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## **The 2019 WIPs**

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**An Evaluation of the  
Watershed Implementation  
Plans Submitted by  
Maryland, Virginia &  
Pennsylvania**

**by Evan Isaacson and David  
Flores**

**May 2019**

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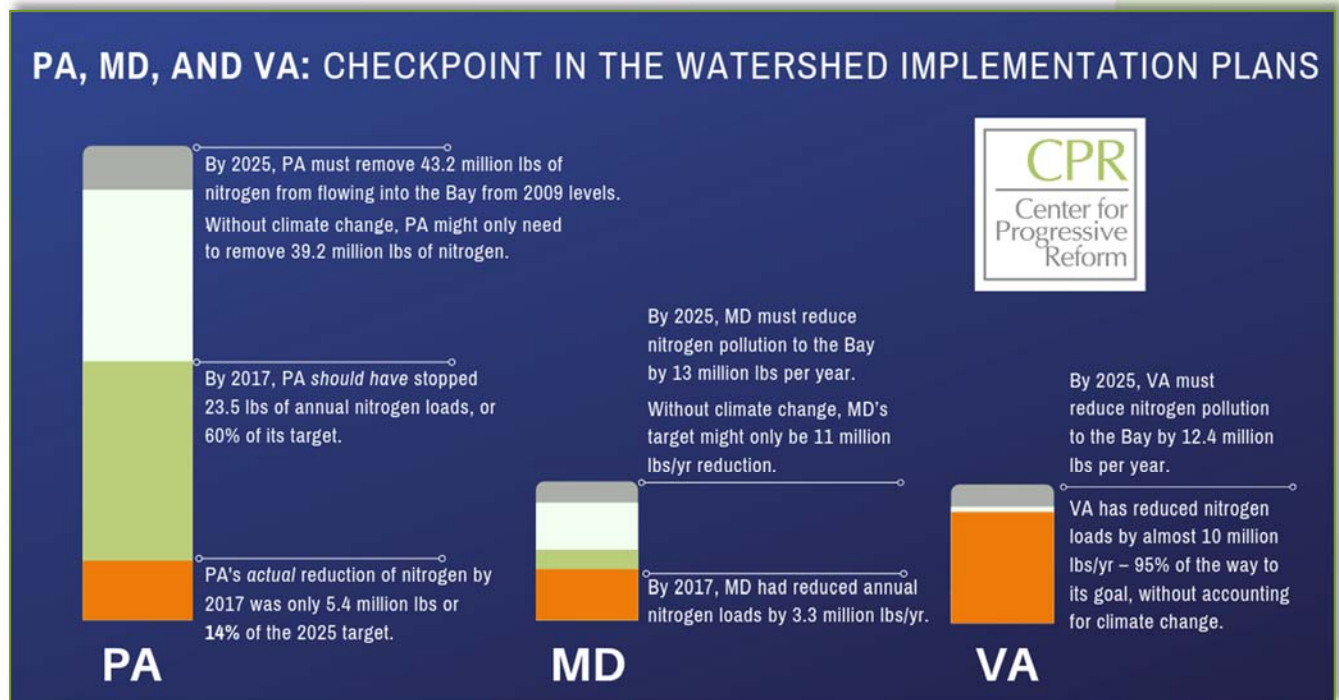
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# The 2019 WIPs

## An Evaluation of the Watershed Implementation Plans Submitted by Maryland, Virginia & Pennsylvania

by Evan Isaacson

In April 2019, each of the Chesapeake Bay states submitted to the U.S. Environmental Protection Agency and the public drafts of their Phase III Watershed Implementation Plans (WIPs), encompassing their plans for meeting the 2025 pollution reduction targets. Following is an evaluation by Evan Isaacson of the plans put forward by the three states responsible for the bulk of the pollution in the Bay: Maryland, Virginia, and Pennsylvania, and a separate examination by David Flores of how well each of the three states account for climate change in their plans.



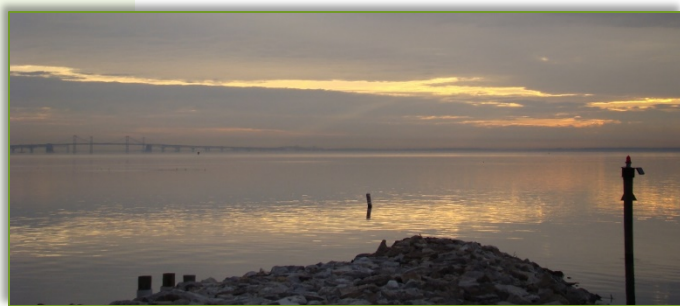
## Evaluation of Maryland's Watershed Implementation Plan

Maryland fell short of meeting its 2017 interim nitrogen reduction target for restoring the Chesapeake Bay. Because the status quo is not enough, the state's final Watershed Implementation Plan (WIP) should describe in detail the additional laws, programs, and funding that will propel the state toward its final 2025 pollution reduction targets. As described below, the draft WIP is deficient in several key ways, and we recommend the state strengthen its draft plan to be consistent with the expectations that the Environmental Protection Agency established in 2018, as well as the expectations that local advocates recently conveyed to the state. The following evaluation describes six critical aspects of the WIP and judges whether it is transparent enough to give the public the ability to understand the state's strategies and strong enough to provide assurance that the state will meet its 2025 targets.

### 1) New Laws, Regulations, Programs, and Funding

**Transparency: Inadequate.** The WIP does not include sufficient information about the actions it must take to meet its pollution reduction targets. Almost no new legislative or regulatory proposals are described in this plan, far fewer than in the state's previous WIPs. Maryland officials conclude that sufficient funding capacity is available to support the necessary strategies, but the WIP then acknowledges the state has not yet completed "a thorough financial analysis," which it "recommended."

**Strength of Plan: Inadequate.** Without a more transparent WIP that provides clarity about what new and additional actions the state plans to take, it will be difficult to evaluate whether the WIP breaks the status quo and accelerates progress. The WIP's only potential strategy capable of closing the sizable pollution reduction gap of more than 6 million pounds of nitrogen between 2018 and 2025 is "achieving an average nitrogen concentration of 3.25 mg/L among large sewage treatment plants." The plan does not state what combination of laws or subsidies will be employed to achieve this goal, how feasible it is, or even whether this is actually part of the state's plan, or just an idea it's considering. And if this strategy is a key part of the state's plan, it is unlikely to deliver the important public health, ecological, climate resilience, economic, and other co-benefits emphasized elsewhere in the WIP.



### 2) Contingency Plans

**Transparency: Inadequate.** A plan without contingencies is no plan at all. Certainly a plan of this magnitude and importance should have multiple

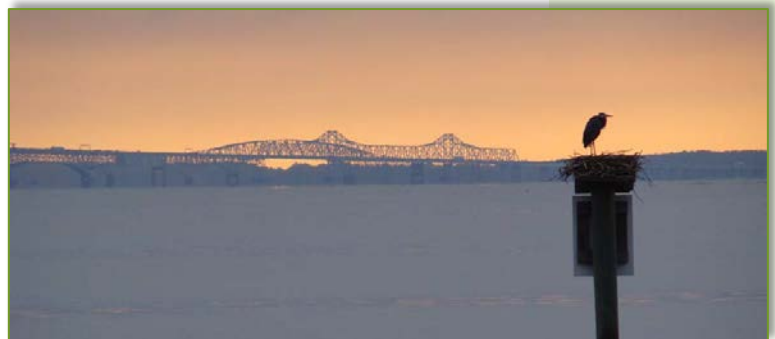
contingencies, particularly for the most important or aggressive strategies. Unfortunately, this draft WIP has almost no discussion of contingencies at all, with the exception of the section on climate change. Even though the WIP clearly states that Maryland’s plan “requires ... a principled approach to restoration that is backed by diverse strategies *and contingencies*,” the WIP fails to include such contingencies.

**Strength of Plan: Inadequate.** The WIP should be revised so that each strategy includes contingency plans consistent with the approach provided in the climate section of the WIP and similar to the approach taken in Maryland’s earlier Phase I WIP, where an entire section was devoted to contingency planning.

### 3) Emphasis on Enforceable Permits

**Transparency: Inadequate.** Maryland has reversed course on what had been a strength in its Phase I and II WIPs. Each of these prior WIPs included extensive detail on the state’s permitted dischargers, including how much pollution they contributed and how the state could rely on enforceable reductions in pollution from these permits to achieve its targets. The new draft WIP contains no such detail, which is contrary to EPA’s expectations. In fact, the WIP seems to be hinting at a reduced role for Clean Water Act compliance overall in reaching the state’s Bay restoration goals.

**Strength of Plan: Inadequate.** The WIP refers to a continuum with “regulations” on one side and “incentives” on the other, and then describes the need to “reduce costs” and maximize “cost effective” strategies. The problem is that if the state wants to reduce its cost for restoring the Bay, it necessarily must make up for any decrease in funding support by getting additional pollution reductions through regulations, enforcing permit violations, and by creating more stringent limits. Instead, the state has exhibited a concerning trend in recent years of adopting deregulatory proposals and [dramatically reducing enforcement activity](#), which is why a statewide coalition of advocates called upon Maryland to address the “reduced agency budget” that has resulted in “lagging enforcement capacity.” The final WIP should embrace robust enforcement programs as a cost-effective strategy for accelerating Bay restoration progress in a way that also maximizes protection for the communities most impacted by toxic pollution.





#### 4) Enhanced Planning to Address Concerns Expressed through EPA Oversight

**Transparency: Inadequate.** EPA downgraded its assessment of progress for Maryland's stormwater pollution sector several years ago to an "enhanced oversight" status level in recognition of the extraordinarily slow pace of progress in reducing polluted runoff in urban communities. Rather than including an "enhanced level of detail" for this lagging sector as EPA called for in its written expectations and "more systematic documentation of planned changes to existing programmatic capacity," Maryland's WIP provides no such detail or enhanced plans.

**Strength of Plan: Inadequate.** Since the TMDL was established, Maryland has failed to reduce overall nitrogen pollution from urban impervious surfaces. Under these circumstances, it is unacceptable that the draft WIP describes a plan for this source of pollution that is even less ambitious than the status quo embodied in the state's current municipal stormwater permits. What makes the current Chesapeake restoration effort under the Bay TMDL unique is its focus on accountability, and specifically, holding *states* accountable for meeting statewide reduction targets. Maryland's WIP expresses the opposite of accountability, passing the buck to local governments by deferring to their preferred level of effort. Worse, while the WIP describes at length the important co-benefits of investing in urban green infrastructure projects that reduce urban runoff and the need to include these considerations in its Bay restoration planning process, the WIP acknowledges that the state will allow less effort in the future, essentially choosing to forgo capturing the many benefits associated with taking greater action.

#### 5) Targeted Strategies for Priority Areas

**Transparency: Adequate.** The WIP references the EPA expectation that tidal states "demonstrate a greater level of targeting towards those Bay segments significantly out of attainment" and provides several pages of detailed discussion regarding the expected impacts of planned activities on each segment.

**Strength of Plan: Inadequate.** A reasonable approach to tailoring Maryland's strategies to address lagging progress among certain regions of the state would channel greater resources into those regions. An innovative approach might even rely on a customized strategy to provide the right mix of solutions to meet each county's greatest water quality challenges. But Maryland's approach is not reasonable, much less innovative. The draft WIP proposes policies to equalize all pollution everywhere based solely on the downstream impact to dissolved oxygen levels in the Bay. Policies such as nutrient trading and a new policy devised for the Phase III WIPs called *inter-basin exchanges* do just this. They sacrifice pollution reductions in some

communities for the sake of seeking the lowest-cost solution and ignore both the local conditions and the multitude of co-benefits that pollution reduction projects could have for these areas. Maryland should re-examine its approach and commit to helping protect all Marylanders from the harmful impacts of water pollution.

## 6) Environmental Justice

**Meaningful Engagement: Inadequate.** The draft WIP contains no reference to engagement with environmental justice advocates, inclusion of representatives from environmental justice communities, or even any involvement of the state’s own Commission on Environmental Justice and Sustainable Communities, which is dedicated to “creating healthy, safe, economically vibrant, environmentally sound communities for all Marylanders in a manner that allows for democratic processes and community involvement.” Appendix A of the draft WIP describes dozens of meetings, but none with those representing environmental justice communities or the state’s own commission on environmental justice.

**Significant Programs and Policy Commitments: Inadequate.** The draft WIP’s lack of discussion regarding impacts on environmental justice communities is particularly problematic for any state, like Maryland, that is planning to rely on policies like nutrient trading and inter-basin pollution exchanges to meet its Bay restoration targets. Such policies often create pollution hot spots and delay progress in reducing pollution, particularly in urban environments that typically suffer from a much more toxic landscape. Moreover, as the Bay Program has noted, a recent study found “disparities in Maryland’s watershed restoration funding, indicating that nonwhite areas have received fewer restoration resources or projects for their communities.”



## Evaluation of Virginia's Watershed Implementation Plan

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Virginia has a lot to be proud of in its effort to restore the Chesapeake Bay. The Commonwealth met its pollution reduction targets for the midpoint of the Bay restoration effort in 2017. And the draft Watershed Implementation Plan (WIP) that Virginia just released to describe how it will reach its final 2025 targets has some strong components.

However, as described below, the draft WIP is deficient in several ways, and we recommend the Commonwealth strengthen its plan to be consistent with the expectations that the Environmental Protection Agency established in 2018, as well as the expectations that local advocates conveyed to the Commonwealth more recently. The following evaluation describes six items important for any WIP and judges whether the WIP is transparent enough to give the public the ability to understand Virginia's strategies and strong enough to provide assurance that the Commonwealth will meet its 2025 targets.

### 1) New Laws, Regulations, Programs, and Funding

**Transparency: Needs Improvement.** The WIP describes new legislative, regulatory, and funding proposals that will be necessary to reach the 2025 pollution reduction targets, complete with the responsible agency and a rough timeline for action. This shows the Commonwealth is committed to more than the status quo. Importantly, the WIP describes strategies that can be achieved through executive action and which will require new legislative authority. The final WIP should more clearly state which strategies the Commonwealth will *definitely* pursue and why, in some cases, the WIP describes the importance of a strategy but indicates it is only "considering" it. To maximize accountability, it is imperative for the public to understand which strategies are most important for the WIP to be successful and precisely what the Commonwealth is committing to do. Similarly, the final WIP should more clearly estimate the pollution reductions associated with each strategy and how much of Virginia's remaining progress gap each strategy represents.

**Strength of Plan: Needs Improvement.** Virginia's approach to estimating the resources needed to achieve Bay restoration targets is commendable. The Commonwealth's "Agricultural Needs Assessment" provides legislators with a detailed analysis of the funds that need to be appropriated, and the Commonwealth will soon begin providing similar analyses of funding needs for the stormwater and wastewater sectors. The draft WIP also describes a few key regulatory plans going forward, including: scaling-up its municipal stormwater pollution reduction requirement; incorporating recommendations to maximize pollution reductions from the agricultural cost share program; increasing the cost share budget and portion directed to the Bay watershed; reinstating an agricultural loan program; and

providing funds to support targeted levels of key agricultural best management practices (BMPs), such as cover crops, conservation tillage practices, and nutrient management planning. The primary question people should be asking the WIP developers, though, is why the Commonwealth feels the need to rely on a new mechanism created by EPA called *inter-basin exchanges* that allows states to “shift” pollution reduction obligations from one region to another. Virginia has made substantial progress toward its 2025 target already and has presented many credible strategies to achieve further progress. There is no reason the Commonwealth should skimp on clean water investments in *any* region, and we urge Virginia to commit to meeting its 2025 target without the use of these exchanges.

## 2) Contingency Plans

**Transparency: Inadequate.** The WIP contains no discussion of contingencies. There is no plan B if a particular strategy fails. Particularly for any of the more important strategies, it is imperative the Commonwealth provide a backstop or alternative. For example, the Commonwealth cannot simply say “assuming sufficient resources are available...” but must instead describe what actions will be taken if the resources they are hoping for never materialize.



**Strength of Plan: Inadequate.** The Commonwealth should create a new section describing its contingency plans or at least provide a discussion of contingencies throughout the WIP alongside each priority strategy.

## 3) Emphasis on Enforceable Permits

**Transparency: Inadequate.** EPA expected each state’s WIP to provide “a full listing of all” Clean Water Act permits. These permits are the bedrock of the Bay restoration effort and ongoing work to protect local waters and communities. These permits contain the tailored pollution reductions that permit holders are legally required to meet. Beyond EPA’s expectations, the advocates who have worked with the Commonwealth on Bay restoration activities since the beginning have also provided Virginia with their own expectations for the WIP, including that “Clean Water Act permits must be up-to-date, robust, monitored, and enforced” and that, to increase compliance with these permits, the WIP needs to describe a strategy to address “reduced agency budgets and staffing loss.” There is limited discussion of staffing needs in the draft WIP and no plan to address them.

**Strength of Plan: Inadequate.** Compliance with Clean Water Act permits is essential for restoring the Bay. The final WIP should provide information such as the amount of pollution allowed under each permit or, in some

cases, each class of permit; the amount of pollution actually discharged; what percentage of the Commonwealth's overall pollution comes from each class of permit; how much permit limits decreased since the TMDL was created; a best estimate of how much additional pollution might be reduced from these permits in the future; and compliance rates by permit class. Such information will allow the public and policymakers to better understand the role of robust enforcement programs and whether we can achieve greater reductions through permitting and enforcement rather than implementing other challenging new programs.

#### 4) Enhanced Planning to Address Concerns Expressed through EPA Oversight

Unlike Maryland and Pennsylvania, Virginia is not under additional EPA scrutiny because it has made substantial progress toward the 2025 pollution reduction target under the Bay TMDL and has not exhibited deficiencies of significant concern to EPA for any particular sector of pollution.

#### 5) Targeted Strategies for Priority Areas

**Transparency: Adequate.** The WIP identifies key areas of the Commonwealth that are most critical for its restoration effort. For example, with one-third of Virginia's portion of the watershed responsible for about three-fourths of agricultural nitrogen, the WIP describes a strategy to direct greater funding to projects in priority areas first. Moreover, the plan provides a significant amount of detail about implementation plans for the Commonwealth's five major basins in the Bay watershed, each of which has unique needs.

**Strength of Plan: Needs Improvement.** Although the draft WIP provides a clear summary of the progress and gaps for each region, Virginia has ultimately decided that it is acceptable for certain regions to *not* meet their pollution reduction targets. Instead, the Commonwealth has decided that "excess" progress should be applied to cover shortfalls in other regions and allow those regions to do less to protect water quality. Such "inter-basin exchanges" are now permissible under the Bay TMDL but should be a last resort for states that have fallen too far behind. Virginia is not among them, and yet under this plan, individuals living in the Potomac watershed or on Virginia's Eastern Shore will not have water that is as clean as it would be if the Commonwealth ensured these basins' individual pollution reduction targets were met. After all, the Bay TMDL has been celebrated as a framework for restoring water quality for people living in the Chesapeake's headwaters hundreds of miles from the Bay, and the Chesapeake Bay Program has devoted considerable time and resources to help state officials and the public understand the substantial co-benefits of any Bay restoration activities they undertake. In short, reductions represent an investment and an opportunity and should not be labelled a "cost" to be minimized.

## 6) Environmental Justice

**Meaningful Engagement: Inadequate.** The draft WIP contains no reference to engagement with environmental justice advocates in the development of the Commonwealth’s plan or inclusion of representatives from environmental justice communities. The WIP describes meetings with “almost 250 individuals” representing many different interests, but none that represented Virginia’s most vulnerable communities that could benefit considerably from strategies that improve public health and provide a local economic boost. The Commonwealth recently established an Advisory Council on Environmental Justice for the purpose of instilling a “consistent, action-oriented approach to incorporating environmental justice into decision-making.” Virginia should take a hard look at why the council was not consulted during this massive decision-making process and revise the draft WIP to discuss how environmental justice considerations will inform the Commonwealth’s implementation of the plan.

**Significant Programs and Policy Commitments: Inadequate.** The lack of discussion of impacts on environmental justice communities is particularly problematic for any state, like Virginia, that is planning to rely on policies like nutrient trading and inter-basin pollution exchanges to meet its Bay restoration targets. Such policies often create hot spots and delay progress in reducing pollution, particularly urban environments that typically suffer from a more toxic landscape.



## Evaluation of Pennsylvania's Watershed Implementation Plan

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Pennsylvania has fallen far short of meeting its pollution reduction targets for restoring the Chesapeake Bay. If the Chesapeake has any hope of finally being restored, it will require a substantial new commitment by Pennsylvania to reduce pollution in its local waters. The place for this to start is with a solid Watershed Implementation Plan (WIP).

The Commonwealth recently released its draft WIP to describe the new strategies and additional laws, programs, and funding that will be needed to catalyze a major course correction. However, as described below, the draft WIP is deficient in several key ways and, importantly, *does not appear to even aim for the pollution reduction target* that the Chesapeake Bay Program says is necessary to restore the Bay.

The Environmental Protection Agency must immediately respond by requiring Pennsylvania to revise its WIP to reflect a plan calibrated to the pollution reductions the Bay needs. Moreover, EPA should ensure that all of the expectations it conveyed to Pennsylvania and the other Bay states for the development of their WIPs are rigorously adhered to. The following is a brief evaluation of the level of transparency and quality of Pennsylvania's WIP, with a close look at a few of the more critical components of the plan.

### 1) New Laws, Regulations, Programs, and Funding

**Transparency: Inadequate.** At first glance, the 155-page WIP, with many charts and tables, gives the impression that the Commonwealth has substantiated its claims of being able to achieve its 2025 pollution reduction targets. But looks can be deceiving. After reading the entire document, a reader will likely come away without any clear idea of how – or even whether – the Commonwealth will meet its targets. Indeed, a close inspection of several key passages and numeric details seems to suggest that the Commonwealth has not identified a comprehensive strategy to meet its nearly 34 million pound nitrogen reduction target at all, despite repeatedly articulating its intent to do so.

**Strength of Plan: Inadequate.** Pennsylvania has done a laudable job of engaging with local governments to create what it describes as a “brand new, bottom-up, county-based” approach. But the numerous planned actions that cumulatively comprise the dozens of “County Action Plans” fail to add up to the pollution reductions needed. In one key table, the draft WIP describes an overall 22,371,000 pound annual reduction of nitrogen by 2025, while another table shows a different 22,566,380 pound reduction. The problem is not just that these two numbers are inconsistent, but that neither come close to the nearly 34 million pound reduction required by 2025. In the section of the WIP on county actions, almost no county's plan



added up to the assigned reduction target. And in the funding section, the WIP details the enormous funding shortfall Pennsylvania faces but provides no strategy on how to fill this overall gap, or even some of the smaller gaps associated with priority strategies and urgent needs, aside from listing a few ideas for legislation.

## 2) Contingency Plans

### **Transparency: Needs Improvement.**

The draft WIP includes no reference to contingencies. However, Pennsylvania has developed a “Tracking Template” where designated “responsible parties” will summarize “key action steps” taken over each six-month period to advance implementation of selected “priority initiatives.” The purpose of tracking progress toward the Commonwealth’s commitments is to give effect to its adaptive management framework, allowing it to make “targeted adjustments to programs and priorities” based on the ongoing pace of progress every six months.



**Strength of Plan: Inadequate.** Transforming adaptive management from a buzzword into an effective process for closing gaps and accelerating progress requires tracking progress and a commitment to taking contingency actions. The WIP creates this new biannual tracking program (to comply with EPA expectations) but provides no assurances about contingencies if the tracking reveals continuing shortfalls.

## 3) Emphasis on Enforceable Permits

**Transparency: Needs Improvement.** The WIP describes in great detail how regulatory compliance activities will help meet its pollution reduction targets. However, EPA expects jurisdictions to provide a “full listing” of all Clean Water Act permits, which Pennsylvania has not done in its draft WIP. Providing a list of permits and the potential reductions associated with permit compliance activities represents the best assurance we can have of how close the Commonwealth can get to its 2025 targets through reliable and low-cost enforcement and compliance activities even if it fails to increase its budget to support the WIP’s priority initiatives.

**Strength of Plan: Adequate.** The WIP emphasizes the role of permitting and enforcement, with “compliance” listed as one of five primary categories of action steps. “Agricultural Compliance” will provide the single largest reduction in nitrogen. The WIP describes manure management plan compliance, winter manure spreading restrictions, and agricultural erosion and sediment control regulations as important “opportunities” to achieve large-scale pollution reductions at relatively low cost. The draft WIP describes the increased future role of the new municipal stormwater permit



to generate reductions in polluted runoff from municipal property and a commitment to further increase controls on particularly polluted runoff from industrial properties. The WIP also describes how its enforcement policy will result in the creation of new wetlands, which have the potential to reduce pollution significantly. Importantly, the WIP provides a detailed analysis of the staffing and resources the Commonwealth needs to ensure these low-cost reductions can be achieved.

#### 4) Enhanced Planning to Address Concerns Expressed through EPA Oversight

**Transparency: Adequate.** The draft WIP makes clear that the Commonwealth's policymakers understand the several additional Pennsylvania-specific items it must satisfy pursuant to EPA expectations. The WIP includes a section discussing EPA's previous findings regarding the Commonwealth's inadequate progress, as well as a new biannual progress report that Pennsylvania will need to provide. The WIP also describes at length the "consequences" and "backstop" actions EPA has authority to take if progress continues to lag.

**Strength of Plan: Inadequate.** Pennsylvania's draft WIP provides a reasonable degree of detail regarding how it will accelerate pollution reductions from the agriculture sector, which EPA has downgraded to its most severe "backstop" level of oversight. The Commonwealth's other downgraded pollution source sector – stormwater – gets less attention due to its relatively small contribution to overall pollution levels. Overall, however, the WIP does not meet the most basic of EPA expectations, which is that it describe a plan to meet the full 2025 pollution reduction target, not a lesser amount. Unless Pennsylvania submits a WIP that describes how it will fully close this gap, it should be rejected.

#### 5) Targeted Strategies for Priority Areas

**Transparency: Adequate.** The draft WIP details the local targets assigned to counties based on an equal level of effort. The WIP further breaks down counties into different priority tiers, with the highest-priority counties due to submit action plans first. The idea is that the Commonwealth and counties will learn from the experience of the first counties and apply those lessons. The draft WIP describes detailed projects and practices that the first four counties plan to establish to reduce pollution. The final WIP should provide additional details on current levels of implementation for each project or practice so the public understands how big the gap is for each.

**Strength of Plan: Needs Improvement.** Neither the Commonwealth's planned reductions nor most of the local planning targets are actually aligned with what is necessary to meet the overall 2025 target. Beyond this fatal flaw, the four county plans described in the draft WIP could be

improved by providing greater detail on how the counties plan to fund or mandate the many projects or policies they have identified. Moreover, Pennsylvania should clearly articulate what actions it will take to fill in gaps left by insufficient county progress. Finally, while a “bottom-up” and county-driven approach to creating the draft WIP was laudable for its engagement with the county officials who will be needed to help ensure projects are put in the ground, the Commonwealth should provide an analysis of how it can better target *state* funds to strengthen and optimize its approach and ensure state-level accountability. This type of analysis can be done through the use of various tools developed by the Chesapeake Bay Program.

## 6) Environmental Justice

**Meaningful Engagement: Inadequate.** The WIP lists dozens of individuals who comprised the WIP Steering Committee and participated in work groups. No work groups were dedicated to protecting the health of Pennsylvania’s most vulnerable communities. Environmental justice is one of the guiding principles of the Chesapeake Bay Watershed Agreement, and the mission of the Pennsylvania Office of Environmental Justice is to ensure that “Pennsylvanians most at risk from pollution and other environmental impacts have a voice in the decision-making process” and the “meaningful involvement of all people with the development, implementation, and enforcement of environmental policies.” Pennsylvania also has an Environmental Justice Advisory Board, which could have ensured meaningful engagement with communities and the inclusion of protective policies in the draft WIP. As Pennsylvania’s WIP acknowledges, without greater efforts, “communities will continue to suffer from pollution-related problems such as stormwater and flood damage.” When local engagement relies disproportionately on meeting with high-level officials, but not concerned citizens, too often the only response the Commonwealth hears is the desire to do and spend less, not the need to protect vulnerable residents and communities.

**Significant Programs and Policy Commitments: Inadequate.** As Pennsylvania did not undertake meaningful engagement with representatives of environmental justice communities, it is not surprising the WIP does not have significant environmental justice policy commitments.

## Addressing Climate Change in the Draft Phase III WIPs

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by David Flores

On their face, the draft plans begin to broadly address climate mitigation and adaptation needs. But they lack the necessary detail to substantiate processes and measurable outcomes that together ensure the planned restoration will be climate-resilient. Put differently, Maryland, Pennsylvania, and Virginia have largely failed to explain how their climate efforts are aligned with the Chesapeake cleanup plans and their intended results.

Last year, the Bay Partners committed to addressing climate change programmatically in their Phase III WIPs. The jurisdictions agreed to include a discussion of how climate change will impact the Bay cleanup, on the basis of preliminary modeling. They would further describe how their broader climate strategies would align with proposed restoration plans. The jurisdictions also approved five “guiding principles” for addressing climate change in the draft plans:

1. Capitalize on co-benefits;
2. Account for and integrate planning and consideration of existing stressors;
3. Align with existing climate resiliency plans and strategies where feasible;
4. Manage for risk and plan for uncertainty; and
5. Engage federal and local agencies and leaders

The Bay Program’s Climate Resiliency Work Group and Water Quality Goal Implementation Team also produced a narrative template for the jurisdictions’ programmatic consideration of climate change in the Phase III WIPs. The narrative template reflects the Partners’ priorities to “facilitate the collection and evaluation of management practice performance data” to adapt to climate impacts; to reduce vulnerability of Best Management Practices (BMPs) through “Climate-Smart” siting and design principles; and to integrate flexibility into planning for BMP implementation to account for climate-related uncertainties. In addition to addressing climate change on a programmatic basis in these Phase III WIPs, the jurisdictions also committed to returning to the question with 2021 addenda to the plans that would account for additional pollutant loads resulting from projected climate change conditions in 2025.

### Maryland

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Maryland’s draft WIP provides an extensive and useful discussion of climate change impacts on Bay restoration and water quality, related social and economic costs to the state, and a presentation of an impressive quantity of state climate strategies and programs. In this regard, Maryland’s draft truly

excels. But it falls short when it comes to serving up actual detail on the process and intended results of aligning the state’s existing climate change strategies with best management practices (BMP) design and restoration financing and implementation.

The draft also presents a number of “preliminary strategies” that Maryland “could” adopt, while providing no discussion of why these strategies, which focus on identification and financing of climate resiliency projects with water quality benefits, would or would not be pursued. Maryland should also discuss how and by how much its current funding incentives for climate co-benefits, for example, are expected to result in measurable Bay restoration and resilience outcomes. More detail is also needed to explain how Maryland intends to monitor BMPs for climate impacts; whether proposed strategies that provide flexibility to address climate change impacts are adequate; and how, and to what extent, Maryland’s strategies on climate account for other environmental and social stressors such as suburban growth.



The draft also presents a number of research priorities that will provide a foundation for adaptation in BMP design and implementation, but Maryland avoids committing to actions that would improve the resilience of BMP design and flexibility to account for climate change. Maryland’s plan also fails to provide detailed and explicit assurance that restoration practices, like constructed wetlands and stormwater catchments, will be sited and designed to account for sea-level rise, for example. Maryland commits to continued research on the impact of increased precipitation on stormwater BMP performance but stops short of a commitment to revise design standards or stormwater sector implementation to account for observed or projected climate impacts. Similarly, Maryland enumerates a number of potential strategies and funding mechanisms to increase resilience in its Bay restoration plan, but it would appear that the state – without explanation of the underlying reasoning – is not yet prepared to commit to increasing investment in resilient BMPs or resilience co-benefits.

## Virginia

Virginia’s draft Phase III WIP provides a useful discussion of the impacts of climate change and climate-attributable Bay pollution, as well as a number of recent and planned climate adaptation and mitigation programs and a host of academic, state, and federal resources for adaptation and restoration

planning. Unfortunately, the plan offers scant detail on how and to what end Virginia’s climate strategies, programs, and resources align with its plans for design and implementation of Bay restoration practices. Similarly, the plan fails to explain how the Commonwealth will account for uncertainty and other existing stressors while promoting resilience co-benefits.

The draft WIP references the [governor’s recent executive order](#), “Increasing Virginia’s Resilience to Sea Level Rise and Natural Hazards,” the related Coastal Resilience Master Plan, and the Commonwealth’s Coastal Zone Management Program. The plan does not, however, present a detailed discussion of how exactly these programs and policies will align with Virginia’s strategy to reduce pollution to the Bay by addressing climate impacts to proposed restoration practices and policies. The draft notes that the executive order includes a directive to assess the climate vulnerability of state-owned buildings, and to establish a flood resilience standard for them, but does not describe how exactly the proposed standard will promote the resilience of Bay restoration practices, nor how directives that relate to technology, funding, or guidance for local government will align with proposed Bay restoration policies and practices to promote resilience.



Similarly, the draft does not describe how, exactly, the Commonwealth’s prospective Coastal Resilience Master Plan, and the proposed practices and policies therein, will align with Virginia’s suite of proposed practices, programs, and policies to reduce Bay pollution. More specifically, the draft does not specify whether the “nature and nature-based infrastructure and flood control” practices in the prospective Master Plan are the same practices accounted for in the draft WIP, and whether and how these practices will be designed to be resilient to climate impacts.

The draft is in large part focused on coastal flooding impacts. That’s certainly an important aspect of climate change given the expected impact of sea-level rise on the Tidewater region. But the plan does not meaningfully address other climate impacts on the restoration effort throughout the greater Bay watershed, including, for example, increased precipitation, wildfires, and rising temperatures, which are likely to affect the efficiency of restoration practices.

The draft WIP asserts that Virginia’s suite of proposed policies and practices are adequate to account for an additional 1.72 million pounds of nitrogen and 0.19 million pounds of phosphorus attributable to climate change by

2025. Virginia’s commitment to address this pollution is laudable and sets an important precedent well in advance of the Bay partners’ shared commitment to develop WIP addenda in 2021 to account for climate-attributable pollution loads. However, the Commonwealth’s stated commitment would benefit from still greater transparency, including a detailed narrative discussion of how – and by how much – Virginia plans to implement practices that account for climate-attributable loadings after addressing significant gaps in other pollution sectors.

By all indications, it appears that Virginia is relying on exchanges (“nutrient trading”) between the James River and the other four Bay river basins to account for climate-attributable loads, as well as other shortfalls. If that is the case, Virginia should also consider and discuss whether water quality standards in basins receiving credits – the Potomac, Rappahannock, York, and Eastern Shore – can still be achieved in lieu of additional restoration practices to address climate change and the resulting pollution.

## Pennsylvania

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Like Maryland, Pennsylvania’s draft WIP presents a useful discussion of the impacts of climate change, including the social and economic costs to the Commonwealth. And like Maryland and Virginia’s plans, Pennsylvania’s draft presents several existing state climate mitigation and adaptation policies and programs. Unfortunately, like Virginia and Maryland, it also fails to discuss specifically how these strategies align with its restoration plan and its expected results. Pennsylvania’s draft also describes commitment to a handful of studies to determine how climate will impact its restoration plan and certain BMPs, but does not specify a process by which the Commonwealth will take any regulatory action or modify its restoration plan to address identified climate impacts. Lastly, Pennsylvania’s draft plan fails to describe whether and how the Commonwealth will implement restoration strategies that promote resilience co-benefits, account for existing stressors, and account for risk and uncertainty.

## Conclusion and Recommendations

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The common thread running throughout the Phase III WIP drafts from Virginia, Maryland, and Pennsylvania is a lack of detail on how exactly the states intend to account for climate change in their Bay restoration efforts and the intended results. They each take a stab at it, but none offers up enough detail to serve as assurance that they’ve actually thought it through and will be able to follow up. In the context of Bay cleanup efforts, that’s a red flag. Over the years, the states have committed themselves to a series of ambitious cleanup goals, only to fall far short of the mark when it came to



doing the hard work. If the states have detailed plans, now is the time to serve them up. Otherwise, in this case, the devil is in the lack of detail.

Before states submit their draft plans to EPA for approval, they should improve them to adequately address the impacts of climate change on restoration planning and programming to:

- Provide more detail to describe how existing climate strategies will align with BMP design, implementation, and other WIP strategies and policies that will measurably increase the resilience of the restoration effort and will promote discrete resilience co-benefits;
- Provide detailed processes for adapting restoration design and other relevant regulatory standards to account for changed climate conditions and worsening climate impacts. (For example, Virginia should also consider expanding the scope of its proposed freeboard standard for sea-level rise to include not just state-owned buildings but other state-owned facilities and state-financed restoration practices.); and
- Provide more detailed discussion of how proposed WIP programs and practices have been designed to account for existing stressors related to climate change, to adapt to potential climate risks and uncertainty, and to promote resilience outcomes through structured engagement with federal and local governments, as well as private-sector partners.

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