OPEN SESSION: NONTIDAL WETLAND REHABILITATION, ENHANCEMENT AND CREATION BMP EXPERT PANEL

Welcome! The line is on mute and you will not hear us until we begin promptly at 10:00AM.

Virginia Tech — Invent the Future

Chesapeake Bay Program — Science. Restoration. Partnership.

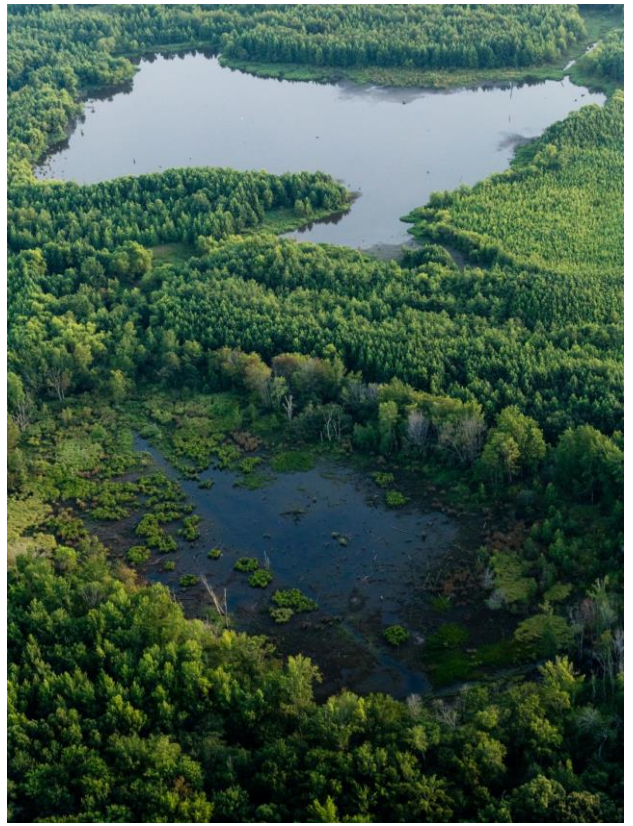
Center for Watershed Protection

All photos from Chesapeake Bay Program: https://flic.kr/ps/rYeEj

GETTING STARTED

- **If you can't hear me right now, please double-check your audio!**
- Audio is available through the conference line OR your computer
- If listening via computer: please make sure your speakers/headphones are properly connected and that your computer's audio settings are not muted
- If listening via conference line: mute your computer or else you may hear everything twice
- Here's the conference line info if you need it—
  - Dial-in: 866 299 3188
  - Code: 215 814 5170
- **PLEASE DO NOT PUT THE CONFERENCE LINE ON HOLD AT ANY TIME.** If you must take another call, hang up and dial back in.
- We are recording this session and will post the link to the CBP event calendar entry: https://goo.gl/wA2t7H

Jeremy Hanson
Virginia Tech, Panel Coordinator



LOGISTICS & GROUND RULES

For those participating via webinar:

- Tell us your name and affiliation in the chat box at this time.
  - If multiple participants, please provide the names of others in the room so we have a more accurate attendance record.
- During the presentations, please enter your questions and comments into the chat box.
  - We will monitor the chat and ask the questions for you when the speaker is finished.
  - If referencing a specific slide, please provide a slide number
- During the discussion portion of the meeting you will have opportunity to un-mute and speak (via conference line only).

MORE LOGISTICS & GROUND RULES

For those in the room:

- Is your phone on silent?
- Please raise your hand and wait to be acknowledged before speaking.
- **Please speak loudly and clearly, especially if you are seated around the edge of the room.** Our friends on the webinar want to hear you too!
- The phone can pick up side conversations around the table, so please step into the hallway to have any side conversations or answer your phone if needed.
- Please sign-in if you did not already do so
- **…Is your phone on silent???**

OVERVIEW

Welcome and Introductions

- Background about CBP and panels
- What does a BMP panel do; what is this panel's role
- Who is on the panel; who is here in the room

Stakeholder Presentations

- Steve Strano, NRCS (MD)

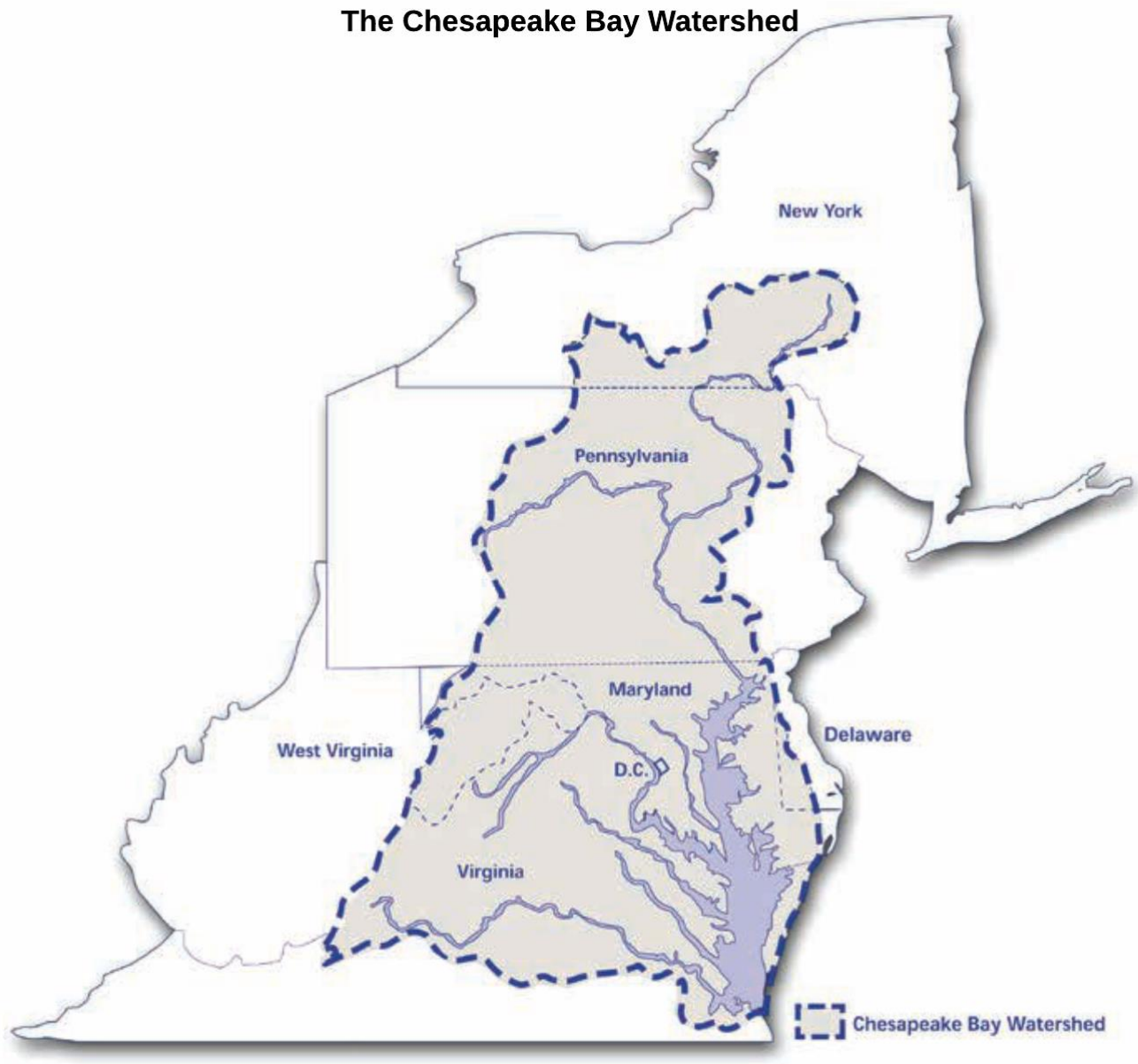
Facilitated Open Discussion

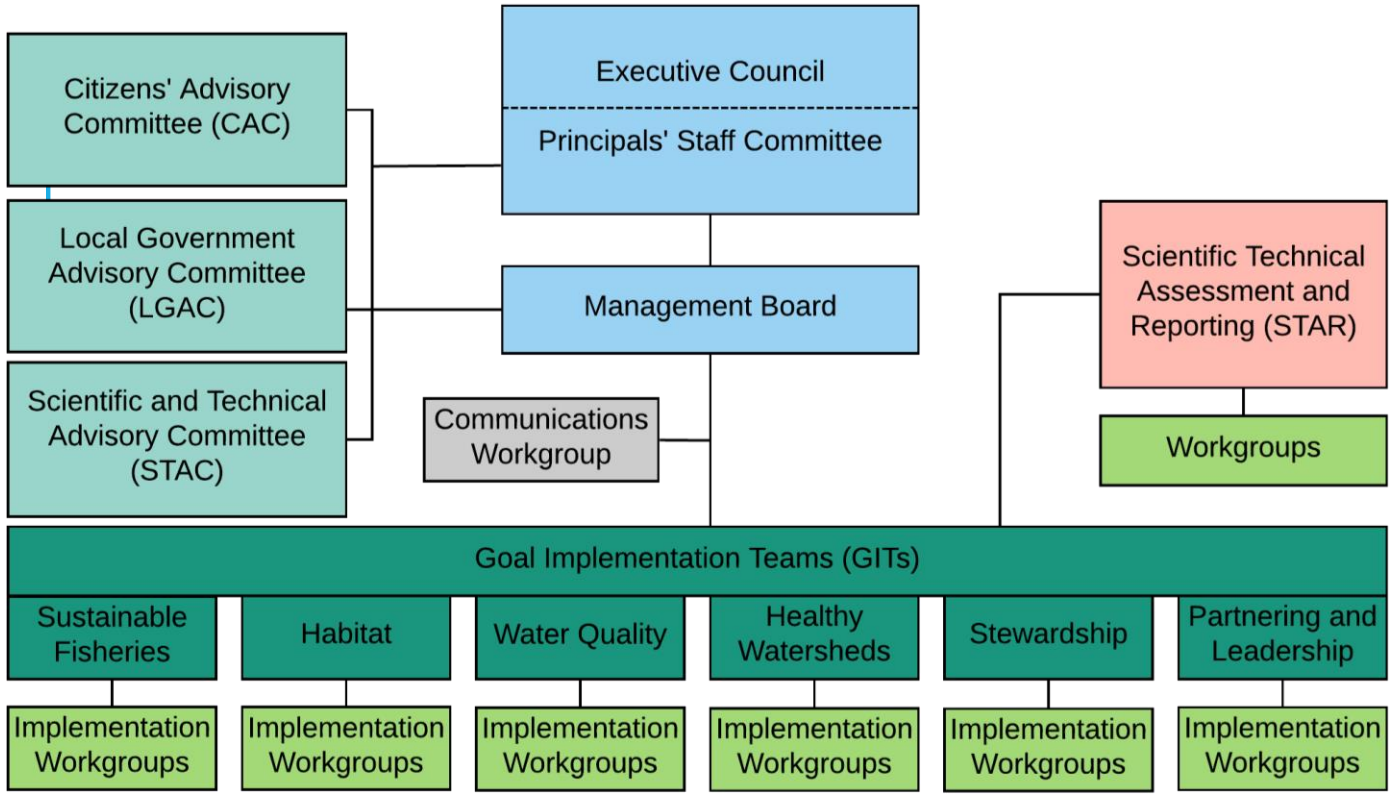
Closing thoughts, wrap up

Adjourn

CHESAPEAKE BAY PROGRAM

- The 64,000 square mile watershed encompasses the District of Columbia and parts of six states
- The Chesapeake Bay Program (CBP) is a partnership of federal, state, local, academic and other non-governmental partners to coordinate restoration of the Chesapeake Bay.
- Formed in 1983 under first Chesapeake Bay Agreement; partnership office led by EPA established through Clean Water Act amendments shortly thereafter; located in Annapolis, MD.
- Most recent Watershed Agreement signed in 2014 includes headwater states (DE, NY, WV) in addition to prior signatories (EPA for federal government, DC, MD, PA, VA and the Chesapeake Bay Commission)





Chesapeake Bay Program
Science. Restoration. Partnership.

CBP = PARTNERSHIP

- Water Quality Goal Implementation Team (WQGIT) works to evaluate and focus implementation of practices and programs that will restore water quality in the Chesapeake Bay and its Watershed to conditions that support living resources and protect human health.
  - Many workgroups for source sectors and other purposes (Ag, Urban, Watershed Technical, etc.)
  - The WQGIT developed the "BMP Protocol" (more on this soon…)
- The Habitat GIT works to restore and enhance land and water habitats—including wetlands, living shorelines, underwater grasses, forests and streams—to support key species and benefit water quality, recreational use and scenic value.
  - Includes Wetland Workgroup

WHAT IS A BMP EXPERT PANEL

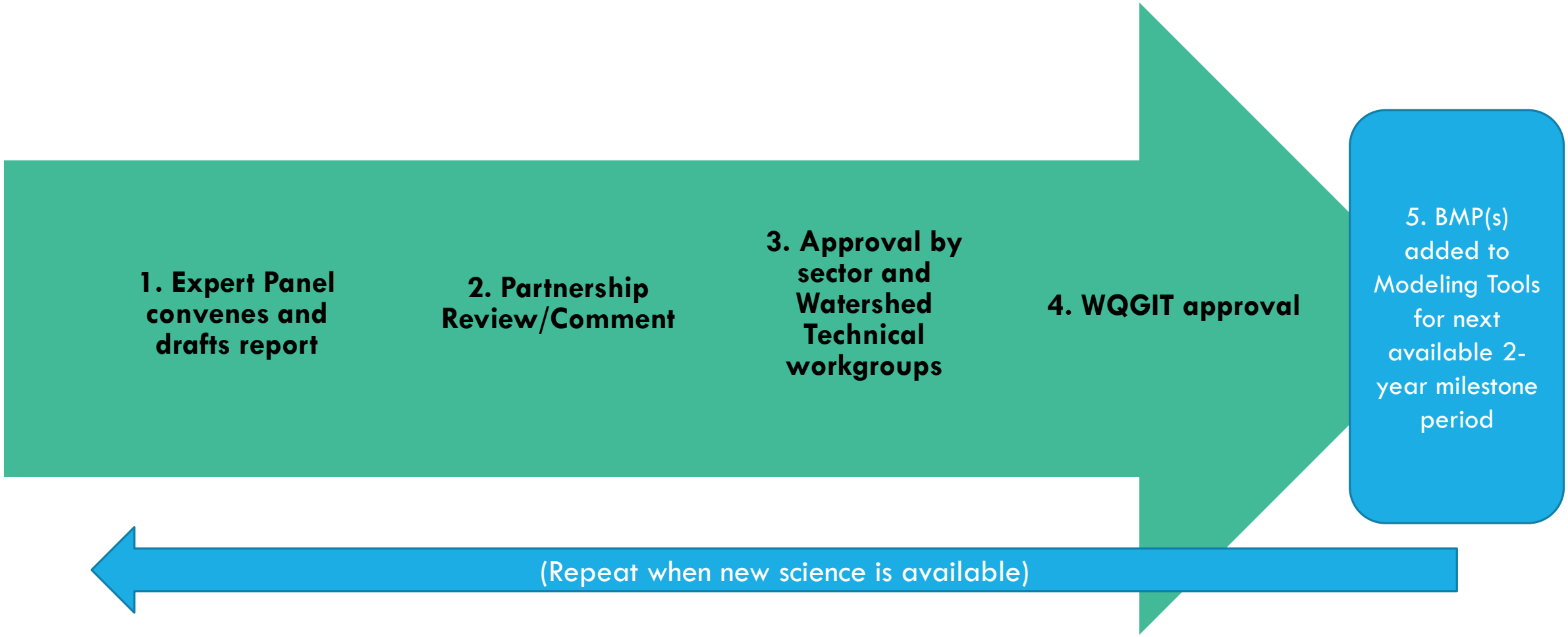
Best Management Practices (BMPs) are practices or technologies that reduce pollution loads when implemented or installed (can be structural, non-structural, programmatic)

Expert panels use the best available science and best professional judgment to inform the Chesapeake Bay Program partnership how much a BMP reduces pollution

- The panel writes a report with a lot of information in it
- They follow the BMP Protocol

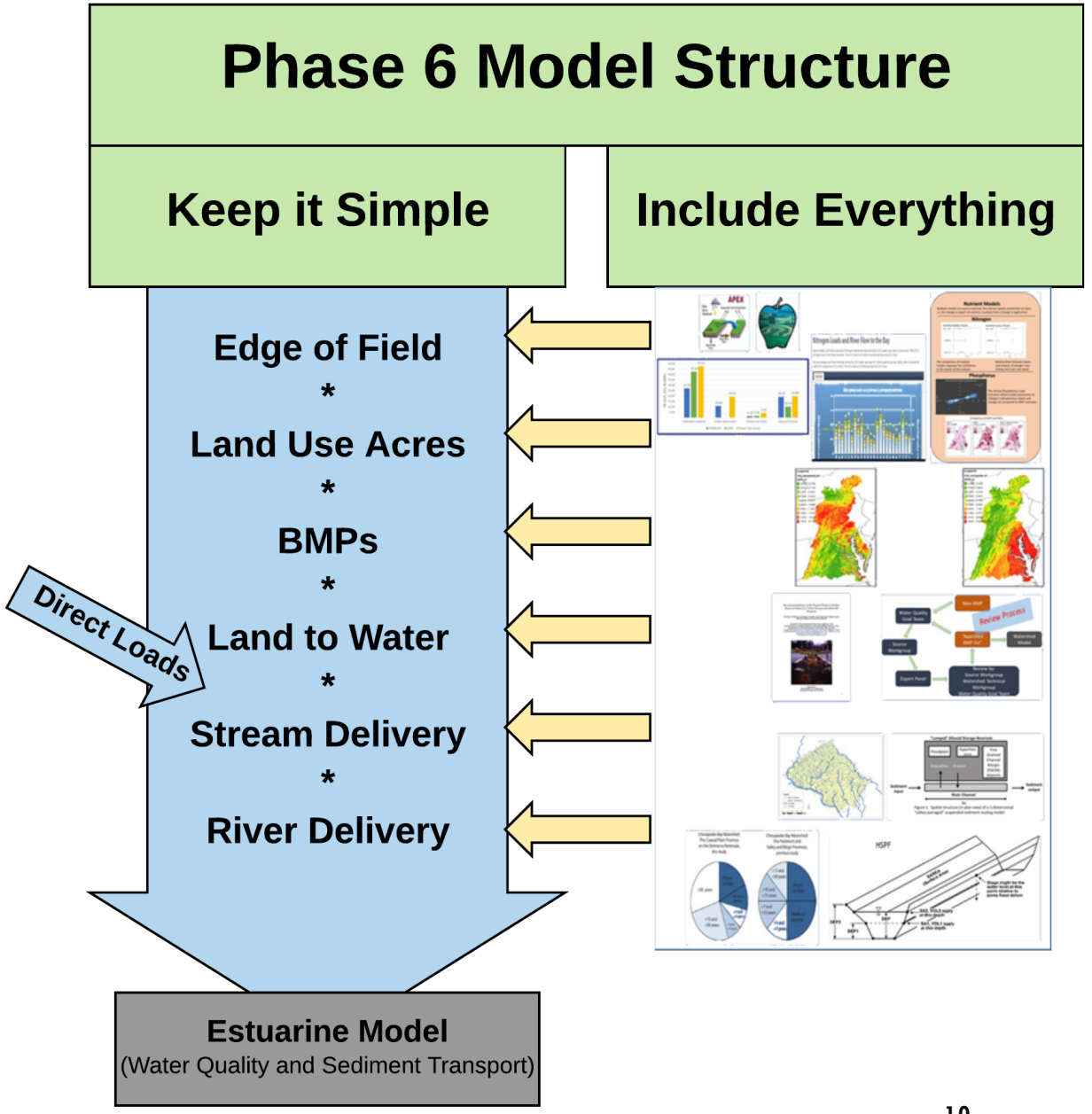
Expert panels focus on the water quality benefits – specifically, the nitrogen, phosphorus and sediment reductions – associated with BMPs. They consider ancillary effects, too.

THE "BMP PROTOCOL" PROCESS (SIMPLIFIED)



WHY?

- 2010 – Chesapeake Bay Total Maximum Daily Load (TMDL) put in place
- 2017 – "MidPoint Assessment"
  - 60% of the BMPs implemented
  - Improved modeling tools and data inputs (Phase 6 Watershed Model)
- 2025 – TMDL Goal Date
  - 100% of BMPs implemented
  - Phase 7?



WETLANDS

In the Phase 6 Watershed Model

WETLAND EXPERT PANEL (2014-2016)

- Full report approved December 2016
  - https://www.chesapeakebay.net/documents/Wetland_Expert_Panel_Report_WQGIT_approved_December_2016.pdf
- Two land uses for nontidal wetlands in Phase 6, lowest loading rates, equal to pristine Forest
  - Floodplain
  - Other
- Described four BMP categories:
  - Restoration
  - Creation*
  - Enhancement*
  - Rehabilitation*
- Defined reductions for Restoration BMP based on framework described in report; other 3 categories (*) required another panel

WETLAND EXPERT PANEL (2014-2016)

- Logic framework: Wetland Water Quality Function

F(reaction rate(k), input concentration(A))

- Rate = k[A]

Retention Efficiency ~ Reaction Rate ~ Retention Potential

- Soil carbon availability
- Water chemistry
- Temperature

Initial concentration

- Amount/rate of contamination in inflow (surface- and ground-waters)
- Portion of contaminated water that actually intersects carbon-rich substrate rather than by-passing wetland system

Physiographic Province	% Efficiency			Upland Acres Treated		Watershed Model HGMR
	TN	TP	TSS	Other Wetlands	Floodplain Wetlands	
Appalachian Plateau	42	40	31	1	2	Appalachian Plateau Siliciclastic
Appalachian Ridge and Valley				1	2	Valley and Ridge Siliciclastic
Blue Ridge				2	3	Blue Ridge
Piedmont				2	3	Piedmont Crystalline Mesozoic Lowlands
Inner Coastal Plain				4	6	Western Shore: Coastal Plain Uplands Coastal Plain Dissected Uplands
Outer Coastal Plain- Poorly Drained				1	2	Eastern Shore: Coastal Plain Uplands
Outer Coastal Plain- Well Drained				2	3	Eastern Shore: Coastal Plain Dissected Uplands
Coastal Plain Lowland				2	3	Coastal Plain Lowlands
Karst Terrain				2	3	Piedmont Carbonate Valley and Ridge Carbonate Appalachian Plateau Carbonate

"CONSTRUCTED WETLANDS"

How the previous Wetland Expert Panel (2016) defines them--

Wetlands constructed specifically, and singularly, for water quality treatment purposes of a defined source. These constructed wetlands are generally of simple hydrology, limited inflow and outflow, and typically vegetated with herbaceous plants only, specifically monocultures of species known for high rates of pollutant uptake, such as cattails (*Typha* spp.) and common reed (*Phragmites*)…[WEP 2016, Box 2 on page 54]

RELATED CBP PRACTICES

Practices with existing CBP definitions, outside the scope of the Wetlands BMP Panel:

- Wet Ponds and Wetlands (urban stormwater)
  - Urban stormwater practice; wet ponds and wetlands also considered "stormwater treatment" under protocols for performance standards and retrofits
- Floating Treatment Wetlands (urban stormwater)
- Stream Restoration (urban and non-urban)
- Shoreline Management (urban and non-urban)
  - Includes protocols for living shorelines (vegetated or hybrid)
- Forest Buffers (agricultural)

CURRENT BMP PANEL (2017-ONGOING)

- Membership approved by Wetland Workgroup in September 2017
- Formed to evaluate remaining three BMPs:
  - Rehabilitation
  - Enhancement
  - Creation
- Convened for first call in November 2017
- Goal to deliver draft report within 12 months; additional 3+ months typically needed for partnership review, comment and approval

Panel membership and support roster

Name	Affiliation	Role
Neely L. Law, PhD	**The Center for Watershed Protection (CWP)**	**Panel Chair**
Kathleen Boomer, PhD	**The Nature Conservancy**	**Panel Member**
Jeanne Christie	**Association of State Wetland Managers**	**Panel Member**
Greg Noe, PhD	**U.S. Geological Survey**	**Panel Member**
Erin MacLaughlin	**Maryland DNR**	**Panel Member**
Solange Filoso, PhD	**Chesapeake Biological Lab**	**Panel Member**
Denice Wardrop, PhD, PE	**Penn State**	**Panel Member**
Scott Jackson	**University of Massachusetts**	**Panel Member**
Steve Strano	**NRCS**	**Panel Member**
Rob Roseen, PhD, PE, D.WRE	**Waterstone Engineering**	**Panel Member**
Ralph Spagnolo	**EPA Region 3**	**Panel Member**
Jeremy Hanson	*Virginia Tech*	*Panel Coordinator*
Brian Benham	*Virginia Tech*	*VT Principal Investigator*
Lisa Fraley-McNeal	*CWP*	*Support*
Bill Stack	*CWP*	*Support*
Deb Caraco	*CWP*	*Support*
Jeff Sweeney	*EPA CBPO*	*CBPO Modeling Team and Watershed Technical Workgroup rep*
Carrie Travers	*EPA Region 3*	*EPA Region 3 rep*

QUESTIONS?

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PRESENTATIONS

Q&A and open discussion