Summary of Chesapeake Bay Program PSC Decisions

December 19-20, 2017, Cambridge, MD

March 2, 2018, Baltimore MD

Chesapeake Bay 2017 Midpoint Assessment— Policy Issues for Partnership Decisions

Chesapeake Bay Program Principals' Staff Committee
December 19, 2017

Day 1 Requested Policy Decisions

1. Adoption of the **Phase 6 suite of modeling tools** for finalizing the draft Phase III planning targets and for management application in the Phase III WIPs and two-year milestones through 2025

2. Approval of the proposed **Bay's assimilative capacity**

3. Approval of the **process for the 4-month Partnership review** of the draft Phase III WIP planning targets, including how special cases are addressed

4. Base Phase III WIP development on **2025 current zoning conditions**

Day 2 Requested Policy Decisions

1) Approval of the approach to account for the additional loads delivered to the Bay due to the **Conowingo infill**

2) Approval of how to factor **climate change** into the Phase III WIPs

3) Approval of the **draft Phase III Planning Targets** as the starting point for the 4-month review process

What's Changed, the Implications, and Our Improved Models

Lee Currey, MDE, CBP Modeling Workgroup Co-Chair

What's Changed, Why, and Implications

<u>A lot</u> has changed since 2010 and our Phase I and Phase II WIPs

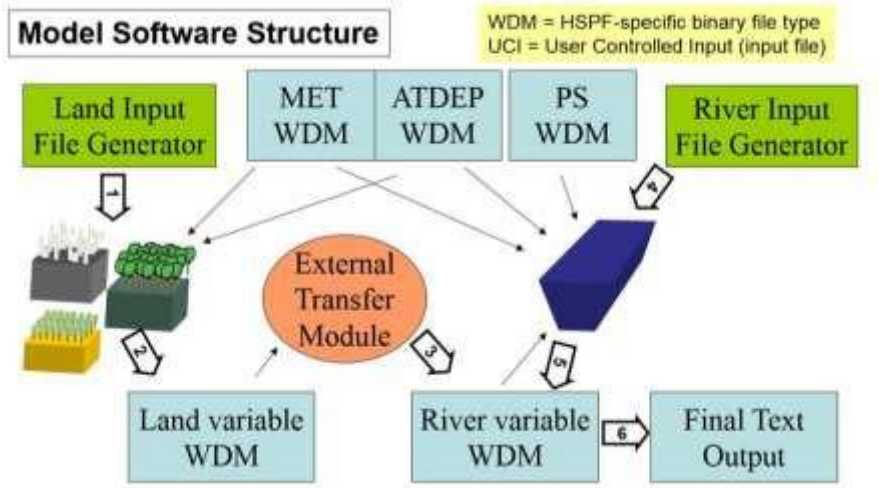
- Much improved modeling and other decision support tools **(incl. new Phase 6 Watershed Model)**
- High resolution land cover data for entire watershed **(from 30-m to 1-m resolution)**
- Hundreds more BMPs available for crediting
- Significant data gathered from local agricultural and municipality partners incorporated into our models and other decision support tools

Improved Partnership Models

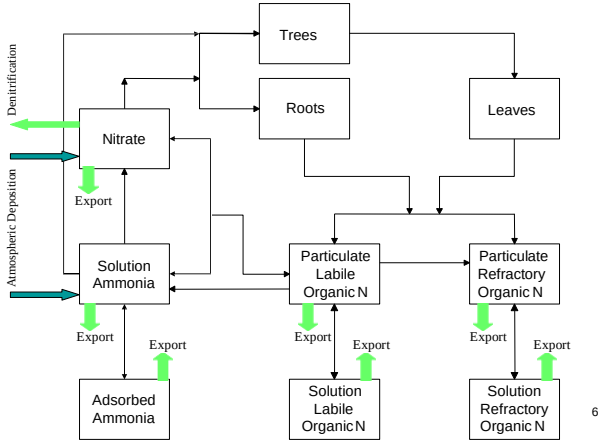
- 5 years of collaborative Partnership decision-making on every aspect of every model
- Multiple STAC-sponsored technical workshops from soil phosphorus to Conowingo
- Independent scientific peer reviews of every Partnership model
- Comprehensive fatal flaw review and issue resolution by the partners

Phase 6 Bay Watershed Model

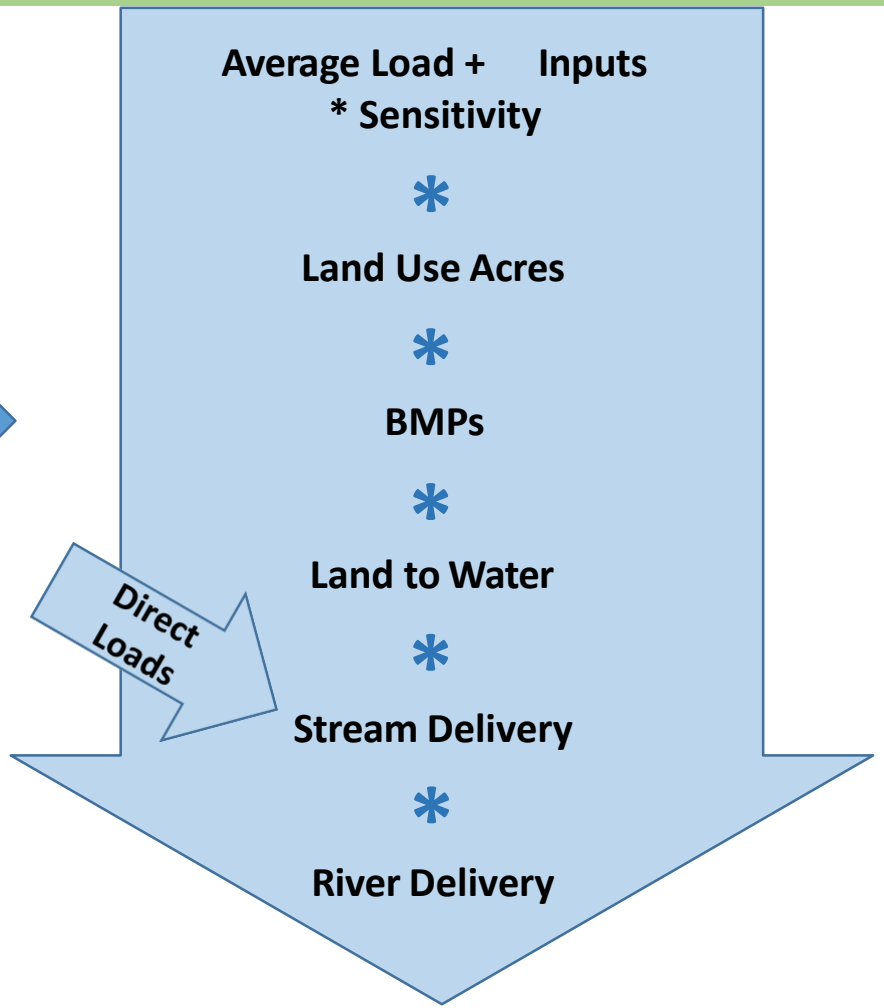
Prior Bay Watershed Models



Each submodel has a complex hydrologic or nutrient cycling structure



Phase 6 Watershed Model



Summary of Decisions and Actions[1]

Partnership's Final Phase 6 Suite of Modeling Tools: What's Changed, the Implications, and Our Improved Models

DECISION: The Principals' Staff Committee adopted the Partnership's Phase 6 suite of modeling tools for finalizing the Phase III planning targets and for management application in the Phase III WIPs and two-year milestones through 2025.

Discussion of assimilative capacity and Phase III WIP planning targets methodology

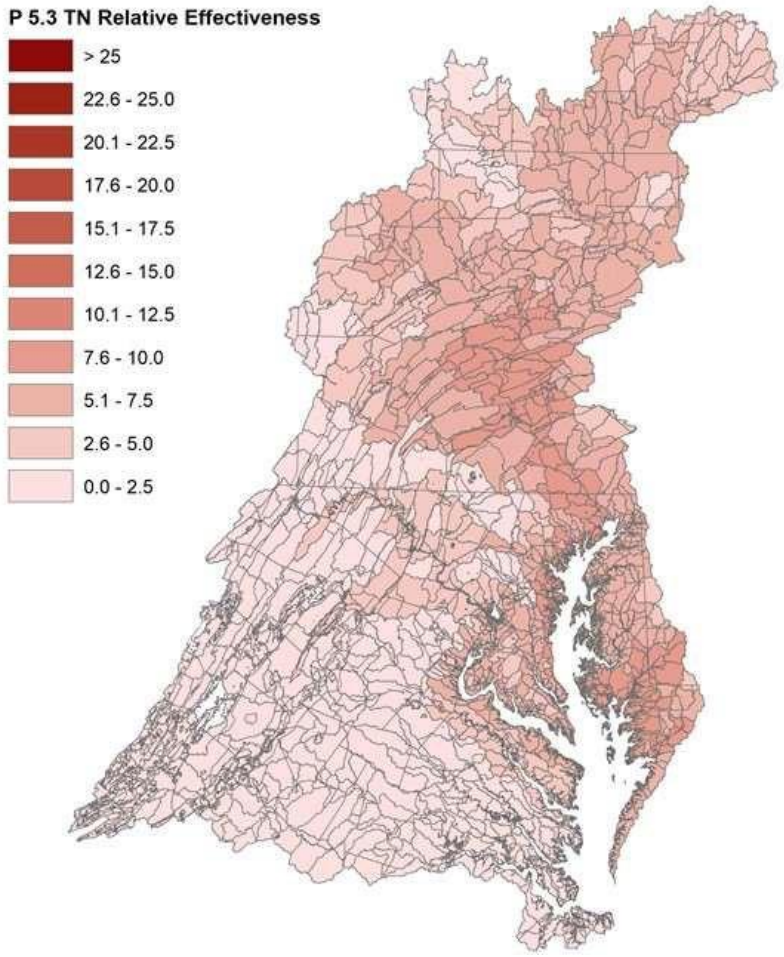
Three Partnership Principals

- Allocated loads must result in achievement of the states' Bay water quality standards
- Major river basins that contribute the most to Bay water quality problems must do the most to resolve those problems
- All tracked and reported reductions in loads are credited toward achieving assigned loads

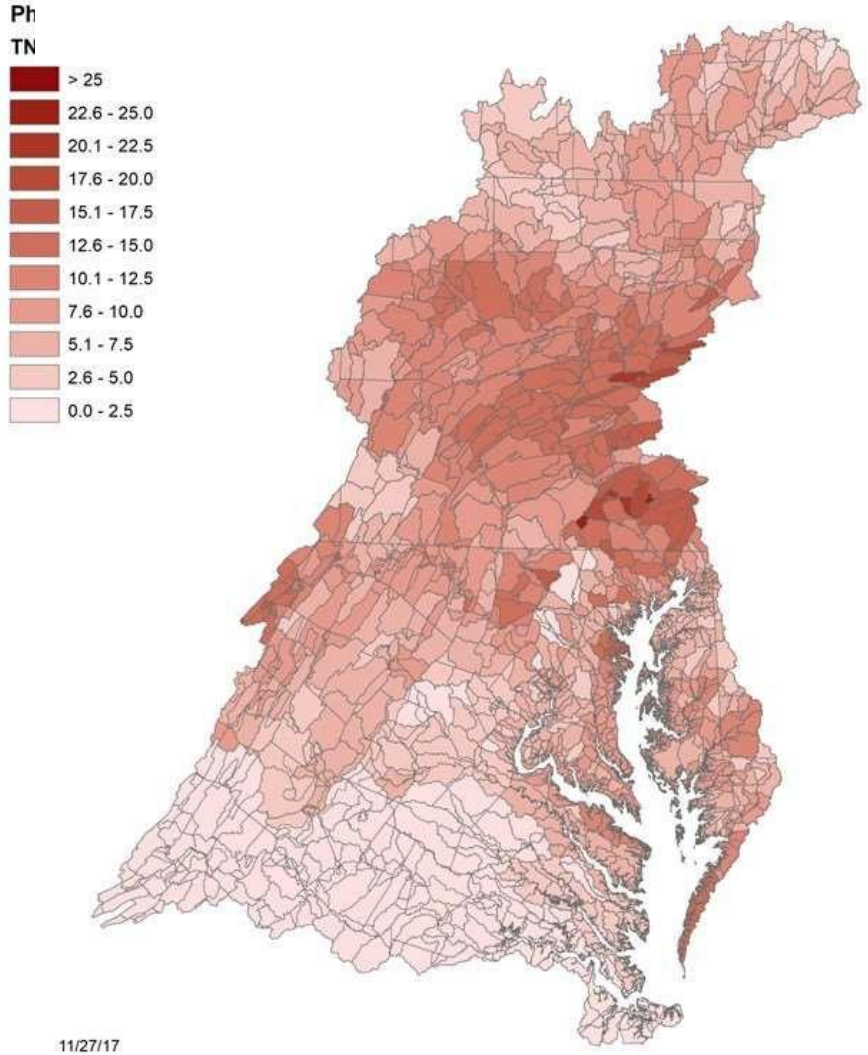
Source: 2010 Chesapeake Bay TMDL

More Impact, Do More

Phase 5 Nitrogen

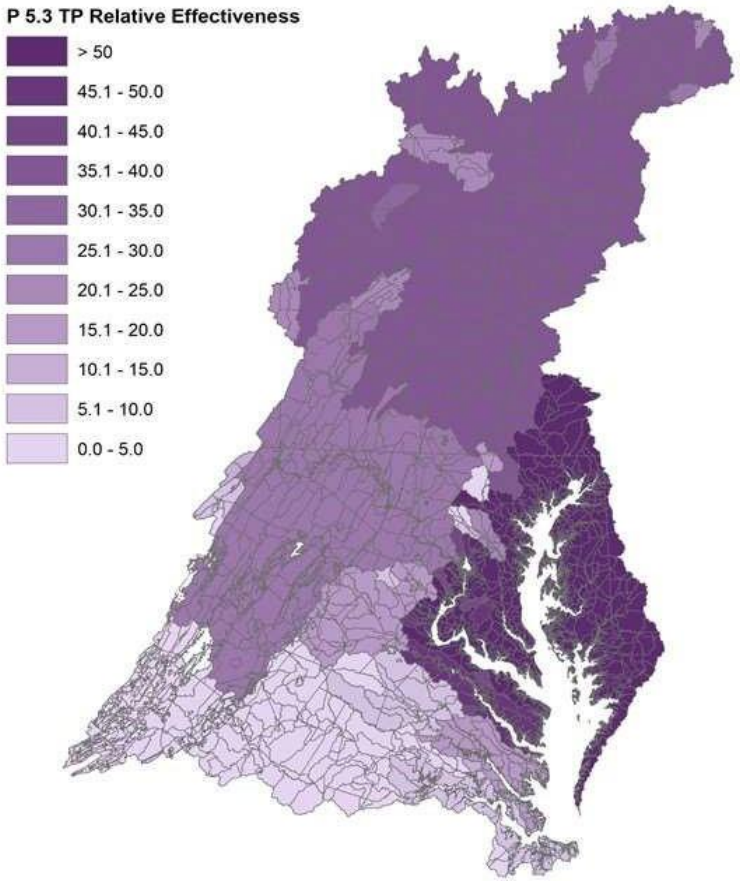


Phase 6 Nitrogen

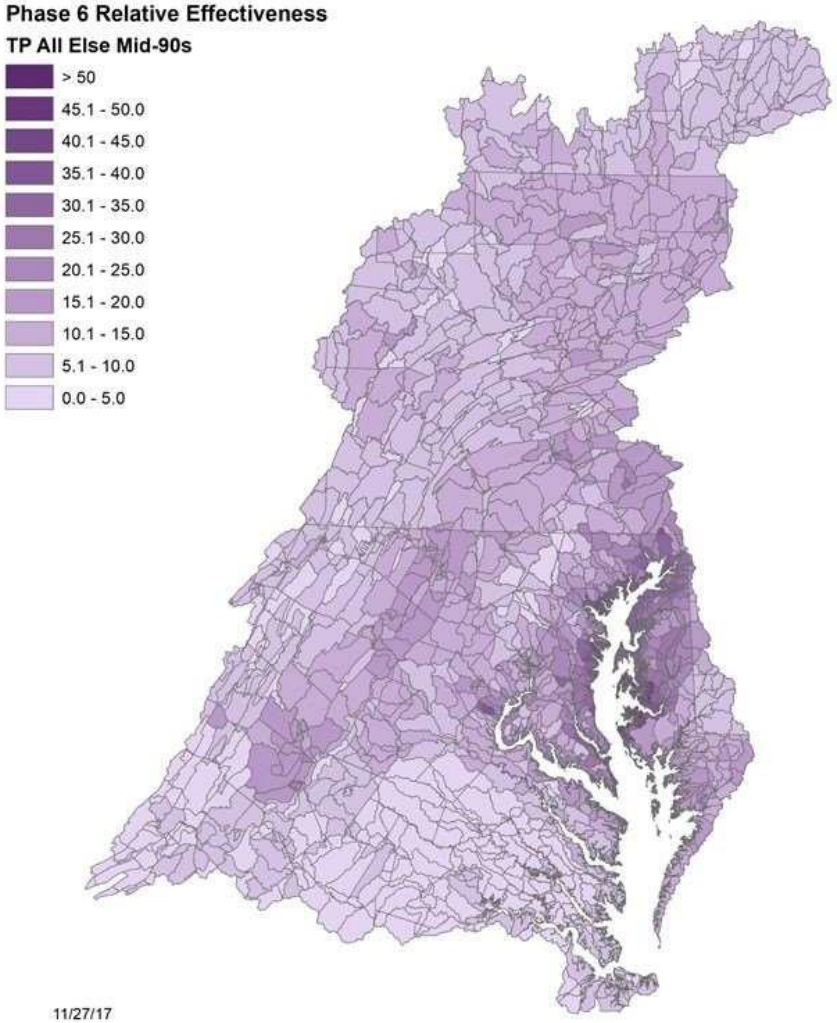


More Impact, Do More

Phase 5 Phosphorus



Phase 6 Phosphorus



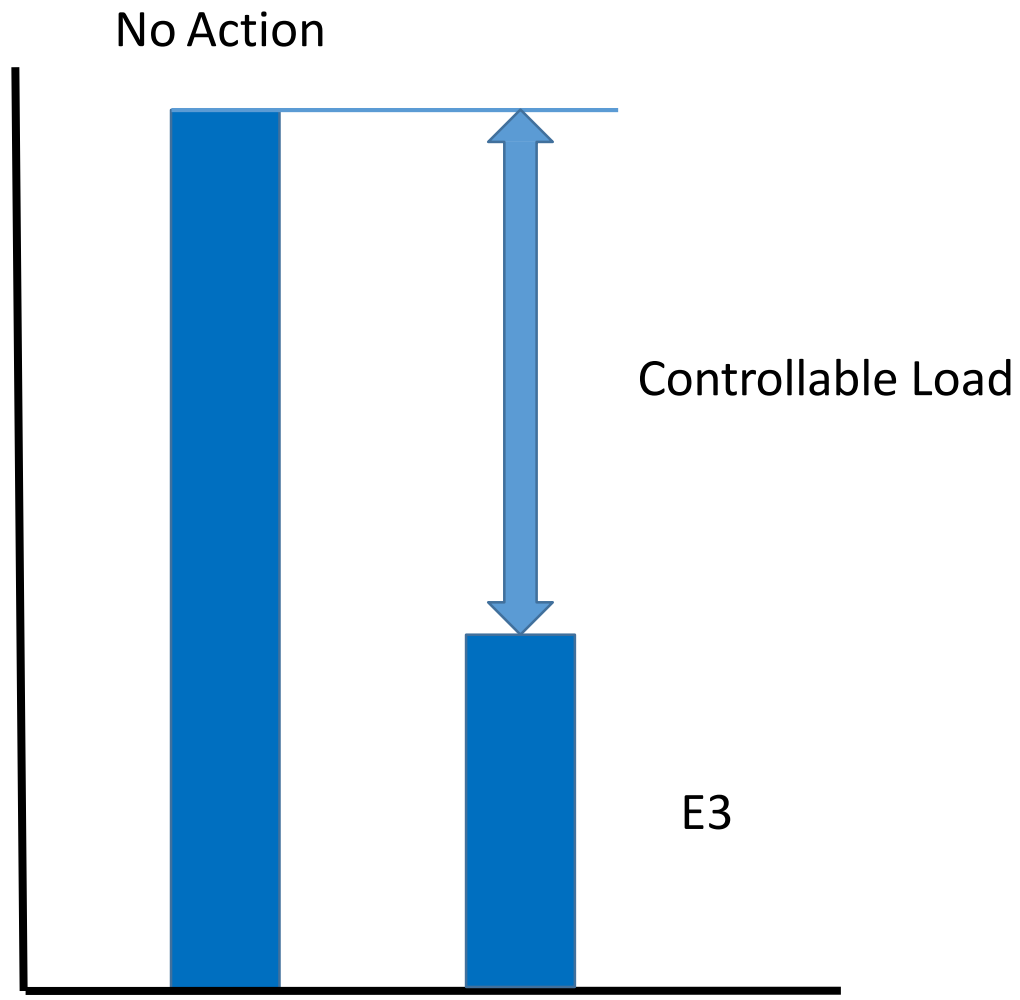
Defining the Controllable Load

No Action:

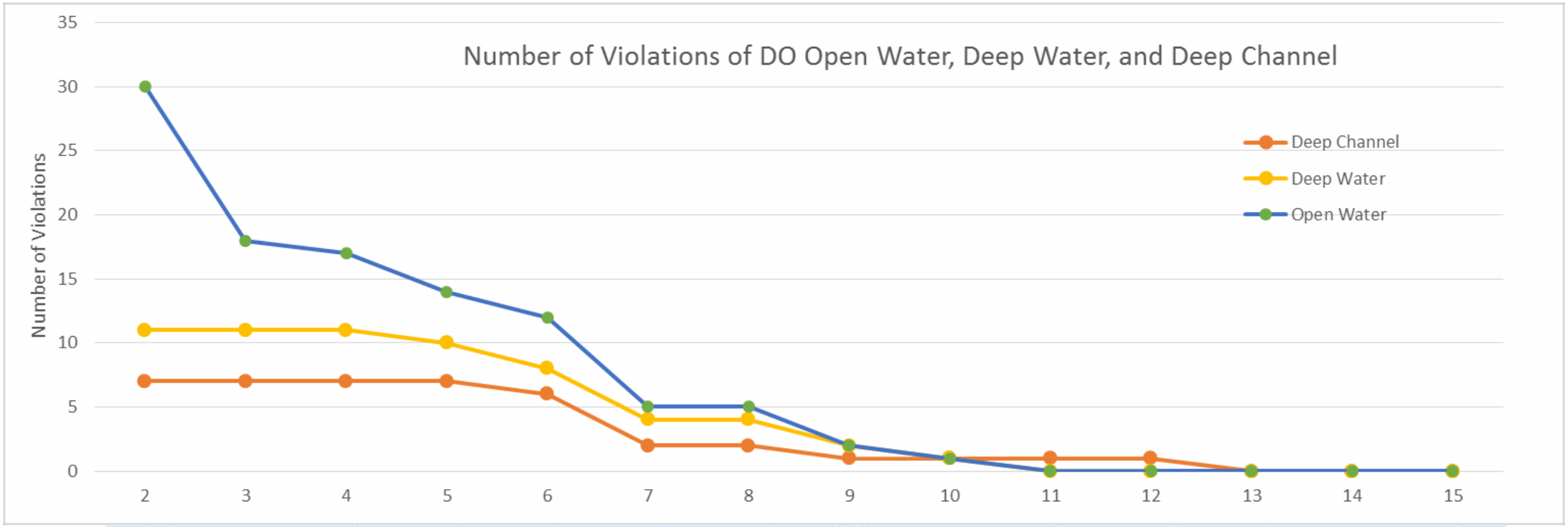
- Watershed conditions with minimal to no controls on load
- Wastewater at primary treatment

E3 or "Everything by Everyone, Everywhere":

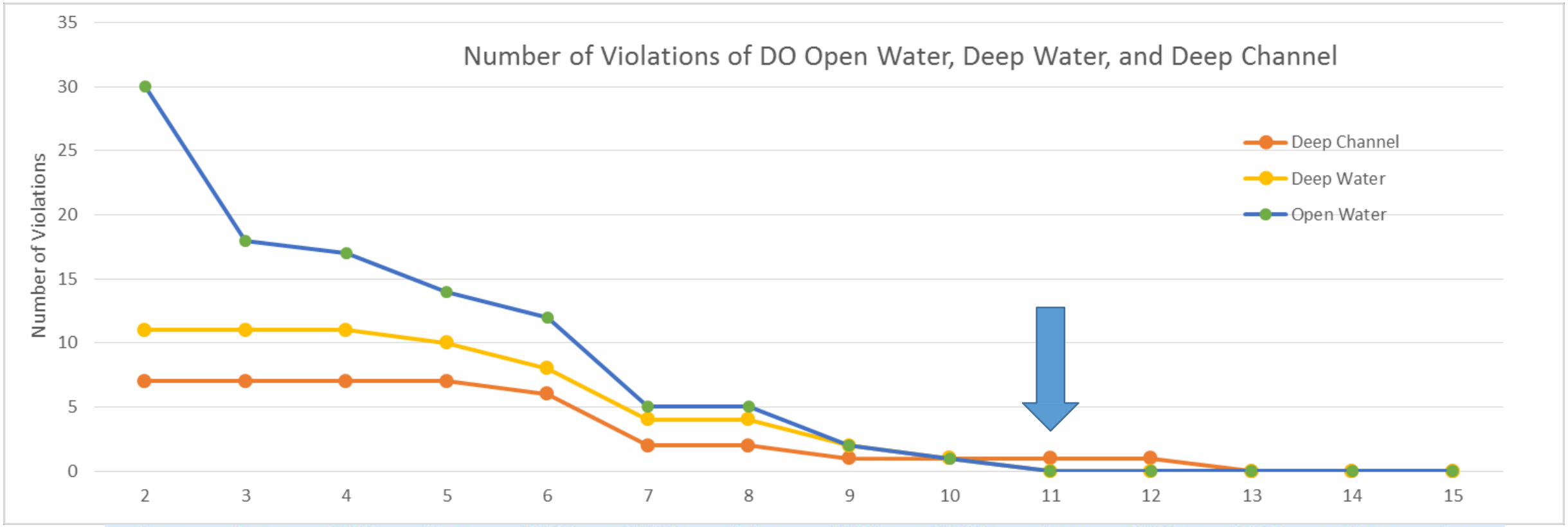
- Watershed conditions with maximum controls on loads, regardless of cost
- Wastewater at high level of nutrient control
  - 3mg/l TN, 0.1 mg/l TP



Determining the Bay's Ability to Absorb Pollutants



Here's Where We Want to Get to



Rationale for Pollutant Loads Bay Can Absorb

- Clear monitoring-based evidence of reductions on volumes of low/no oxygen in deeper waters observed in Bay and tidal tributaries

- At **195 million lbs. nitrogen and 13.7 million lbs. phosphorus**, we reach:
  - Loading levels where all segments' designated uses, except CB4 deep-channel, come into attainment

  - Point of diminishing returns for the increased level of reductions approaching E3

WQGIT Recommendations to the PSC

Recommends establishing the Bay's assimilative capacity as 195 million pounds of nitrogen and 13.7 million pounds of phosphorus

Recommends supporting necessary adjustments to Maryland's water quality standards regulations' restoration variances (subject to EPA approval) in order to meet the assimilative capacity for nitrogen and phosphorus

Recommends the development of Partnership communication messages for the public over the next four months, in time for the release of the final Phase III WIP planning targets in May 2018

Today's Requested Policy Decisions

Approval of the Bay's assimilative capacity as 195 million pounds of nitrogen and 13.7 million pounds of phosphorus

Support the necessary adjustments to Maryland's restoration variances

Approval for the development of the Partnership's public communication messages

Accounting for Growth Equitably Across Jurisdictions

1. **Watershed population is increasing by over 1 million persons/decade**
   - Population change from 2010 -2025 = 2.0 million persons

2. **Chesapeake Bay Land Change Model (CBLCM) estimates land use and wastewater impacts of future population growth.**
   - Parameterized uniquely for every state/county/city in the Bay watershed.
   - Accounts for uncertainty at sub-county scales.

3. **Partnership agreement on future land use scenarios reflecting a range of planning and conservation efforts.**

4. **Developing the WIPs on 2025 land use conditions enable the use of planning and conservation efforts to help "account for growth" for the TMDL.**

Nitrogen and Phosphorus Exchanges

- Science supports exchanges in nitrogen and phosphorus load reductions

- Better science has resulted in changes to our existing exchange ratios
  - **Better simulation of observed nutrient limitation in the Bay**
  - **Inclusion of new P sources from Conowingo and Shoreline makes each pound of P less important**

	Phase 5	Phase 6
Nitrogen for Phosphorus:	5	1.34 – 3.84
Phosphorus for Nitrogen:	0.067	0.26 – 0.75

WQGIT & Modeling Workgroup Recommendations: Nitrogen

Jurisdiction	1985 Baseline	2013 Progress	Growth in Load to 2025	Phase III Planning Target
NY	18.71	15.44	-0.74	10.59
PA	122.41	99.28	1.66	73.18
MD	83.56	55.89	1.52	45.30
WV	8.73	8.06	-0.02	6.35
DC	6.48	1.75	0.00	2.43
DE	6.97	6.59	0.48	4.59
VA	84.29	61.53	1.09	55.82
Basinwide	331.15	248.54	4.00	198.25

*Units: millions of pounds

WQGIT & Modeling Workgroup Recommendations: Phosphorus

Jurisdiction	1985 Baseline	2013 Progress	Growth in Load to 2025	Phase III Planning Target
NY	1.198	0.710	-0.005	0.506
PA	6.115	3.696	0.044	3.073
MD	7.419	3.919	-0.015	3.604
WV	0.793	0.560	-0.017	0.456
DC	0.090	0.062	0.000	0.130
DE	0.225	0.115	0.007	0.120
VA	13.545	6.345	0.140	6.186
Basinwide	29.384	15.408	0.154	14.073

*Units: millions of pounds

Accounting for Growth Using 2025 Growth Projections

DECISION: Recognizing the projected 2025 growth loads presented during the December 19-20, 2017 meeting are draft and still subject to further review by the jurisdictions, the Principals' Staff Committee approved the Water Quality Goal Implementation Team's recommended use of 2025 projected conditions (based on the current zoning scenario) to account for growth in the development and implementation of the jurisdictions' Phase III Watershed Implementation Plans and two-year milestones.

DECISION: The Principals' Staff Committee approved the Water Quality Goal Implementation Team's proposed approach to continued Partnership accounting for growth into the future by:

- Updating the Partnership's projection of future growth every two years;
- Factoring these updated future projections into next round of the jurisdictions' two-year milestones;
- Factoring in future (every 4 years) updates to the Partnership's high resolution land use/cover data across the entire watershed; and
- Ensuring local partner review of the future growth forecasts with each 2-year update.

Allowing for Special Cases

- Previously agreed to consider special cases put forth by jurisdictions
- Consideration of special cases factored into four-month review process
- CBPO will provide support to jurisdictions considering special cases
- Final decisions on allowance of special cases will be made by the PSC in April 2018

PSC Approved Schedule

- **December 19-20, 2017**: PSC 2-day retreat and decision making
- **December 22, 2017**: Release of draft Phase III WIP planning targets
- **December 22, 2017 – April 20, 2018**: Partnership's review of the draft Phase III WIP planning targets, including consideration of special case requests
- **Late April/Early May 2018**: PSC approval of the final Phase III WIP planning targets with any agreed-to special cases
- **May 7, 2018**: Release of the final Phase III WIP planning targets

During the 4-Month Review Period

- Analyze level of effort to achieve the draft planning targets
- Evaluate effects of accounting for growth, Conowingo infill, and climate change on level of effort
- Assess the need for exchanges of nitrogen and/or phosphorus loads between a jurisdiction's major river basins
- Assess the need for exchanges of nitrogen for phosphorus or phosphorus for nitrogen within a jurisdiction's major river basins
- Determine if any special cases are needed

Possible Changes Between Now and April 2018

- Requests for special conditions
- Conducting basin to basin exchanges of N, P, and sediment loads
- Conducting significant N for P and P for N exchanges

What are Special Cases?

Special cases are requests by the jurisdictions for any:

1) Changes to their draft Phase III WIP planning targets

2) Changes to the methodology used to establish the draft Phase III WIP planning targets

Who Can Submit a Special Case Request?

- Any one of the seven Bay watershed jurisdictions to the CBP Water Quality Goal Implementation Team (WQGIT) Chair and the CBP WQGIT Coordinator

Process for Addressing Special Cases

1. **CBPO staff will work with the jurisdictions to address and identify potential resolutions for special cases during the 4-month review period**

2. **For transparency, updates will be provided to the WQGIT during each conference call during the 4-month review period communicating:**

   - Who has submitted special case requests
   - Proposed options for resolving the special case request(s)

3. **PSC will approve any special case requests submitted to the Partnership for review and consideration**

Options for Resolving Special Cases

- In the event the PSC cannot reach consensus on the resolution of special case requests, the PSC can either:

    1. Resolve the issue by a supermajority vote, per the Partnership's governance procedures, or

    2. Request that EPA make the final decision

Draft Phase III WIP Planning Targets – Part II

DECSION: The Principals' Staff Committee approved setting the Chesapeake Bay's assimilative capacity at a higher level, as needed, of nitrogen and phosphorus above 195 and 13.7 million pounds, respectively, which will still achieve Delaware, the District of Columbia, Maryland and Virginia's* applicable Chesapeake Bay water quality standards, including a 6 percent restoration variance for Maryland's CB4 deep channel segment.

*Excludes Virginia's tidal James River mainstem chlorophyll-a water quality standards

Provisional increase in Baywide targets from:

- 195 to 201.25 million pounds TN
- 13.7 to 14.17 million pounds TP

Draft Phase III Planning Targets*: Nitrogen

Jurisdiction	1985 Baseline	2013 Progress	Phase III Planning Target
NY	18.71	15.44	11.59
PA	122.41	99.28	73.18
MD	83.56	55.89	45.30
WV	8.73	8.06	8.35
DC	6.48	1.75	2.43
DE	6.97	6.59	4.59
VA	84.29	61.53	55.82
Basinwide	331.15	248.54	201.25

Units: millions of pounds

*Draft planning targets are subject to change as a result of the Partnership's review period to be completed in May 2018

Draft Phase III Planning Targets*: Phosphorus

Jurisdiction	1985 Baseline	2013 Progress	Phase III Planning Target
NY	1.198	0.710	0.606
PA	6.115	3.696	3.073
MD	7.419	3.919	3.604
WV	0.793	0.560	0.456
DC	0.090	0.062	0.130
DE	0.225	0.115	0.120
VA	13.545	6.345	6.186
Basinwide	29.384	15.408	14.173

Units: millions of pounds

*Draft planning targets are subject to change as a result of the Partnership's review period to be completed in May 2018

ACTION: Based on the revised draft Phase III WIP planning targets that provide an additional one million pounds of nitrogen and 100,000 pounds of phosphorus to New York, and an additional two million pounds of nitrogen to West Virginia, EPA, in coordination with the Partnership's Water Quality Goal Implementation Team and Modeling Workgroup, will conduct further analyses to determine the source(s) of those additional nitrogen and phosphorus pounds, and any impacts to the Bay's assimilative capacity.

ACTION: By the end of January 2018, EPA will present to the Principals' Staff Committee the following results:

- Additional scenario runs to determine the Bay's assimilative capacity based on the revised draft Phase III WIP planning targets (201.25 million pounds of nitrogen and 14.173 million pounds of phosphorus) listed below to determine what additional pounds of nitrogen and phosphorus may be available while still achieving a 6 percent restoration variance in Maryland's CB4 deep channel segment; and

- Determination if any additional pounds of nitrogen from implementation of Clean Air Act regulations are available.

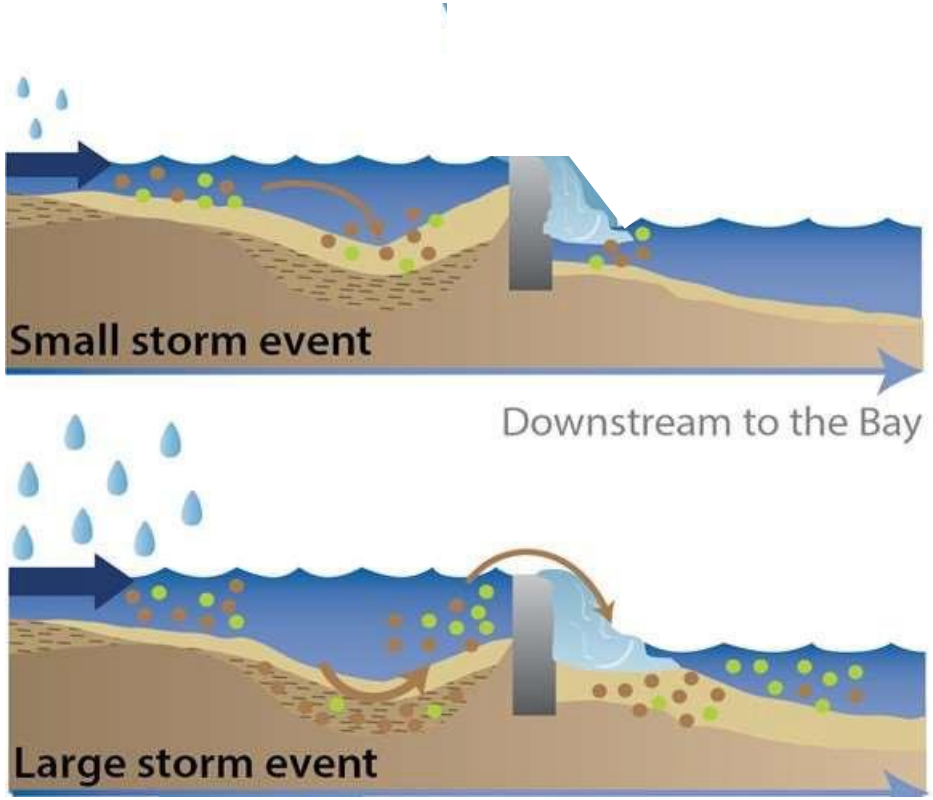
ACTION: The Principals' Staff Committee will convene in mid-February to determine the Bay's assimilative capacity that will reflect agreed-upon results from these additional analyses.

Discussion at March 2 meeting led to provisional resolution on how to handle the special cases issue. Will discuss this after finishing summary of December 19-20 meeting.

Conowingo Dam Infill: How Much, Who, How, and By When

Lee Currey, MDE, CBP Modeling Workgroup Co-Chair

Estimated Loads to the Bay with Conowingo Dam and Reservoir at Infill Conditions



- Almost all of the nutrients are from upstream sources
- Much of the nutrients are biologically available to algae when they enter tidal waters

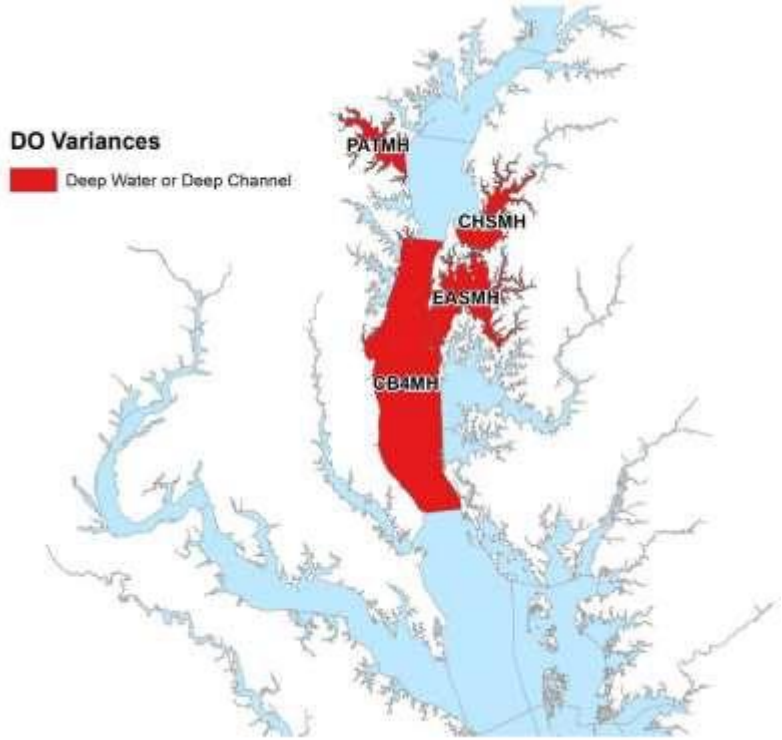
- Some of the nutrients are scoured from the bottom sediments behind the dam
- Much of these scoured nutrients are <u>not</u> biologically available to algae when they enter tidal waters

Therefore, the determination of nutrient loads to be reduced to account for Conowingo infill must factor in the type of nutrients and the timing of delivery

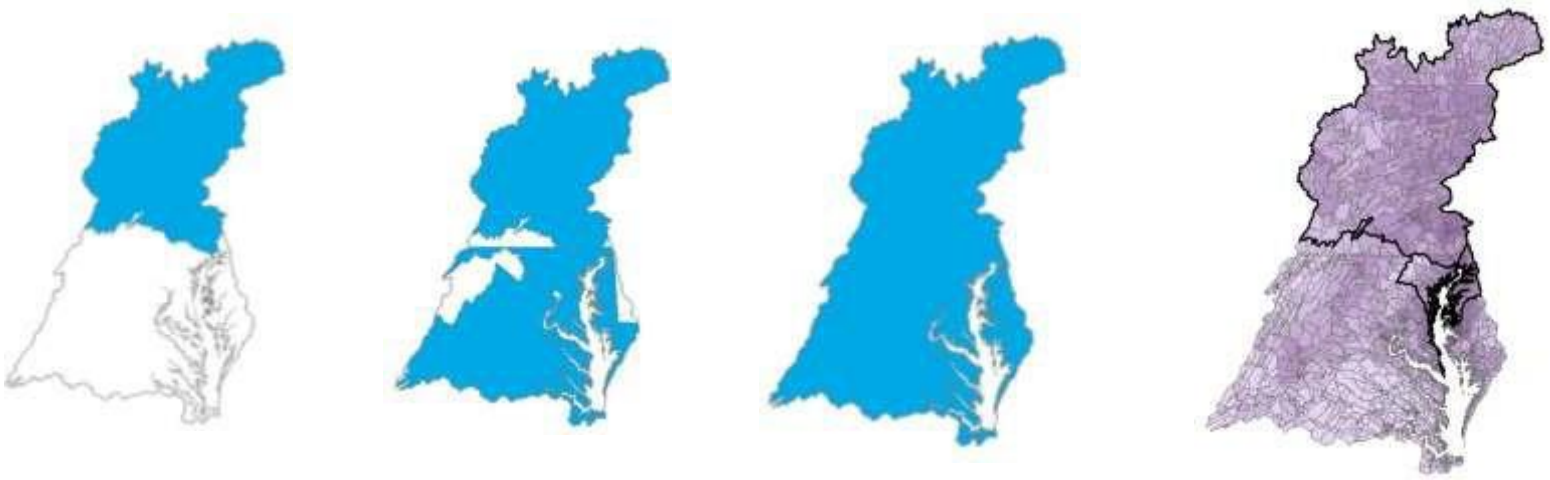
Estimated Loads to the Bay with Conowingo Dam and Reservoir at Infill Conditions

Additional **Nitrogen** Loads to be Addressed:
6 million pounds

Additional **Phosphorus** Loads to be Addressed:
0.26 million pounds



Original Options: How to Offset the Additional Loads Due to Conowingo Dam Infill



Who?		Allocation equity rules used in the Bay TMDL	Assign additional load as local planning goal
When?	By 2025	Post-2025 with agreed-upon date	Beyond 2025 – no future date identified

Estimated Additional Nitrogen Reductions Required Under the Four Options

Jurisdiction	Susquehanna Only	Susquehanna + Effective Basins	Susquehanna + MD and VA	Entire Watershed
NY	5.4%	4.7%	3.4%	3.0%
PA	7.3%	6.4%	4.6%	4.5%
MD	0.3%	1.7%	4.3%	3.9%
WV	0.0%	0.0%	0.0%	3.0%
DC	0.0%	0.0%	0.0%	0.2%
DE	0.0%	0.0%	0.0%	6.9%
VA	0.0%	0.2%	2.8%	2.5%

Estimated Additional Phosphorus Reductions Required Under the Four Options

Jurisdiction	Susquehanna Only	Susquehanna + Effective Basins	Susquehanna + MD and VA	Entire Watershed
NY	5.3%	4.0%	2.5%	2.3%
PA	7.5%	5.7%	3.5%	3.7%
MD	0.1%	1.9%	2.8%	2.6%
WV	0.0%	0.0%	0.0%	2.9%
DC	0.0%	0.0%	0.0%	0.6%
DE	0.0%	0.0%	0.0%	4.1%
VA	0.0%	0.0%	2.6%	2.4%

WQGIT Recommendations to the PSC

- WQGIT-recommended approach recognizes that all jurisdictions have benefited from the Conowingo reservoir and its nutrient and sediment pollution trapping and that there is a less costly approach than assignment of allocations that achieves water quality objectives and does not require reductions by all jurisdictions
  - **Develop a separate implementation plan, which is a Partnership collaboration to address the additional reductions needed as a result of infill**
    - Address impacts in a way that makes the most scientific and economic sense,
    - and supports those that can reduce pollution more effectively

WQGIT Recommendations to the PSC

- WQGIT-recommended approach recognizes that all jurisdictions have benefited from the Conowingo reservoir and its nutrient and sediment pollution trapping and that there is a less costly approach than assignment of allocations that achieves water quality objectives and does not require reductions by all jurisdictions
  - **Create approach that pools resources**
    - Pooled resources, which may include funding, technical assistance, advocacy, intellectual property, etc., from all jurisdictions would be managed (both in terms of allocation of funds and verification / tracking of reductions) by a third party under Partnership oversight
    - Pooling of resources and implementation would be phased in over time as
    - appropriate

WQGIT Recommendations to the PSC

- **Necessary steps to implement proposed approach**
  - Reach Partnership consensus on the approach
  - PSC to send letter to Exelon
  - All jurisdictions and other partners develop the plan
  - Determine the role of Exelon in plan implementation based on Maryland's decisions regarding 401 certification
  - Finalize plan and determine gaps and contingencies
  - Begin plan implementation

WQGIT Recommendations to the PSC

- **Necessary steps to implement proposed approach (Continued)**
  - Evaluate, as is currently done with the milestones, the effectiveness and progress of the plan on an annual basis
  - Reevaluate the plan and make any necessary adjustments based on jurisdictional WIP implementation and any other factors that might influence plan success

- **Need to develop timelines to develop and implement the plan (by 2025?)**
  - Includes conducting a gap analysis to determine if the plan could be fully implemented by 2025

- **Conowingo Plan development likely to occur concurrently with Phase III WIP development**

Factoring Climate Change into the Jurisdictions' Phase III WIPs

Mark Bennett, USGS, CBP Climate Resiliency Workgroup Chair

PSC-Approved Guiding Principles Phase III WIP Development

- **Capitalize on "Co-benefits"** – maximize BMP selection to increase climate resiliency
- **Account for and integrate planning and consideration of existing stressors** – consider existing stressors in establishing reduction targets or BMP selection
- **Align with existing climate resilient plans and strategies** – document jurisdictions' action plans and strategies to address climate change
- **Manage for risk and plan for uncertainty** – employ risk management and flexible implementation strategies to achieve and maintain water quality standards
- **Engage Local Agencies and Leaders** – work cooperatively with local partners to provide best available data on local impacts

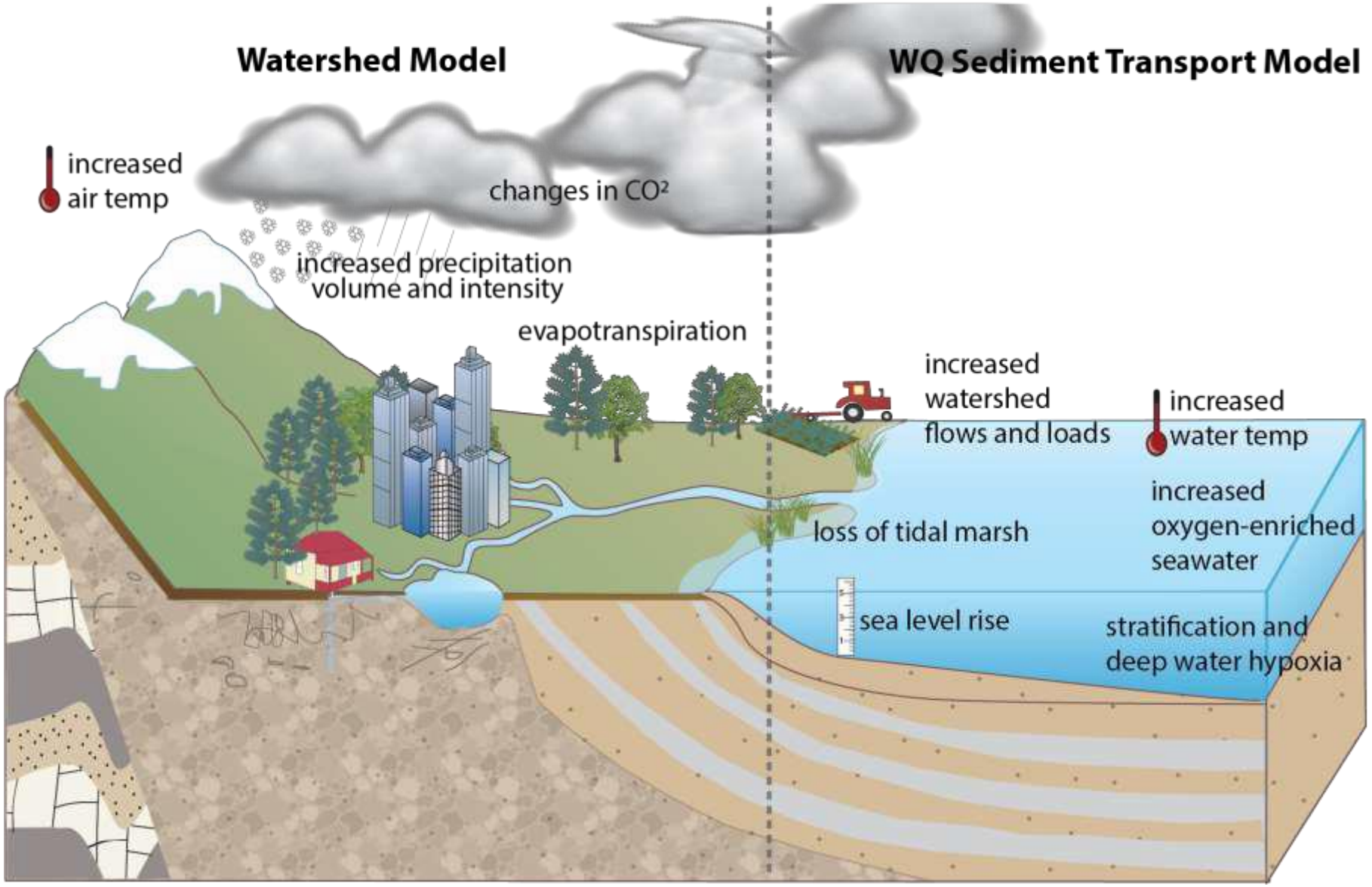
PSC-Approved Guiding Principles Phase III WIP Implementation

- **Reduce vulnerability** – use “Climate Smart” principles to site and design BMPs

- **Build in flexibility and adaptability** – allow for adjustments in BMP implementation to consider potential uncertainties and response options

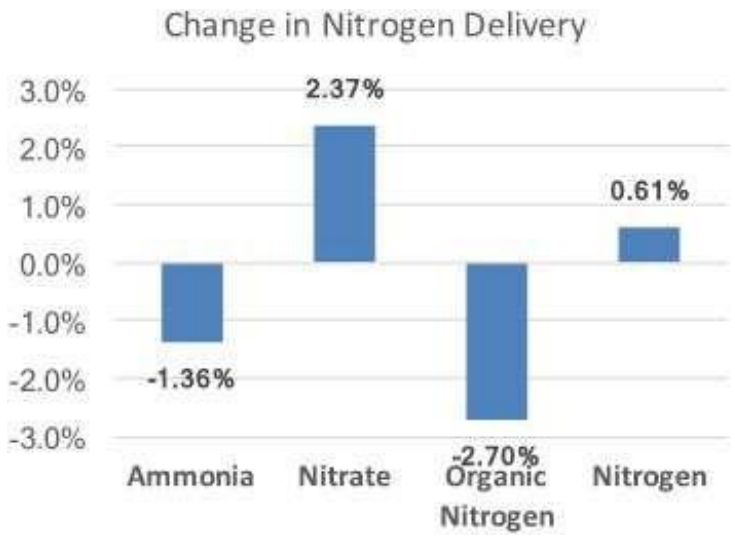
- **Adaptive manage** – allow for changes in BMP selection or WIP implementation over-time

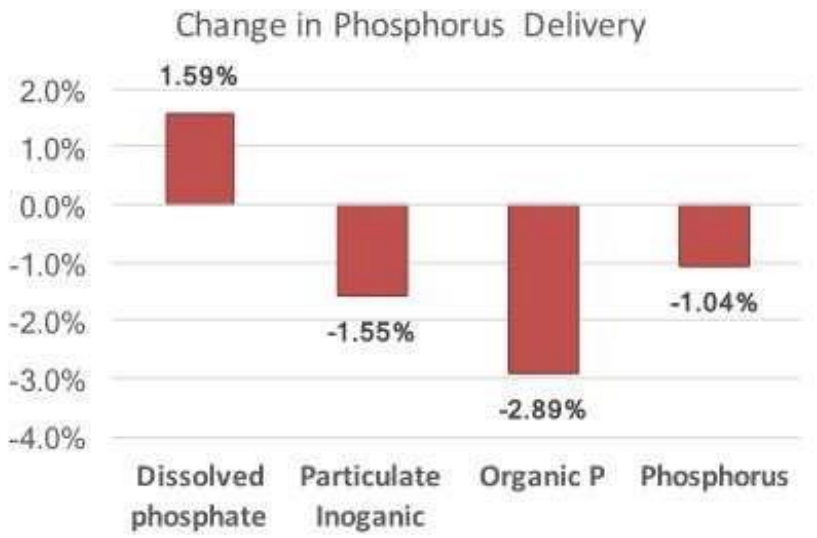
Accounting for Changing Conditions



Estimated Changes in Watershed and Bay Loads by 2025 Due to Climate Change

- Inorganic nutrients are increased with climate change
- Organic nutrients are decreased
- Inorganic nutrients have a higher effect on dissolved oxygen





Climate Change Loads: Nitrogen

targets listed at right are before accounting for special cases

Jurisdiction	1985 Baseline	2013 Progress	Climate Change	Phase III Planning Target
NY	18.710	15.440	0.400 (3.8%)	10.594
PA	122.414	99.275	4.135 (5.7%)	73.181
MD	83.556	55.893	2.194 (4.8%)	45.296
WV	8.727	8.065	0.236 (3.7%)	6.347
DC	6.481	1.754	0.006 (0.2%)	2.425
DE	6.968	6.587	0.397 (8.7%)	4.587
VA	84.295	61.530	1.722 (3.1%)	55.822
Basinwide	331.151	248.544	9.089 (4.6%)	198.253

*Units: millions of pounds

Climate Change Loads: Phosphorus

targets listed at right are before accounting for special cases

Jurisdiction	1985 Baseline	2013 Progress	Climate Change	Phase III Planning Target
NY	1.198	0.710	0.015 (2.9%)	0.506
PA	6.115	3.696	0.143 (4.7%)	3.073
MD	7.419	3.919	0.117 (3.2%)	3.604
WV	0.793	0.560	0.017 (3.7%)	0.456
DC	0.090	0.062	0.001 (0.8%)	0.130
DE	0.225	0.115	0.006 (5.1%)	0.120
VA	13.545	6.345	0.187 (3.0%)	6.186
Basinwide	29.384	15.408	0.485 (3.4%)	14.073

*Units: millions of pounds

Two Policy Approaches

Numeric

and/or

Programmatic

Numerical Approach

- A quantitative, numerical approach will result in a changed level of effort necessary to meet water quality standards
- Account for the increased pollutant loads to each jurisdiction's portion of the Bay watershed
- Accounts for feedbacks to the Bay's assimilative capacity
- This approach would treat the estimated cumulative effect of changed conditions due to climate change similarly to the approach being taken to account for growth
- Jurisdictions would develop Phase III WIPs which account for the estimated increased pollutant loads

Numerical Approach: Pros & Cons

Pros	Cons
• Comprehensive, straight-forward approach • Demonstrates Partnership's commitment to Chesapeake Bay Agreement Climate Resiliency Goal • Near-term response • Implemented in sequence with development of Phase III WIPs	• Increased level of effort required to meet water quality standards • If implemented in isolation, would not address the anticipated impacts of climate change on BMPs

Programmatic Approach

- An “adaptive management approach” that would be implemented through the two-year milestone process
- Would not change a jurisdictions' planning targets
- Directs the Partnership to collect and consider new information on the performance of BMPs, including the contribution of seasonal, inter-annual climate variability, and weather extremes.
    - Jurisdictions would assess this information and adjust plans, over-time, to better mitigate anticipated changes in loads and impacts on the performance of BMPs.
- Would require the inclusion of a narrative strategy in Phase III WIPs, describing a jurisdictions’ programmatic commitments to address climate change.
    - A sample “*narrative strategy*” would be provided to jurisdictions to guide implementation.

Programmatic Approach: Pros & Cons

Pros	Cons
• Adaptively managing for long-term change • Allows for use of local expertise and knowledge • Provides for learning across jurisdictions about methods and results • Allows for flexibility in jurisdictions' approaches to addressing climate change • Provides standard elements to be addressed	• If implemented in isolation (w/o numeric approach), delays substantive action to address climate change in the near-term • Lack of specific technical understanding to guide implementation • Requires additional monitoring and assessment efforts • Inconsistency in implementation across jurisdictions

WQGIT Recommendations to the PSC: Adopt a dual approach to factor climate change into the Phase III WIPs

1. **Adopt a programmatic approach to address climate change**

   - Include a narrative strategy in the Phase III WIPs that describes the jurisdictions' current action plans and strategies to address climate change, as well as the jurisdiction-specific nutrient pollutant loadings due to 2025 climate change conditions (derived using the planning targets methodology)

   - Incorporate local priorities (e.g., flooding) and actions to address climate change impacts

WQGIT Recommendations to the PSC: Adopt a dual approach to factor climate change into the Phase III WIPs

1. **Adopt a programmatic approach to address climate change (Continued)**

   - Document the current understanding of the science and identify the research gaps and needs, and what we hope to learn over time given the current state of uncertainty (e.g., a better understanding of the BMP responses, including new or other emerging BMPs, to climate change conditions)

   - Identify a date by which the Partnership will provide additional science and information to help inform implementation efforts to address climate change (early 2021 to inform 2022-2023 milestones?)

WQGIT Recommendations to the PSC: Adopt a dual approach to factor climate change into the Phase III WIPs

2. **Document and communicate additional nutrient pollutant loads of up to 9 million pounds of nitrogen and 0.5 million pounds of phosphorus due to 2025 climate change conditions**

   - Continue to understand the nature and effect of climate change impacts in the watershed and estuary to inform management strategies (e.g., WIP/2-year milestones)

   - By [insert date], develop recommendations for new and/or refined methods and modeling techniques to better assess projected impacts on watershed loads and estuarine impacts for a range of future scenarios, including the methodology used to develop jurisdiction-specific nutrient pollutant loads due to 2025 climate change conditions

WQGIT Recommendations to the PSC: Adopt a dual approach to factor climate change into the Phase III WIPs

2. **Document and communicate additional nutrient pollutant loads of up to 9 million pounds of nitrogen and 0.5 million pounds of phosphorus due to 2025 climate change conditions (Continued)**

   - By [insert date], consider results of updated methods, techniques, and studies and revisit whether to explicitly account for those additional nutrient pollutant loads due to 2025 climate change conditions in the Phase III WIPs and/or 2-year milestones

   - Identify a date (post-2025) by which the Partnership will fully address the additional nutrient pollutant loads in a Phase III WIP addendum and/or 2-year milestones

WQGIT Recommendations to the PSC

Provide the jurisdictions with the **flexibility** to explicitly account for additional nutrient pollutant loadings due to 2025 climate change impacts in their Phase III WIPs and/or 2-year milestones **prior to the Partnership agreed-upon date**

1. **Incorporate Climate Change in the Phase III WIPs**
   - Include a narrative strategy in the Phase III WIPs that describes the state and local jurisdictions' current action plans and strategies to address climate change, as well as the jurisdiction-specific nutrient and sediment pollution loadings due to 2025 climate change conditions.

2. **Understand the Science**
   - Address the uncertainty by documenting the current understanding of the science and identifying research gaps and needs.
   - Develop an estimate of pollutant load changes (nitrogen, phosphorus, and sediment) due to 2025 climate change conditions.
   - Develop a better understanding of BMP responses, including new or other emerging BMPs, to climate change conditions.
   - In 2021, the Partnership will consider results of updated methods, techniques, and studies and revisit existing estimated loads due to climate change to determine if any updates to those load estimates are needed.
   - Jurisdictions will be expected to account for additional nutrient and sediment pollutant loads due to 2025 climate change conditions in a Phase III WIP addendum and/or 2-year milestones beginning in 2022.

3. **Incorporate into Milestones**
   - Starting with the 2022-2023 milestones, the Partnership will determine how climate change will impact the BMPs included in the WIPs and address these vulnerabilities in the two-year milestones.

Discussion of PSC decisions at March 2, 2018 meeting

Documents are still in review and cannot be shared

I was given drafts on condition that I could describe them as they relate to what PSC wants from STAC but cannot distribute them

Updates on assimilative capacity

- Modeling workgroup asked to find additional savings and run additional scenarios in order to determine whether additional loads could be granted to WV and NY as discussed in December without compromising Bay water quality standards.
- Part of this effort was to see whether anticipated reductions under Clean Air Act could be use to offset some of the increased loads (effectively borrowing from the future).
- Rationale for the additional loads to each state included the fact that they do not benefit from improved Bay water quality, allocation methodology doesn’t account for absolute loads, and is biased against headwater states that have grown at a slower rate or even seen net shrinkage. Modeling workgroup re-assessed assimilative capacity in the light of requested additional loads for New York and West Virginia.

Updates on assimilative capacity

- Modeling workgroup determined it was feasible to raise assimilative capacity to 196.5 million pounds of TN and 13.75 million pounds of TP.
- NY – TN 1 million pounds; TP 100,000 pounds.
- WV – TN 2 million pounds discussed in December, but agreed to take only 1.5 million pounds with certain provisos (discussed below)
- Savings derived from projected effects of Clean Air Act by 2030 produced another 390,000 pounds beyond what was needed to satisfy requests by both New York and WV.
- BUT WV agreed to 1.5 million pounds with proviso that they would be held harmless from any further projected need for reductions that would take them below the levels needed to satisfy their phase II effort

Updates on assimilative capacity

- After about an hour's discussion WV eventually agreed to go to 1.89 million pounds, effectively absorbing the additional 390,000 pounds in total, return for dropping the language protecting them against future contingencies. It was originally anticipated to be held in reserve against future needs but this is no longer an option.
- This was not the preferred outcome but was agreed to in order to avoid either setting a precedent for special exceptions foreclosing future changes in allocation, or having to reduce allocations of other jurisdictions

Updates on Conowingo

- The plan as adopted is essentially the same as agreed to in December
- Funding is an issue but efforts will be made to find additional funding sources to cover this additional WIP.
- The framework will have to be fully developed before it can be worked out what site BMPs might be applied to the Conowingo BMP total rather than, for example, the Susquehanna upstream of Conowingo.

Updates on Conowingo

- PSC jurisdictions to appoint designees to the CWIP steering committee; EPA cannot have a representative because of its oversight role.
- Approval was granted for all four elements listed above:
  - designating staff members;
  - developing a financing strategy;
  - approving roles and responsibilities of the third party, WIP steering committee and EPA; and
  - approving a revised schedule with
  - final draft submitted to PSC in January 2019,
  - PSC issuing final comments in February 2019, and CWIP steering committee addressing comments and submitting a draft WIP on the partnership web site in March 2019 for 30-45 day public review and comment period.

Updates on Climate Change plan

- Mark Bennett's presentation explains changes in projected loads from summer 2017 to December 2017
- The modeling and climate resiliency workgroup plans to develop and implement a complete and fully operational climate change modeling and assessment system by 2019,
  - to be followed by a period of technical review and refinement, then
  - consideration of policy implications for including targets adjusted for the influence of climate change into the 2022-2023 milestones would be considered by the partnership, and
  - by 2022 the refined findings on climate change would be implemented in the milestones.
  - The proposed STAC workshop to develop this next phase in the climate modeling and assessment system is of key importance to this effort.

Updates on Climate Change plan

- In December, New York had declined to support the language on climate change targets, preferring to go back and think through what they wanted to propose. They came back this time with a statement that was offered with modifications to the original language.
- In the ensuing discussion, there was a request from Virginia to accelerate the schedule proposed for the modeling and climate resiliency workgroup plans out of concern that there would be little time left for implementation by 2025 based on the existing timetable.
- There was also an effort led by Ann Swanson with contributions from the group to take the edited statement on accounting for climate change in Phase III WIPs and arrive at consensus language.