive force of water or to direct water away from critical resources. A waterbar can be both a temporary and permanent structure.

2.0 Purpose & Applicability of BMP

Waterbars should be used to limit the accumulation of erosive volumes of water by diverting surface runoff at pre-designed intervals.

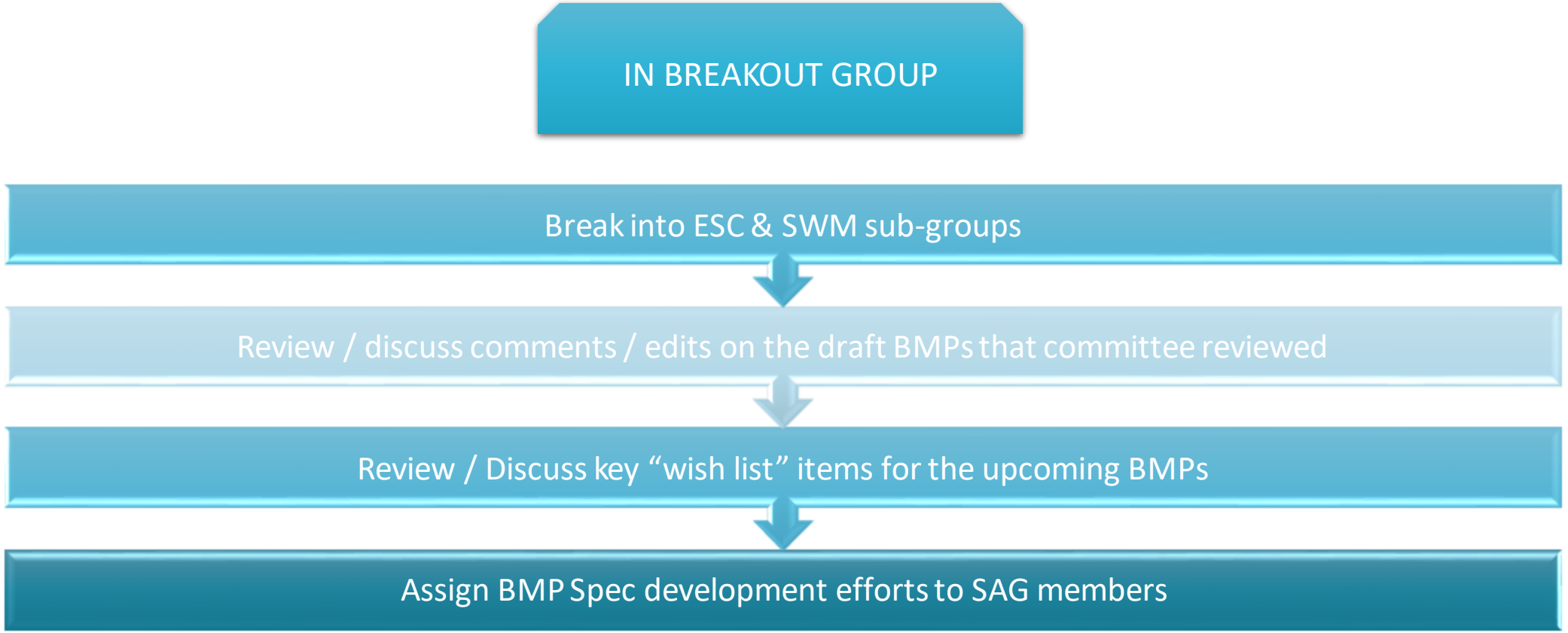
This practice is applicable on all utility construction that occurs on sloping ground. In fact, it is probably the most common sediment control practice used in pipeline construction.

Waterbars are typically used to control stormwater runoff on retired access roads and skid trails as well as pipeline and utility line rights-of-way. Waterbars are not appropriate for incised roadways, where there is no

	A	B	C	D	E	F	G
1	Title:						
2							
3	Chapter No/BMP Spec	Page No	Line No	Comments	Reviewer Name	Subcommittee	Response
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							

DEQ

BMP Review Process



DEQ

Process for Chapter Development

Prior to each SAG Meeting

Draft Chapter Content to DEQ prior to SAG meeting for fatal flaw review – (1 week prior to SAG Meeting - 24-hour TA needed);

Draft Chapter Content released to BMP subcommittee - (Friday prior to SAG meeting);

List of upcoming Chapter Content for review the following month released to Chapters subcommittee only - (Friday prior to SAG meeting);

BMP Committee members review Chapter Content and summarize any wish list items for upcoming BMPs - (Friday prior to SAG Meeting – SAG Meeting).

DEQ

Chapters Review Process

PLEASE USE REVIEW FORM TO PROVIDE COMMENTS

5.1 Regulating Land-Disturbing Activities (LDAs)

Regulated land disturbing activities are the primary trigger that determines if and how a project is regulated under the Virginia Erosion and Sediment Control Program (VESCP) and (VSMP). These programs are discussed in detail in Chapter 4, but a summary is included below.

The Virginia Erosion and Sediment Control Program (VESCP)

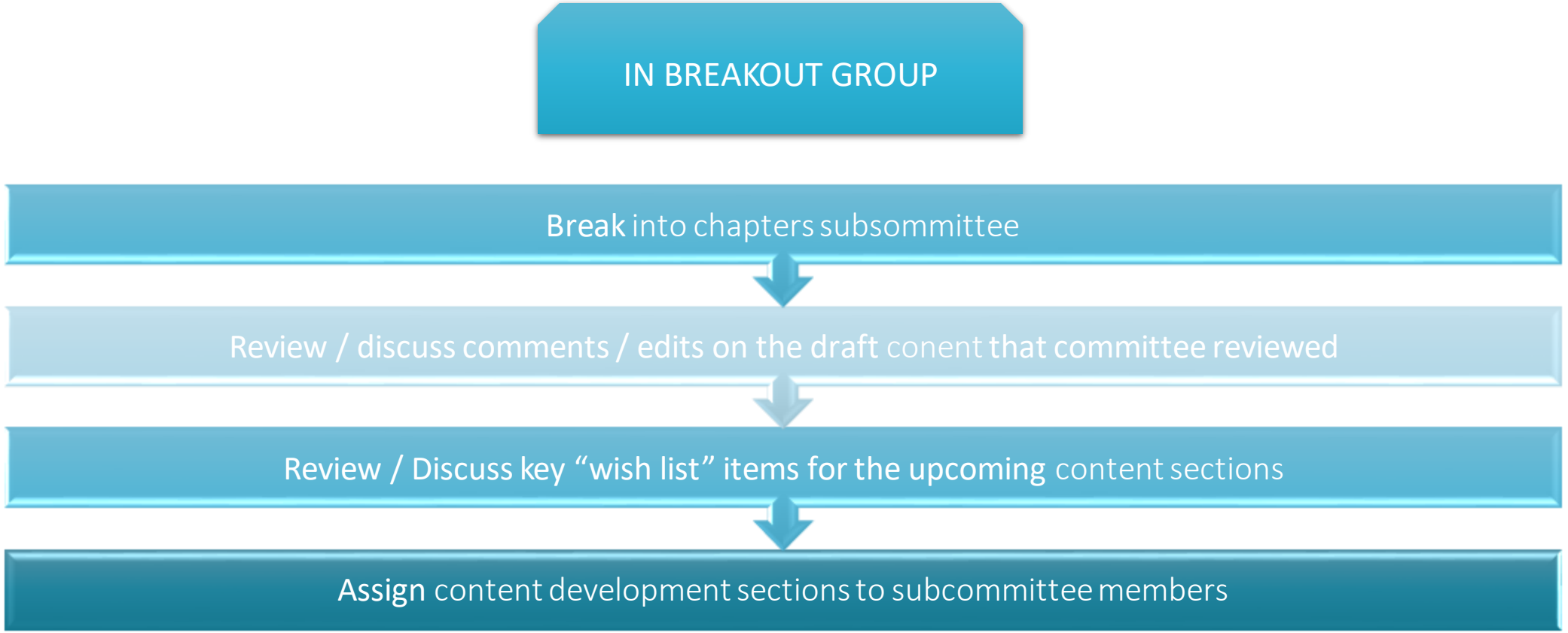
The Virginia Erosion and Sediment Control Law authorizes the Virginia Erosion and Sediment Control Program and associated regulations. The regulations explain the technical, operational, and legal details necessary to implement an erosion program.

A good understanding of the law, regulations, and local program requirements is essential for designers, plan reviewers, and localities. Inappropriate or negligent application of the law could result in legal action against a VESCP authority.

	A	B	C	D	E	F	G
1	Title:						
2							
3	Chapter No/BMP Spec	Page No	Line No	Comments	Reviewer Name	Subcommittee	Response
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							

DEQ

Chapters Review Process



DEQ

Outreach and Engagement Plan

- **Identification of stakeholder groups to brief/engage**
  - Groups to keep informed
    - VAMSA – ongoing briefings at their regular meetings
    - ASCE
    - APWA Mid Atlantic Chapter
  - Possible workshops/presentations
    - VWEA – Stormwater Committee
    - WaterJAM 2023
    - VA Lakes and Watershed Association Annual Conference
  - Electronic Comment Box
  - Other Groups to consider - VA Cave Board (Karst); Chesapeake Bay Network; Planning Districts, Environmental Groups
- **Develop outreach/engagement plan to mirror project plan**

DEQ

Sub-Committee Brainstorm: Handbook Content

Outline and Chapters Subcommittee and Handbook Planning, Production, and Outreach Subcommittee

- Provide feedback on outline revisions and draft chapter outlines.
- Identify SAG members that can contribute content.

DEQ

E&S Controls Group

- Members of the E&S and SWM BMPs Subcommittee that specialize on E&S controls are requested to participate in this work group to review the E&S specifications and provide feedback.
- Identify SAG members that can contribute content.

DEQ

SWM BMPs Group and Calculations Subcommittee

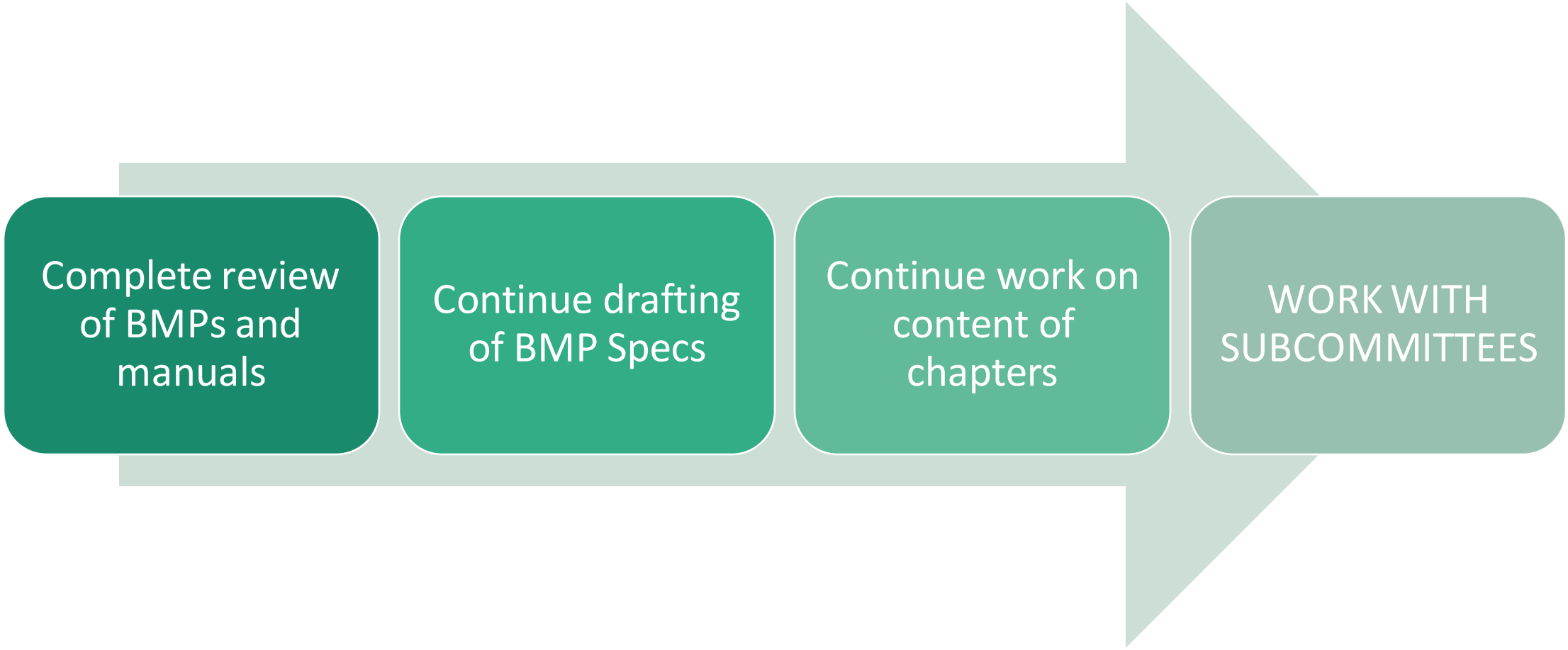
- Members of the Calculations Subcommittee and the E&S and SWM BMPs Subcommittee that specialize on SWM BMPs are requested to participate in this work group to review the stormwater specifications and provide feedback.
- Identify SAG members that can contribute content.

DEQ

Public Comment

Next Steps

Next Steps



DEQ

2023 Virginia Stormwater Handbook

Stakeholder Advisory Group

Meeting #6 (December 14, 2022)

The meeting is adjourned.

Contact: Evan Branosky
evan.branosky@deq.virginia.gov
(804)-584-6265

Draft Handbook Outline V3 - Chapters

- Chapter 1 – Introduction
- Chapter 2 – Why Erosion and Sediment Control and Stormwater Management Matters
- Chapter 3 – Laws and Regulations
- **Chapter 4 – Regulatory Compliance Process**
- Chapter 5 – Erosion and Sediment Control and Stormwater Management Requirements
- Chapter 6 – Site Design and BMP Selection
- **Chapter 7 – Design Specifications for Erosion and Sediment Control**
- **Chapter 8 – Design Specifications for Stormwater Management**
- Chapter 9 – Construction
- Chapter 10 – Inspection and Maintenance

DEQ

Draft Handbook Outline V3 - Appendices

- Hydrologic and Hydraulic Methods and Computations
- VRRM Guidance **or link to DEQ website (to be discussed with DEQ and Virginia Tech)**
- Example Site Plans
- Soil and Geotechnical Investigations
- “Hot Spot” procedures (areas of suspected environmental contamination)
- Planting Lists
- BMP Design Nomographs, Construction, and Maintenance Checklists
- Standard Worksheets for Erosion and Sediment Control
- **CADD standard details (links) for E&S Controls and selected components of BMPs (e.g., trash racks, flow splitter, stone columns for bioretention)**
- **The Future of Stormwater (brief appendix of new concepts and technologies that are being used and could be applicable in Virginia. Examples: performance-based E&S, real-time-controls, dynamic sizing of BMPs, media blends, stormwater reuse, source controls, operational controls, continuous simulation, etc.)**

DEQ