CHESAPEAKE ACCOUNTABILITY PROJECT

January 21, 2021

Raymond Bahr, Sediment, Stormwater and Dam Safety Program
Maryland Department of Environment
Water Science Administration
1800 Washington Blvd. Suite 440
Baltimore, MD 21230
Via email to: Raymond.Bahr@Maryland.gov

Re: Tentative Determination for the National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Discharge Permit for Baltimore City (Permit No. 20-DP-3315, MD0068292)

Dr. Mr. Bahr:

The Chesapeake Accountability Project ("CAP") and other stakeholders listed below submit these comments on the Maryland Department of Environment ("the Department") tentative determination to renew the the National Pollutant Discharge Elimination System Separate Storm Sewer System Discharge Permit for Baltimore City, Permit No. 20-DP-3315, MD0068292 ("MS4 Permit," "Permit," or "Draft Permit"). We appreciate your efforts in drafting this tentative determination and thank you for the opportunity to comment.

CAP is a coalition of environmental organizations committed to reducing pollution throughout the Chesapeake Bay watershed. The project is a partnership of five nonprofit organizations, including the Center for Progressive Reform ("CPR"), Chesapeake Bay Foundation ("CBF"), Chesapeake Legal Alliance ("CLA"), Choose Clean Water Coalition ("CCWC"), and the Environmental Integrity Project ("EIP"). Weak Clean Water Act ("CWA") and state pollution control permits and lack of enforcement result in millions of pounds of pollution entering our waters and have major implications for water quality and overall Bay restoration. By contrast, strong CWA implementation and enforcement leads to efficient pollution reduction and equitable outcomes.

The CWA relies on permits to achieve and maintain water quality standards. The Baltimore City MS4 Permit is an important opportunity to create clear, specific, measurable, and enforceable requirements to reduce municipal stormwater runoff, which accounts for a significant portion of pollution entering our local waters and the Chesapeake Bay. We submit the following comments and recommendations to ensure that this MS4 Permit complies with applicable state and federal

laws and protects and restores water quality.[1]

Summary of Requested Permit Improvements

Below we have summarized some of the specific requests regarding improvements we urge the Department to adopt within the Draft Permit. This summary of the full comments is provided for convenience but should not be interpreted as an exhaustive list of suggested Permit improvements, which are described below in full and are supported by the documents referenced in footnotes and/or attached to these comments.

Maryland's MS4 permits must require practices that reduce stormwater volume and pollution (Section I).

- To date, the Total Maximum Daily Load (TMDL) process and the MS4 permits in Maryland have failed to reduce urban stormwater pollution. Data show pollution associated with stormwater worsening in many streams and stormwater loads have increased.
- The Draft MS4 Permits do not meet the strong mandate of CWA Section 117 to ensure that management plans are developed and implemented to achieve and maintain the goals and requirements of the Bay program as affirmed by the Third Circuit's ruling upholding the Bay TMDL.
- We urge the Department to dramatically increase the requirement for stormwater management practices that reduce volume and treat stormwater before it enters our waterways and to prevent additional pollution from stream bank erosion.
- The current practices are not keeping pace with climate change, a growing suburban population, and increased development, and that must be remedied in this Draft Permit.

The Department should adopt a numeric approach to pollutant loads (Section II).

- Commenters urge the Department to adopt a numeric approach to reducing pollutant loads to ensure that the MS4 Permit is actually consistent with the Bay TMDL and achieves water quality standards.
- Virginia MS4 permits specify targets for Chesapeake Bay pollutants, calculated precisely to be consistent with the Bay TMDL, and require the permittee to provide a plan for reaching those concrete, pollutant loading reduction goals.
- Public records show that the Department previously planned to take a more metric- and outcome- based approach to meeting the Bay TMDL but removed metrics besides the ISR requirement due to pressure from the regulated community.

[1] Please note that all comments in this letter and the references cited herein are submitted for the administrative record and that all references are immediately available upon request.

The Impervious Surface Restoration ("ISR") Requirement must remain at least twenty percent to avoid backsliding (Section III).

- We strongly urge the Department to retain the twenty percent restoration requirement in the previous permit if the ISR requirement is retained as the sole metric of reducing stormwater pollution.
- The CWA National Pollution Discharge Elimination System ("NPDES") is designed to progressively tighten pollution limits until such time as the discharge of pollution is eliminated.
- Reducing the restoration requirement in this MS4 Permit constitutes impermissible backsliding under the CWA.

The Department should reconsider its reliance on the Maximum Extent Practicable analysis (Section IV).

- We urge the Department to reject the inadequate MEP analysis it conducted in consultation with the regulated community.
- Further, after the Department determines the amount of ISR that is truly practicable, it must determine what additional ISR is necessary to meet water quality standards.
- If the Department develops an impervious surface restoration requirement beyond the twenty percent standard that we urge the Department to retain, this additional requirement should be based primarily on water quality and environmental analysis with less focus on financial capacity, especially in light of the Department findings in its prior Financial Assurance Plan evaluations that the jurisdictions do possess the capacity to meet the twenty percent standard.
- If the Department insists on retaining its current analysis, we strongly urge the Department to embark on an expansive effort to consult and engage with the public and particularly affected communities to discuss the implications of weakening a permit that represents one of the most important climate adaptation, flood control, and urban water infrastructure policies in the state.
- Moreover, in conducting any economic analysis associated with the renewal of the Permit, we strongly urge the Department to evaluate the fiscal and financial implications of delaying or deferring action to adapt Maryland to climate change, and the financial and social implications of foregoing greater green infrastructure investments in urban areas. We are confident that if the Department truly and holistically considered the full fiscal, financial, social, and environmental costs of weakening this permit it would choose a different course.

Nutrient trading should not be allowed in MS4 Permits because it undermines protection of local water quality and is contrary to law (Section V).

- We urge the Department to remove nutrient trading from the MS4 Permit.
- Maryland's nutrient trading in the context of the MS4 Permit is a fundamentally flawed, mathematically unsound program that may prevent Maryland from reaching its TMDL goals and will result in "hot spots" that place yet more burdens on vulnerable communities.

- Maryland's nutrient trading regulations prohibit trading in this context. COMAR 26.08.11.09(D) states that "credits may not be used for the purpose of complying with technology-based effluent limitations."
- The Department appears to be double-counting pollutant reductions, and the trading scheme would increase uncertainty and reduce transparency.
- Trading provisions ignore the substantial benefits to local communities that accompany real, on-the-ground pollution reduction practices and can exacerbate disproportionate impacts of pollution on already vulnerable communities.
- Nutrient and sediment credits do not replace reductions in other pollutants, such as toxic metals, that come with on-the-ground pollution reduction practices.
- The MS4 "trading" provisions will not produce pollutant reductions commensurate with what would have been achieved in their absence – through a more straightforward implementation of the ISR requirement – and thus the provisions represent impermissible backsliding from the prior water quality-based restoration requirements.

Greater enforceability of the ISR requirement and emphasis on stormwater management are required to make the MS4 Permit consistent with Waste Load Allocations ("WLAs") or TMDLs (Section VI).

- Although the fact sheet and the Draft MS4 Permit state that the Permit is consistent with the Phase III Watershed Implementation Plan ("WIP") and therefore the Bay TMDL, they do not support the Department's position that the permit requirements are sufficient to implement WLAs.
- The Draft Permit does not actually have specific nutrient pollutant load reductions, but rather only an impervious acre restoration standard, which can be met in a variety of ways, some of which are unrelated to stormwater.
- The lack of enforceability of the ISR requirement, the weakened iterative approach to implementing the ISR, and the fact that the Permit does not actually require stormwater controls, undermine the Department's conclusory statements that the Permit is consistent with the Bay TMDL. The Department must strengthen each of these aspects of the Permit for it to be consistent with stormwater WLAs.
- The Draft Permit does not actually require any stormwater or volumetric controls and creates no requirement or incentive to prioritize the most beneficial retentive practices that achieve water quantity control as well as water quality benefits.
- The Department must require permittees to be accountable for meeting benchmarks, not merely demonstrating progress toward meeting benchmarks, given that those benchmarks were purportedly designed to assess progress toward the ISR requirement or WLAs.
- The Department must return to the prior standard for when the permittee must make program modifications and add language specifying a standard for such modifications to achieve. We offer specific suggested edits below.
- We urge the Department to create a hierarchy of practices with a minimum for the most beneficial best management practices that actually reduce stormwater volume.

The Draft Permit must be revised so that it does not rely on permittee self-regulation (Section VII).

- Several aspects of the Draft MS4 Permit amount to impermissible self-regulation

- The benchmark framework and program modification provisions for implementing the ISR requirement fail to include sufficient Department oversight.
- The Draft Permit relies entirely on the permittee's own discretion to ensure consistency with applicable WLAs (including stormwater WLAs even though a permittee can choose to comply with the permit without installing any stormwater BMPs at all).
- The Illicit Discharge Detection and Elimination (IDDE) Program includes language that is insufficiently precise to assure proper compliance with the CWA.
- "Significant discharges" need to be defined or each permittee will establish a different definition or none at all.
- "Equivalent" county water quality analyses should not be allowed without further direction or guidance from the Department on what would constitute an "equivalent" analysis.

The Draft Permit should actually account for growth as it claims to do (Section VIII).

- The Chesapeake Bay TMDL includes the fundamental expectation that states account for future pollution growth as they work to reduce pollution from existing sources.
- The Draft Permit asserts that additional loads will be offset through Maryland's Aligning for Growth policies and procedures as articulated through Chesapeake Bay milestone achievement. However, Maryland has failed to adopt an Aligning for Growth policy or to develop WIPs consistent with EPA expectations with respect to accounting for pollution growth.
- Unless a thoughtful accounting for growth policy is adopted, this Draft Permit cannot have policies in place to deal with pollution from new or expanding sources.
- We strongly urge the Department to comment on the development of the accounting for growth policies and, if a deadline for policy adoption is not sufficiently soon, we recommend the final Permit contain new growth offset provisions.

The Draft Permit must adequately account for climate change (Section IX).

- We urge the Department to strengthen numeric storm design standards to account for changed precipitation conditions.
- Recent studies and the Phase III WIP make it clear that the effluent limitations, BMPs, and, by reference, storm design standards contained in the proposed Permit are likely under designed and must be reviewed by the Department to determine whether these practices and standards will perform as necessary in light of more-recently historic and projected precipitation intensity, duration, and frequency data.
- We urge the Department to limit credit eligibility for BMPs exposed to flooding.
- We strongly urge the Department to deny ISR credits for new, proposed BMPs that would be located in a FEMA flood zone (areas not determined to be an area of minimal flood hazard), in areas subject to potential inundation by storm surge from a Category 1 or 2 hurricane, and areas projected to be at risk of inundation from storm surge when sea levels increase by two feet or less.
- We urge the Department to consider climate impacts and changed meteorological conditions in designing provisions and requirements for technology-based effluent limitations.

- We urge the Department to consider revisions to the Draft Permit and future modifications to the reissued permit to account for forthcoming studies and planning processes.

The Draft Permit must address the disproportionate impacts of stormwater (Section X).

- We urge the Department to include provisions in this permit to eliminate the harmful impacts of polluted runoff, address infrastructure inadequacies, and equalize the distribution of benefits from restoration efforts.
- We urge the Department to incorporate actual stormwater restoration and not hollow efforts such as street sweeping that cannot reduce stormwater flow volumes at a rate sufficient to protect residents and their homes.
- We urge the Department to require permittees to include all affected communities in permit implementation through robust and inclusive public outreach efforts.
- We urge the Department to recognize and implement the Biden Administration's policy emphasis on addressing environmental justice inequalities.

I. Maryland's MS4 Permits Have Failed to Reduce Urban Stormwater Pollution.

To date, the TMDL process and the MS4 Permits in Maryland have failed to make reductions in urban stormwater pollution. In fact, stormwater loads have increased. Specifically, between 2009 and 2019, the loads of nitrogen, phosphorus, and sediment delivered to the tidal Bay via urban stormwater runoff increased by 2 to 5 percent. This was explored in detail in a recent report by the Environmental Integrity Project, which is attached to these comments (**Appendix A**).[2] Maryland Counties have invested in a variety of stormwater reduction strategies, and these have had some impact, but progress has been more than offset by new growth in developed land, which increased by over 6 percent between 2009 and 2019.

An increase in the level of regulatory effort is required where a source of pollution is growing when it should be declining. Yet in Maryland we see the opposite. Maryland's Phase III Watershed Implementation Plan ("WIP") revised the 2025 targets - the stormwater loads that Maryland hopes to achieve by 2025. The new targets are 20 to 40 percent higher than the previous Phase II targets, meaning that Maryland is now planning to accept 20 to 40 percent more pollution than it was willing to accept a few years ago. The following table summarizes the change in target loads between the two WIPs. As a point of comparison, we also provide the same estimates for Virginia, where planning targets have become more stringent.

[2] Environmental Integrity Project, *Stormwater Backup in the Chesapeake Region* (Aug. 17, 2020), https://environmentalintegrity.org/wp-content/uploads/2020/08/EIP-Bay-Stormwater-and-Climate-Change-Report-8.17.2020.pdf. (**Appendix A**).

Table 1: **Stormwater pollution targets for 2025 in Phase II and Phase III WIPs (millions of Edge of Tide (EOT) pounds from the "developed" sector).**[3]

	Maryland			Virginia		
	Phase II WIP	Phase III WIP	change	Phase II WIP	Phase III WIP	change
Nitrogen	7.8	9.3	+19%	10.3	9.7	-6%
Phosphorus	0.48	0.66	+37%	1.24	1.19	-4%
Sediment	289	394	+36%	514	476	-7%

As discussed in detail in the attached EIP report, the Phase III WIP targets for nitrogen and sediment are even higher than the TMDL baseline loads from 2009. This is a stunning policy failure. The Bay TMDL is a groundbreaking pollution reduction program, yet the nitrogen and sediment loads from developed land in Maryland will be higher at the end of the TMDL than they were at the beginning.

The Phase III WIP clearly shows Maryland backsliding on its stormwater reduction plans. As discussed in detail in this comment letter, the MS4 Permits are in keeping with the Phase III WIP by relaxing the ISR requirements. According to CAST, where the Department was once assuming 30,000 acres of restored impervious surface by 2025, the Department is now planning for just 199 acres.[4]

Another explanation for the increase in stormwater loads in Maryland is the failure of previous generations of MS4 permits to require green infrastructure and other structural BMPs to control stormwater. The unfettered discretion given to regulated jurisdictions to allow compliance through measures that do not actually address the source of stormwater pollution undermines the purpose of the Permit. If Maryland is to make the required progress under the CWA it must create a MS4 Permit that actually requires compliance obligations to come from structural controls that will reduce stormwater volume. The Permit's BMP prioritization and requirements "must reflect the fact that achieving the necessary pollutant load reduction for nutrients and sediments can only be accomplished with restoration of altered hydrology through the reduction of effective impervious areas."[5]

The Department has the authority to issue a stronger and more enforceable MS4 Permit. Indeed, compared to some MS4 Permits elsewhere in the country, Maryland's MS4 Permits are less detailed, less robust, and do less to actually reduce pollution. See, for example, Appendix C, which highlights the robust elements of two MS4 Permits on the West Coast as compared to this

[3] Data from Chesapeake Assessment Scenario Tool (CAST, https://cast.chesapeakebay.net/), version CAST-2019, scenarios "2025 WIP2" and "WIP 3 Official Version."
[4] CAST-2019, BMP Summary Report.
[5] Dr. Robert Roseen, Expert Report Concerns Regarding The Draft 2020 MS4 Permits ("Dr. Roseen's Report") (Jan. 20, 2021) (attached as **Appendix B**).

Draft Permit.[6] We submit this comparison as an example of what can be done, and urge the Department to take seriously the opportunity to create an MS4 Permit that will truly protect our waterways.

Not strengthening the Draft Permit to ensure water quality is actually improved and protected undermines the strong Congressional mandate in Section 117 (g)(1) of the CWA that "[t]he Administrator, in coordination with other members of the Chesapeake Bay Executive Council ***shall ensure*** that management plans are developed and implementation is begun by the signatories to the Bay Agreement to achieve and maintain… (A) the nutrient goals of the Bay agreement for the quantity of nitrogen and phosphorus entering the Chesapeake Bay and its watershed.[7]

The Baltimore City MS4 Permit is crucial to restoring and preserving water quality in the Baltimore region. The Permit impacts water bodies such as the Jones Falls, Gwynns Falls, and Tidal Patapsco - the health of which is vital to local ecosystems, community, and economy. Nonprofit organizations have been working alongside local and state governments for over a decade to curb the unrelenting pollution coming from our built environment. Despite the significant effort and financial investment, we are not seeing the type of water quality improvement we can and should expect if a successful MS4 Permit reduced sufficient stormwater flowing across our streets and into our streams. Stormwater pollution impacts local residents in a myriad of ways including increasing flooding events and exacerbating sewage overflows. Unfortunately this is unsurprising, given that Baltimore City has been allowed to rely heavily on alternative practices such as street sweeping that do nothing to mitigate the flow and volume of stormwater. It is imperative that this iteration of the MS4 Permit address and reduce the flow of stormwater, particularly as we know precipitation is steadily increasing with climate change.

The sheer volume of stormwater that the City receives during storm events is overwhelming residents in its most vulnerable communities. In the Ednor-Gardens/Lakeside community, residents have suffered unprecedented levels of flooding following storm events. Most notably, a recent storm resulted in 4-5 feet of floodwaters filling the community, overwhelming an MTA bus with passengers on board.[8] Residents report experiencing these flood events for decades, with documentation showing extreme flooding in the area as far back as 1957. This flooding has resulted in property damage to homes and vehicles, and in one instance, a flood event left a woman trapped in her car. Residents have been told by Baltimore City DPW officials that small receiving pipes in the stormwater system are to blame for the extreme flooding events, and that is where the storm sewer infrastructure exists. The EPA's EJSCREEN tool indicates that the Ednor Gardens/Lakeside community has a population that is 87% minority and 25% elderly,[9] placing it in the 80th and 91st percentile respectively, for the state of Maryland.[10] The area also registers in

---

[6] Dr. Richard Horner, Table Comparison of Three MS4 Permits (Dec. 7, 2020) (attached as **Appendix C**).
[7] 33 U.S.C. 1267(g)(1). *See also Am. Farm Bureau Fed'n v. EPA* 792 F.3d. 281, 308 (3d. Cir. 2016) (emphasis added).
[8] Kelsey Kushner, *Maryland Weather: MTA Bus Caught In Floodwater In NE Baltimore With Passengers On Board*, CBS BALTIMORE (July 22, 2020, 11:30 PM) https://baltimore.cbslocal.com/2020/07/22/maryland-weather-bus-caught-in-floodwater-northeast-baltimore/.
[9] Over 64 years of age.
[10] EJSCREEN Report (attached as **Appendix G**).

the 80th percentile or higher in U.S. Environmental Protection Agency (EPA) Region 3 for 10 out of 11 EJSCREEN EJ indices.[11]

The City's failure to properly manage its stormwater infrastructure places the financial burden on residents to recover from damage caused by urban flooding events. For low-income residents this is an increasingly implausible feat. Inefficient stormwater management puts the lives of Baltimore's most vulnerable residents at risk. Such a disservice is in direct contravention to the overtures the Department and the State have made regarding environmental justice as well as clear policy goals of the Biden Administration.[12]

Importantly, data show that water quality is not improving as a result of the MS4 regime in Baltimore City and County. Blue Water Baltimore ("BWB") conducts a long-term water quality monitoring effort that is regionally renowned as the most robust and scientifically rigorous non-governmental monitoring program in the Chesapeake region. The data are used by academic researchers, regulators, policy-makers, and Baltimore-area residents for a variety of purposes ranging from pollution modelling to making informed decisions about how and when to recreate in local waterways. The Baltimore Harbor Waterkeeper, a program of Blue Water Baltimore, began collecting bacteria data in the Inner Harbor in 2009 and expanded the suite of parameters in 2013. BWB now routinely collects scientifically rigorous water quality data for a full suite of parameters[13] at 49 stations throughout Baltimore City and County including the Jones Falls and Gwynns Falls watersheds, as well as the tidal Patapsco River and the tributaries that feed into it.[14] The parameters associated with stormwater in BWB's monitoring program were certified as "Tier II" by the U.S. EPA's Chesapeake Bay Program, allowing the data to be used to inform state, regional, and federal decision-making on water quality issues.

The 7-10 years of high-quality data for each site that BWB monitors in Baltimore City and County provides a dataset robust enough to track progress towards meeting water quality goals in state and federally issued permits, including the MS4 Permit. In April 2020, BWB conducted a statistical trends analysis on each of the 49 water quality monitoring stations. A simple linear regression analysis was performed on every water quality parameter at each monitoring site. Data was parsed by "wet" and "dry" weather to account for any influence by precipitation.[15] Based upon this analysis, statistically significant trends were identified where p-values were less than 0.05, and trends were categorized as "improving" or "worsening" over time based upon the coefficient variable of the resulting equation.

There were several key findings from BWB's data analyses. First, there were improving trends in *Enterococcus* bacteria at 34 of the 49 monitoring stations over a 7-10 year time frame. While we

[11] The area is in the 77th percentile of the EJ Index for wastewater discharge indicator, all other indices register in the 84th percentile or higher for 0.3 mile radius around the identified community. EJSCREEN Report Attachment.
[12] *See generally* Climate 21 Project Transition Memo *available at* https://climate21.org/documents/C21_Summary.pdf and https://climate21.org/documents/C21_EPA.pdf.
[13] With instrumentation, BWB collects readings for water temperature, pH, salinity, conductivity, water clarity, and dissolved oxygen. All water chemistry analyses (i.e. bacteria, nutrient, and chlorophyll a concentrations) are performed by an independent A2LA-certified laboratory.
[14] *See* Baltimore Water Watch, BLUE WATER BALTIMORE, https://baltimorewaterwatch.org/ (last visited Jan. 15, 2021).
[15] Wet weather is defined as the 48-hour period following rainfall of at least 0.5 inches, as recorded by the Maryland Science Center NWS station.

cannot definitively say why bacteria levels are improving, the trend could indicate that sewer replacement and relining projects are working to reduce the amount of sewage flowing into our waterways.

Unfortunately, the story is much different for stormwater. **For parameters associated with polluted stormwater runoff, BWB found statistically significant *worsening* trends at many stream stations.[16] In fact, 23 of the 27 nontidal stations (85%) are showing at least one worsening trend for Total Nitrogen (mg/L), Total Phosphorus (mg/L), Conductivity (uS/cm), or Turbidity (NTU) across all weather types over a 7-year time period**. Conversely, only one station is showing a statistically significant improvement for a single measurement of water health. The long-term trends for the 27 nontidal stations in the Gwynns Falls and Jones Falls streams are summarized in Table 2 below.

Table 2: **Summary of Blue Water Baltimore Statistical Analysis on Trends of Water Quality Parameters Associated with Stormwater at 27 nontidal monitoring stations in the Gwynns Falls and Jones Falls streams from 2013 to 2019.[17]**

	Worsening	**Improving**	**No Change**
Total Nitrogen	14	0	13
Total Phosphorus	6	1	20
Conductivity	11	0	16
Turbidity	7	0	20

Even at sites where key stormwater-related water quality metrics are not worsening over time, they also are not improving -- they are staying the same, showing no significant change in either direction. The conclusion is clear: while we are making progress in our efforts to curb the impacts of sewage pollution in Baltimore City and County, we are missing the mark in our regional approach to stormwater. This dataset covers the previous MS4 Permit term. If practices such as street sweeping, which made up most of Baltimore City's previous MS4 Permit, were a viable solution for reducing nitrogen, phosphorus, and sediment, then we should be seeing in-stream improvements in these water parameters. Simply put, we are not. These practices were not sufficient for the past permit term and they are not sufficient now.

The current practices are not keeping pace with climate change, a growing suburban population, and increased development. BWB's data underscores that we must dramatically increase meaningful stormwater management requirements that reduce stormwater volumes and treat stormwater before it enters our waterways.

---

[16] *See* Blue Water Baltimore presentation "An Afternoon with your Waterkeeper" (Apr. 2020), *available at* https://zoom.us/rec/play/vZUvI7_8_2k3H9SWtgSDUKB6W9W-Kvis0HVIrKcLmEmwASYEYAKhY-FEY-Re6Re9ZKk6cdy95QjkOymQ?startTime=1587585492000&_x_zm_rtaid=eCI5mJGlTZ2ee1AkyPrI9w.1587734087954.ce5727585e02a14f90dba4ba39ebb932&_x_zm_rhtaid=193

[17] Note that Blue Water Baltimore previously submitted its full water quality full data sets to Maryland Department of Environment. Additionally we attach as **Appendix H** maps to illustrate for each station the worsening, improving, or no change results from the regression analysis that Blue Water Baltimore performed.

II. The Department Should Adopt a Numeric Approach to Reduce Pollutant Loads to Ensure that the MS4 Permit is Consistent with Local TMDLs and the Bay TMDL.

Commenters urge the Department to adopt a numeric, concrete approach similar to that adopted by Virginia for implementing the Bay TMDL. Though Commenters have recommended improvements to the ISR requirement throughout this letter, we continue to support a clearer, more enforceable, and more results-driven approach to permit requirements to meet WLAs that does not rely exclusively on ISR. Rather than taking a conclusory approach that relies on multiple levels of assumptions (stormwater practices will be undertaken, permittee will follow the benchmark schedule, permittee will appropriately modify its approach if its practices are noncompliant),[18] Maryland should adopt an approach similar to Virginia's, which specifies targets and then requires the permittee to provide a plan for reaching those concrete, pollutant loading reduction goals. We note that the Department had considered moving toward adopting such an approach early in the Permit renewal process, but apparently abandoned this approach after concerted pushback from the regulated community.[19] **We urge the Department to return the Permit to this prior posture which is both more rational and consistent with the letter and spirit of the CWA.**

We also note that for purposes of remaining consistent with the Bay TMDL, the Biden Administration has flagged EPA's previous evaluation of the Maryland Phase III WIP as one of the items to be reviewed for consistency with President Biden's new Executive Order "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis."[20]

The Virginia MS4 Permits include First Permit Cycle Required Reductions in Loading Rates, calculated in lbs/acre/year for each pollutant of concern from the Bay TMDL:

> "No later than 24-months after the effective date of this permit, the permittee shall develop and submit to the Department for its review and acceptance an approvable phased Chesapeake Bay TMDL Action Plan that includes: . . .
>
> > (e) A determination of the total pollutant load reductions necessary to reduce the annual POC loads from existing sources utilizing Table 2 by multiplying the total existing acres served by the MS4 by the first permit cycle required reduction in loading rate."[21]

---

[18] *See* Section VI of this comment letter for further discussion of the weaknesses of the Draft Permit with respect to these assumptions.

[19] See the documents provided via Google Drive link including all responsive documents from the Public Information Act request to Baltimore City Department of Public Works at BC 0000076.

[20] Biden-Harris Transition. *Press Releases Fact Sheet: List Of Agency Actions For Review. Actions Address the COVID-19 Pandemic, Provide Economic Relief, Tackle Climate Change, and Advance Racial Equity* (Jan. 20, 2021), *available at* https://buildbackbetter.gov/press-releases/fact-sheet-list-of-agency-actions-for-review/.

[21] *See, e.g*, MS4 Permit No. VA0088579, Arlington County, 24–25 (June 26, 2013), *available at* https://environment.arlingtonva.us/wp-content/uploads/sites/13/2013/10/MS4-Permit.pdf; MS4 Permit No. VA0088587, Fairfax County, 24–25 (April 1, 2015), *available at* https://www.fairfaxcounty.gov/publicworks/sites/publicworks/files/assets/documents/pdf/reports/ms4/va0088587-fairfax-permit.pdf.

Table 2 in the Virginia MS4 Permits is a "Calculation Sheet for Determining Total POC Reductions Required During this Permit Cycle for the Potomac River Basin" (based on Chesapeake Bay Program Watershed Model Phase 5.3.2) and it provides a required reduction in loading rate for the first permit cycle. The reduction is given in pounds per acre per year, for nitrogen, phosphorus, and total suspended solids, for both regulated urban impervious and regulated urban pervious surfaces. The calculation sheet requires the permittee to input the Total Existing Acres Served by the MS4, which it then uses to calculate the Total Reduction Required During First Permit Cycle in pounds per year. This approach is much simpler than Maryland's ISR requirement because it simply allocates each jurisdiction a share of pollution to ensure it will meet the Bay TMDL WLA through compliance with the permit. **In contrast to the Virginia MS4 Permits, which are calculated precisely to be consistent with the Bay TMDL, Maryland's approach relies on an ISR requirement backed by conclusory statements and implemented by unenforceable standards.**

The Department appears to have considered metrics for Bay pollutants to include in these MS4 permits, to ensure significant progress toward Chesapeake Bay restoration and local water quality priorities, rather than relying solely on the ISR requirement. In a two-page document titled "Maryland Department of the Environment Municipal Separate Storm Sewer System (MS4) Permit Stormwater Restoration Accounting Principles," dated April 10, 2019, the Department outlined three "surrogate restoration metrics" to be included in the reissued MS4 permits: 1) an impervious acre metric to ensure the continued implementation of upland BMPs; 2) a total nitrogen (TN) metric to ensure significant progress toward Chesapeake Bay restoration; and 3) total suspended solids (TSS) or other locally chosen metrics to ensure progress toward local water quality priorities.[22] Including a separate metric for upland stormwater management BMPs would have ensured a certain level of implementation of these BMPs, as opposed to the Draft Permit, which includes no minimum stormwater management BMPs. The TN metric accounts for other BMPs that may impact Bay nutrients and sediments and the TSS metric focuses on improving local water quality through removal of TSS and associated pollutants.

Commenters find the use of these three surrogate restoration metrics preferable to the exclusive reliance on the ISR requirement, as this approach would be more consistent with the spirit and letter of the CWA and with the findings of two independent experts, Dr. Richard Horner and Dr. Robert Roseen. Dr. Richard R. Horner, an expert in stormwater management, reviewed the Draft Permit and the 2020 Accounting Guidance and assessed their adequacy with respect to protecting and recovering the Chesapeake Bay ecosystem. Dr. Horner produced a report, *Assessment of Maryland's Municipal Separate Storm Sewer System Discharge Permits and Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated*, summarizing his findings.[23] Dr. Robert Roseen, an expert in water resources engineering and stormwater management, reviewed the Permit, reports and data from the Chesapeake Bay Program, the Gwynns Falls TMDL, and the Bay TMDL loading report, among other materials, to evaluate the effectiveness of the permits, as summarized in his expert report (**Appendix B**).[24] Both experts concluded that

[22] Maryland Department of the Environment, MS4 Permit Stormwater Restoration Accounting Principles (April 10, 2019) (included via Google Drive link provided with these Comments, see pp. BC 0000664–665).
[23] Dr. Richard R. Horner, *Assessment of Maryland's Municipal Separate Storm Sewer System Discharge Permits and Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated* (Jan. 19, 2021) ("Dr. Horner's Report") (**Appendix D**).
[24] Appendix B, Dr. Roseen's Report, at 1, 2.

an ISR surrogate alone would be insufficient to reduce stormwater pollution to ensure adequate water quality protection.[25]

III. The New Impervious Surface Restoration Requirement Constitutes Impermissible Backsliding and Must be at Least Twenty Percent.

The CWA is designed to continually reduce pollution over time. The "national goal" of the Act is that "the discharge of pollutants into the navigable waters be eliminated."[26] Thus, for permits that are not designed to achieve zero discharge of pollutants, the CWA envisions, among other things, water-quality based limits designed to ensure consistency with water quality standards and the "interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation."[27] In short, authorities issuing permits under the CWA's National Pollutant Discharge ***Elimination*** System must progressively tighten pollution limits until such time as the discharge of pollution is eliminated. This goal, passed nearly unanimously by Congress, is given effect through several provisions of the CWA and its implementing regulations, notably including the "anti-backsliding" provisions that generally serve to ensure that permits are continually improved and not weakened on the path toward eliminating pollution.[28] As drafted, the new ISR standard constitutes impermissible backsliding under the statute.

As stated by the Maryland Court of Appeals, the "twenty percent restoration requirement" expressed in the expired MS4 Permits was a water quality-based effluent limitation.[29] In issuing the previous permit, the Department stated that "fourth generation" MS4 Permits represented "another step ***forward***" for stormwater management, notably "increasing the impervious area treatment goal."[30] Not only has this Permit not continued the trend of gradually improving MS4 Permits in each subsequent generation,[31] it has instead proposed a rollback of this important water quality-based effluent limitation by eliminating the "twenty percent restoration requirement" and introducing a new lower ISR standard. Notably, the new lower standard was based not on an analysis of impacts to water quality standards or on WLA attainment of relevant TMDLs, but instead based on a dialogue with the regulated entities about how much they think they should have to spend on impervious restoration activities as discussed further below. And based on a review of public records associated with the Draft Permit development process obtained via a Public Information Act request, it is clear that the Department at least began the Permit renewal process with a guiding principle to "maintain impervious area restoration", a

[25] *See* Appendix B, Dr. Roseen's Report, at 4, 19; Appendix D, Dr. Horner's Report, at 11.
[26] 33 USC §1251(a)(1).
[27] 33 USC §1252(a)(2).
[28] 33 USC §1342(o).
[29] *See Md. Dep't of the Env't v. Cty. Comm'rs of Carroll Cty.*, 214 A.3d 61, 100 (Md. 2019).
[30] *See, e.g.*, Baltimore County Fact Sheet, 11-DP-3317, MD0068314, 11 (emphasis added.).
[31] Each jurisdiction has a different number of impervious acres required to be restored and only the number of acres in Baltimore City's proposed permit is arguably greater than what would be required under a continuation of the twenty percent restoration standard. The 2,998 acres, 2,696 acres, and 1,814 acres proposed for Anne Arundel, Baltimore, and Montgomery counties, respectively, are 40%, 55%, and 46% smaller than the acreage required to be restored in the previous permits. Without knowing the new baseline of impervious acreage for each county, it is not possible to specify exactly what percentage of each jurisdiction's impervious surfaces are required to be restored under the proposed permits, but except for possibly Baltimore City, each jurisdiction is required to restore far less than 20%, even using a conservative adjustment to the baseline based on impervious restoration work completed during the previous permit term.

principle discussed in the context of the Department's understanding of the Clean Water Act prohibition against backsliding.[32] Additional records provided in response to this request that were generated at a later date detail how the Department acquiesced to the demands of the regulated MS4 jurisdictions to strike the twenty percent restoration requirement and follow an "MEP-driven" approach.[33]

In issuing the prior Permit, the Department indicated that "twenty percent impervious restoration" would be needed to make "adequate progress toward meeting water quality standards."[34] In its response to comments submitted along with one of the permits, the Department indicated that "compliance with the permit will result in a reduction of pollutant discharges from the County's storm drain system and a framework for achieving WQS."[35] **However, since the issuance of the Permit, the Chesapeake Bay Model, and local water quality monitoring have all established that not only are water quality standards not being met, but that stormwater pollution continues to *increase* overall statewide and in many urban locations**. EPA has also warned the Department in the past that it might formally object to the issuance of MS4 permits in Maryland due to backsliding concerns, based on permit conditions far less important than the twenty percent restoration requirement.[36] It is both illogical and legally impermissible to ***lower*** the ISR standard rather than maintaining or increasing it. The Permit requires the completion of 3,696 acres of impervious surface restoration, which is less than the 4,291 acres required to be restored for the expired permit.[37]

Further, the Department has repeatedly emphasized the importance of "adaptive management" and making "iterative progress" in implementing MS4 programs and TMDLs more broadly. All relevant data and information since the final determination was made to issue the previous permit indicates that ***more*** stormwater management BMPs, not fewer, are needed.

Commenters **strongly urge the Department, at a minimum, to retain the "twenty percent restoration requirement**" in the previous permit.[38] We note that if short-term flexibility is desired to be responsive to fiscal pressures associated with the COVID-19 crisis, there are appropriate ways of handling this challenge, both through Permit provisions and administrative actions. It is not appropriate, however, to codify short-term fiscal decisions into a Permit that will be in effect for at least five years (and likely longer if history is a guide).

IV. The Department Should Reconsider Reliance on the Maximum Extent Practicable Analysis.

We are generally concerned that the primary analysis the Department conducted to determine the level of pollution control for the Permits was its MEP analysis developed in consultation with the

---

[32] See the Google Drive link including all responsive documents from the Public Information Act request to Baltimore City Department of Public Works at BC 0000033.
[33] *Id* at BC 0000018; BC 0000769.
[34] Draft Permit, Part V.C.2.d; Part III.
[35] *See, e.g.,* Basis for Final Determination to Issue Howard County's National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit 11-DP-3318, MD0068322, 3 (Dec. 2014).
[36] EPA, Specific Objection to Carroll County Phase I MS4 Permit MD0068331, 3–4 (September 20, 2012).
[37] Maryland Department of the Environment, Annual Report on Financial Assurance Plans and the Watershed Protection and Restoration Program, 30 (2019).
[38] Maryland Department Of The Environment, Municipal Separate Storm Sewer System Discharge Permit, Part V.C.2.d.

Environmental Finance Center and the regulated jurisdictions.[39] Besides the obvious procedural problem of asking a regulated entity how much regulation it would like to be subject to, we note that this fiscal analysis has been particularly opaque and raises significant concerns for the Commenters, especially when it appears to be undertaken with greater focus and attention than any analysis of water quality or environmental impacts. As an initial matter, we are confused about the purpose of the Department's MEP analysis.

The reason the water quality-based effluent limits are additive to the MEP programs is because the technology-based MEP standard may not be able to assure compliance with water quality standards .[40]

The Maryland Court of Appeals recently noted that the CWA "authorizes permitting agencies to include water quality based effluent limitations in MS4 permits ***without reference to the MEP standard***."[41] The Court of Appeals noted that the MEP standard is "analogous to a technology based effluent limitation" while the ISR standard was, at least in the prior permit, "a water quality based control," which "is a program ***in addition to the MEP level programs***."[42] The MEP standard represents the minimum amount of pollution reduction that the Department must require. If additional reductions are needed to meet water quality standards, including through TMDL implementation, then the Department must impose additional pollution reduction requirements, which could take the form of an additional ISR requirement. Given that the Department just finished defending its MS4 permit before the Court of Appeals on this basis, it is surprising, irrational, and counter to the Court's holding to now claim that the MEP standard controls and constrains the Department's water quality-based ISR condition in the Permit.

This issue is not merely legal quibbling or a distinction without a difference. The Department is seeking to significantly roll back the most important provision in the next generation of its MS4 permit and one of the most important state policies expressed in the Phase II WIP, and it is doing so based upon a misunderstanding of the MEP standard. If the ISR standard is allowed to be governed by the MEP analysis then the Department can rationalize its cost-cutting approach to addressing stormwater pollution and disconnect the ISR standard from the goal of the CWA,

---

[39] Commenters submitted Public Information Act requests to the Department and to various permittees seeking more information on how the Department was defining "maximum extent practicable." Although the Department explicitly refused to fulfill those requests prior to the deadline for these public comments (see **Appendix I**), and Baltimore County never responded at all, Baltimore City did fulfill the request. The public records provided in fulfillment of the request to the City detailed the collaboration between the Department, the Environmental Finance Center, and the regulated entities. We have submitted copies of that PIA fulfillment via Google Drive link with the submission of these comments.

[40] The legislative history of those amendments confirmed this, stating: "With respect to municipal separate stormwater discharges, the conference substitute temporarily prohibits the Environmental Protection Agency and States from requiring permits for certain municipal separate storm sewers for discharges composed entirely of stormwater, in order to provide a sufficient period of time to develop and implement methods for managing and controlling discharges from municipal storm sewers. The relief afforded by this provision extends to October 1, 1992. After that date, all municipal separate storm sewers are subject to the requirements of sections 301 and 402. H.R. Rep. No. 99-1004, at 38 (1987), *reprinted in* 1987 U.S.C.C.A.N. 5, 38. *See also Bldg. Indus. Ass'n of San Diego Cnty. v. State Water Res. Control Bd.,* 124 Cal. App. 4th 866, 880 (Cal. Ct. App. 2004) (rejecting arguments that "under federal law the 'maximum extent practicable' standard is the 'exclusive' measure that may be applied to municipal storm sewer discharges and [that] a regulatory agency may not require a Municipality to comply with a state water quality standard if the required controls exceed a 'maximum extent practicable' standard").

[41] *Md. Dep't of the Env't v. Cty. Comm'rs of Carroll Cty*, 214 A.3d 61, 94 (Md. 2019) (emphasis added).

[42] *Id.* at 87 (emphasis added).

Maryland's water pollution control laws, the WIP, and community efforts to restore water quality.

The rationale for ignoring or repudiating the interpretation of the MEP standard, as defended by the Department's lawyers and subsequently expressed by the Court of Appeals, appears evident in a review of documents obtained by Commenters via Public Information Act. Some documents from 2017 or 2018 included in the PIA response show that the regulated jurisdictions expressed a strong desire from the very beginning of the permit renewal process for this Permit to adopt a new approach in which the restoration requirement would be constrained by the MEP standard, despite the legally questionable grounds for doing so. Indeed, several records provided in the PIA response include presentations and other documents produced by lawyers representing the regulated community and other staff of MS4 jurisdictions that argue for this alternative and constrained interpretation of the MEP standard that only months later was reversed by the Court of Appeals.

Nevertheless, the PIA response documents detail how the Department chose to proceed with an approach consistent with this flawed interpretation of the MEP standard ***even after*** the Court of Appeals confirmed and clarified the appropriate interpretation of the law that directly conflicted with their prior view of the law that the MEP standard governs the permissible scope of water quality-based effluent limitations. In this way, the Department is proceeding in this Permit against its own prior interpretation of the law as well as the holding of the Maryland Court of Appeals in favor of an approach that has been pushed by the regulated community for several years. This represents a perversion of the permit writing process and is contrary to the Department's mission and statutory charge, which is to carry out the Clean Water Act, Maryland's water pollution control statute, and other state law through permits consistent with these laws.

We are not only concerned about the process the Department used to give effect to the MEP standard, but also the effect of that process. In reviewing the documents obtained via PIA, we were highly discouraged to see that various alternative permit conditions proposed by the Department at various points over the last four years that would have been more scientifically rigorous and protective of water quality were ultimately cast aside based on the objections of the regulated community and its desire for an "MEP-driven" Permit. It is unacceptable that the Department has allowed the tail to wag the dog. **Once again, we call on the Department to reinstate more protective provisions found in earlier versions of the Draft Permit that are consistent with the law and not limited by the MEP standard, especially where the standard serves to diminish the primary effluent limitation in the permit and opportunity to protect water quality.**

There are practical implications of this legal wrangling over the MEP standard. Lawyers representing municipalities seeking a small-budget MS4 program argue that an MS4 permit not "driven" or limited by the maximum extent ***practicable*** standard is necessarily ***impracticable***. This is an absurd proposition. The Department, EPA, and other permitting authorities around the country have issued millions of Clean Water Act permits, almost all of which were not subject to the MEP standard. The Department is capable and fully authorized to issue a permit that is both protective of water quality and practicable to implement, whether or not it conducts an MEP

analysis. This is the reasonable approach and understanding of the Department's duty in issuing this Permit, and we are calling on the Department to do that now.

The Department is also not heeding a warning from EPA, which requested in a letter that was referenced by the Court of Appeals that the Department remove "the use of the phrase 'maximum extent practicable' or 'MEP' for several reasons: it is imprecise in its interpretation and thus makes enforcing the terms of the permit more difficult; it could lead to backsliding; and it rightfully is a determination to be made by the permitting authority in the permit's terms."[43]

Commenters are strongly opposed to the premise behind this MEP analysis the Department recently conducted. Under its organic statute, the Department "is responsible for the ***environmental interests*** of the people of the State."[44] The Department is also charged with implementing the policy of the state to "improve, conserve, and manage the quality of the waters of this State"[45] as well as carrying out the CWA's objective to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[46] It is therefore confusing and disconcerting to see Maryland's agency tasked with protecting our environmental interests relying so extensively on fiscal considerations to devise the principal pollution reduction condition in the MS4 permit, especially when such analysis is used to roll back a critical protection for water quality, public health, and climate resilience.[47]

It is neither within the Commenters' nor the Department's area of expertise to conduct fiscal analysis or make judgments about how much of a jurisdiction's budget should be devoted to stormwater management. After all, as the MS4 Permit rightly points out "[l]ack of funding does not constitute a justification for noncompliance with the terms of this permit."[48]

The Maryland General Assembly recently spoke to the need to provide adequate funding to support implementation of the ISR provision that is critical to meet the state's water quality goals for the Chesapeake Bay and urban waterways. In amending the law to provide more flexibility for jurisdictions regarding ***how*** they pay for stormwater permit implementation, Chapter 151 of 2015 nevertheless established an elaborate framework for ensuring that such funds ***would indeed be raised*** in order to meet the significant needs for reducing stormwater pollution in Maryland. The legislature in no way expressed a desire to retreat on the state's efforts to curb polluted urban runoff, reduce flooding, or begin adapting the state to the impacts of climate change. To the contrary, Chapter 151 required the Department to periodically report on the financial capacity

---

[43] EPA, Specific Objection to Carroll County Phase I MS4 Permit MD0068331, 3–4 (September 20, 2012).
[44] Md. ENVIRONMENT Code Ann. § 1-402(b)(4) (emphasis added).
[45] Md. ENVIRONMENT Code Ann. § 9-302(b)(1).
[46] 33 U.S.C. § 1251(a).
[47] Commenters note that a document provided in response to a Public Information Act request to Baltimore City describes how the MEP analysis would "drive the development of a portfolio of planned projects to be implemented across the five years of the permit term. That portfolio of planned projects would, in turn, translate into specific metrics ... for (1) impervious area treatment, (2) reduction in total nitrogen, and (3) local water quality improvement that would reflect
progress toward local TMDLs (such as sediment reduction) or other goals as proposed by the permittee." (Referencing an email dated 4/9/2019 summarizing a meeting between the Department and "MS4 managers"). Commenters have attached the responsive documents to these comments via a Google Doc link and the referenced document is on page 498.
[48] Draft Permit, Part IV.H.2.

of permittees to meet the twenty percent restoration requirement; the Department has conducted these assessments and repeatedly found that the permittees do, in fact, have the fiscal capacity to meet the twenty percent restoration requirement. **Thus, Commenters urge the Department to reconsider how it relies upon the so-called "MEP" analysis it conducted in preparation for this permit**.

If the Department intended to embark on the consequential process of rolling back one of the most important water quality policies in Maryland it should have done so transparently and in a way that maximizes public participation. This is particularly important given the significant implications for spending on urban water infrastructure. Commenters note that the Department did not consult with the Commission on Environmental Justice and Sustainable Communities and the permit fact sheet does not indicate that any thought was given to the negative consequences on Maryland's most vulnerable communities that would result from this decision to disinvest in these areas.

Commenters also question which criteria the Department considered in determining what level of effort should constitute the maximum extent practicable. Beyond pointing out that most jurisdictions were deemed to have met the twenty percent restoration standard (and the implication that it is therefore feasible to do so and well within the ***maximum*** extent practicable), Commenters would also like to understand whether the Department considered fiscal criteria like tax capacity, tax effort, bond ratings, and the percentage of local budgets that local MS4 spending represents. These considerations should not be relevant to the issuance of this permit, but if the Department insists on inserting fiscal analysis into its process of establishing water quality-based effluent limitations, then we would urge the Department not to slash pollution control standards until it is absolutely certain that the standards exceed what most fiscal analysts would deem truly the "maximum extent practicable." Any analysis used to establish the primary effluent limitations in the Permit should be thoroughly described in the Permit's fact sheet and should have been subject to public review and comment.

Finally, we urge the Department to describe the extent to which the cost of meeting any additional requirements associated with the expired permit were factored into the MEP analysis it conducted for the issuance of this Permit. For example, subsection IV.E.9 of the proposed Anne Arundel County Permit requires the county to "replace" the "trading credits" associated with "2,607 equivalent impervious acres" because the county "acquired" that many trading credits during the previous permit term. We want to ensure that this additional ISR work to replace credits associated with a nutrient "trade" is ***in addition to***, and not a part of, the total ISR requirement that the Department deemed to represent the maximum extent practicable. Otherwise, those counties that chose to "buy" their way into compliance with the expired permits (we note that there was no actual "purchase" of credits at all for the most part and no actual pollution reductions) would be allowed to get away with investing in even less ISR pollution reduction projects in the current Permit as a result of carrying the previous permit's obligations forward. **We request the Department confirm that "trading credits" were not considered as part of the MEP analysis.**

So far, the Department has determined what it believes to be practicable, and set the ISR requirements accordingly. These technology-based permit conditions are only part of the

Department's responsibility. The Department must go further, and determine what additional requirements - ISR or otherwise - are necessary to meet water quality standards.

V. Allowing Nutrient Trading In MS4 Permits Undermines the Goal of Improving Local Water Quality and Is Prohibited by Maryland's Regulations.

Nutrient trading, particularly as it has been implemented by Maryland in the context of MS4 Permits, is a fundamentally flawed, mathematically unsound program that may prevent Maryland from reaching its TMDL goals and will result in "hot spots" that place yet more burdens on communities already suffering disproportional pollution impacts. There are at least six major problems with the nutrient trading provisions of the MS4 permits, as discussed below.

First, and most fundamentally, Maryland's nutrient trading regulations prohibit trading in this context. COMAR 26.08.11.09(D) states that "[c]redits may not be used for the purpose of complying with technology-based effluent limitations." The Permit fact sheet explains that the Department calculated the ISR requirements based on the MEP analysis. MEP is a form of technology-based effluent limitation. As such, it represents the ***minimum*** amount of pollution reduction that each permittee must achieve, and it is meant to be technology-forcing, in order to generate the maximum possible pollution reductions from the permittees. The Department is prohibited from allowing trading to comply with the technology-based effluent limitations, including the new ISR requirement.

Second, the Department appears to be double-counting pollutant reductions. When wastewater treatment plants make pollution control upgrades, they immediately begin to report lower pollutant loads through their discharge monitoring reports. The Chesapeake Bay Program uses these discharge monitoring reports to inform the model used to track progress toward the TMDL goals. If a wastewater treatment plant made upgrades in 2012, then those pollutant reductions have already been counted toward Maryland's total pollution load. When Maryland allows a permittee to purchase credits from that plant, in lieu of ISR or any other obligation, it is counting the same pollutant reduction twice – once on behalf of the wastewater treatment plant, and again on behalf of the MS4. This is explained in more detail in the attached 2019 Environmental Integrity Project report (**Appendix E**).[49] This is a major mathematical error in the Department's approach, and it gets Maryland no closer to its TMDL goals. An acre's worth of paper credits is not equal in value to an acre of restored impervious surface. The permitted activities will not meet the sector's wasteload allocation, and the Permit will not protect water quality. Instead, the Permit is simply weaker, and this represents impermissible backsliding from previous requirements.

We appreciate that the Department established caps on trading with wastewater treatment plants, but this is not enough. The Department would have to require that any credits from wastewater treatment plants be generated by new pollution-control upgrades.

Third, the trading scheme would increase uncertainty and reduce transparency. The Draft Permit would allow Baltimore City to continue to buy credits to cover the impervious surface restoration shortfall from the last permit cycle. This requires each county to secure and purchase credits

[49] *See, e.g.,* Environmental Integrity Project, *Pollution Trading in the Chesapeake Bay: Threat to Bay Cleanup Progress*, 14-18, Attachment B 23-25, *available at* https://environmentalintegrity.org/wp-content/uploads/2019/08/Pollution-Trading-in-the-Chesapeake-Bay.pdf (**Appendix E**).

every year, and requires the independent verification of these credits every year, until the county ultimately restores the impervious surface (or implements some other alternative). The Department has not indicated an end to this cycle, and the cycle has already been carried over from one permit term to another. This creates an ongoing, annual administrative burden for the permittees and for the Department with no corresponding on-the-ground benefit. Instead of tangible pollution control practices, the permittees will be securing credits for pollutant reductions that may not cover the underlying impervious surface obligation. With the data currently available to the public, it is difficult to see if the credits are adequately verified, and the BMPs supporting each credit may fail to generate the expected reductions.

Fourth, the Permit fails to account for uncertainty in the generation of nonpoint credits. As explained in much greater detail in the EIP report,[50] Maryland's nutrient trading regulations fail to require an uncertainty ratio for trades between nonpoint credit generators (such as farms) and MS4 credit purchasers, despite an EPA policy requiring the use of an uncertainty ratio for all trades involving nonpoint credits. The uncertainty ratio policy is based on the fact that nonpoint BMPs are likely to underperform. This problem is amplified by climate change, which causes more intense precipitation events that can overwhelm a BMP or otherwise reduce the ability of a BMP to mitigate pollution – a problem that the Department has recognized.[51]

The MS4 "trading" provisions, in addition to being contrary to regulatory mandate, will not produce pollutant reductions commensurate with what would have been achieved in their absence—through a more straightforward implementation of the impervious surface restoration requirement or through a numeric load reduction approach—and thus the provisions represent impermissible backsliding from the prior water quality-based restoration requirements.

Fifth, the trading provisions ignore the substantial benefits to local communities that accompany real, on-the-ground pollution reduction practices and can exacerbate disproportionate impacts of pollution on already vulnerable communities. When jurisdictions are encouraged to outsource their pollution reduction activities rather than invest in green infrastructure projects that allow stormwater to infiltrate, the local communities lose out on the numerous co-benefits that the Department has written extensively about. Nutrient and sediment credits cannot replace these benefits. We have repeatedly asked the Department to cap the amount of impervious restoration "credit" that a permitted jurisdiction can claim from nutrient trading or alternative practices or to set a minimum amount of reduction that must happen from green infrastructure. While we are pleased to see that the Department has set a cap on the amount of credits that MS4s can purchase from wastewater treatment plants, the permits do not put a cap on trading more generally.

Finally, as noted by nationally renowned stormwater experts such as Tom Schueler and Dr. Richard Horner, stormwater BMPs that capture and retain sediment-laden stormwater not only reduce TSS, but also a myriad other dangerous pollutants that bind to sediment.[52] Nutrient and

[50] *See id.* at 18, Attachment B, 15-22.
[51] *See, e.g.*, Maryland Department of Environment, Maryland's Phase III Watershed Implementation Plan (WIP) to Restore Chesapeake Bay by 2025 ("Phase III WIP"), 56 (Aug. 23, 2019), *available at* https://mde.maryland.gov/programs/Water/TMDL/TMDLImplementation/Documents/Phase%20III%20WIP%20Report/Final%20Phase%20III%20WIP%20Package/Phase%20III%20WIP%20Document/Phase%20III%20WIP-Final_Maryland_8.23.2019.pdf.
[52] Appendix D, Dr. Horner's Report, at 11; *see also,* Chesapeake Stormwater Network, Tom Schuler, *Urban Toxic Contaminants: Removal by Urban Stormwater BMPs*, *available at*

sediment credits cannot replace reductions in other pollutants, such as toxic metals, that come with on-the-ground pollution reduction practices. This overlaps with the Department's obligation to ensure that permittees meet the technology-based MEP standard. MEP is designed to minimize all stormwater pollutants, not just nutrients and sediment. In the absence of trading, each permittee must minimize the discharge of all stormwater pollutants, including toxic metals and organic pollutants. Nutrient and sediment credits are simply not equivalent to BMPs—they do nothing to reduce pollutants other than nutrients and sediment, nor do they reduce stormwater flow volume, which contributes to downstream effects such as riverbank erosion. Allowing nutrient and sediment credits in lieu of real BMP implementation means that permittees will be implementing fewer BMPs. In other words, they will be making less of an effort to reduce stormwater, and plainly will not be reducing other pollutants to the Maximum Extent Practicable. This violates the purpose of the CWA, violates the technology-forcing mandate of the Act, and violates the Act's specific requirements. For all of the above reasons, the Department must eliminate the trading option in the MS4 permits.

VI. The MS4 Permit Cannot be Consistent with WLAs/TMDLs Without Greater Enforceability of the ISR Requirement and Prioritization of Stormwater Management Practices.

The draft MS4 Permit relies entirely on the ISR requirement to meet the pollutant reductions necessary to be consistent with the Maryland Phase III WIP for the Chesapeake Bay TMDL and 2025 nutrient load targets, and for local TMDL implementation targets. But, the ISR provisions of the draft MS4 Permit cannot support the Department's conclusory statements that they comply with the law.

Under CWA regulations, BMPs and programs implemented pursuant to an MS4 permit must be consistent with the assumptions and requirements of applicable stormwater WLAs developed under EPA established or approved TMDLs.[53] Although the fact sheet and the Draft Permit conclude that the permit is consistent with the Phase III WIP and therefore the Bay TMDL,[54] they do not support the Department's position that the permit requirements are sufficient to implement the WLA. Indeed, the permit does not actually have specific nutrient pollutant load reductions, but only a 3,696 acre ISR standard, which can be met in a variety of ways, some of which are unrelated to stormwater.

Even assuming that 3,696 impervious acres of restoration were an appropriate standard to be consistent with the stormwater WLA, the permit conditions are not likely to result in compliance with this standard. Without holding the permittee accountable to actually meet the ISR requirement, the permit terms cannot be considered consistent with the assumptions and requirements of the WLAs. The Draft Permit makes unsupported conclusory statements that it is consistent with the Bay TMDL, but the lack of enforceability of the ISR requirement, the weakened iterative approach to implementing the ISR, and the fact that the permit does not

https://www.chesapeakewea.org/docs/Session_1A_Tom_Schueler.pdf (last accessed January 13, 2021) (**Appendix F**).

[53] 40 CFR 122.44(d)(1)(vii)(B)("When developing water quality-based effluent limits under this paragraph the permitting authority shall ensure that:. . .(B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7").

[54] Baltimore City Fact Sheet, 20-DP-3320, MD006829, 11.

actually require stormwater controls, undermine these statements. Additionally, the lack of actual stormwater management requirements allows a permittee complete discretion to undertake exclusively non-stormwater management BMPs.

In preparation for these comments, Commenters submitted a Public Information Act ("PIA") request to the Department in October 2020 (PIA No. 2020-02374) requesting more information to explain the analysis the Department used to come to the conclusion that the permit requirement meets local TMDL requirements. We requested this information specifically so that we could prepare meaningful comments on the draft tentative determination. To date, we have not received a fulfillment of our PIA request from the Department. Instead, we received a baffling email[55] containing circular logic from the Department staff indicating that they would not be providing a timely response to the PIA and that in fact they would provide no response prior to the January 21, 2021 due date for comments on this Permit. The rationale they provided was that they anticipated that whatever responses the Department will provide in response to the very comment letter that we are submitting now will answer the questions we posed in our PIA.

We submitted the same request to the Baltimore City Department of Public Works and received responsive documents that confirm that the primary water quality based-effluent limitation in the Permits - the ISR requirement - were based on an evaluation of fiscal and financial considerations, not based on water quality standards, TMDL targets, or waste load allocations. To use the term repeatedly emphasized by those in the regulated community, the development of the BMP portfolio to be implemented under the Permit was "MEP-driven" but definitely not TMDL-driven given that the vast majority of communications and analysis involved fiscal considerations rather than water quality factors.[56]

We submitted the same request to the Baltimore County Department of Public Works and have not received a response.

A. The Draft Permit is not consistent with the Phase III WIP, and therefore the Bay WLAs, and local TMDLs because it does not hold the permittee accountable for meeting the ISR requirement.

The Draft Permit states that compliance with the permit conditions constitutes "adequate progress toward compliance" with EPA established or approved stormwater WLAs for this permit term.[57] Given that the ISR requirement is the only permit condition that addresses compliance with the Bay TMDL, the Draft Permit relies entirely upon this requirement to support its conclusion that the Permit satisfies adequate progress toward compliance with the

[55] **Appendix I**, December 08, 2020 Email from Amanda Redmiles, Interdepartmental Information Liaison, the Department Office of Communications to Angela Haren, Senior Attorney, Chesapeake Legal Alliance.
[56] A number of documents sent by "MS4 managers" and the Maryland Association of Counties to the Department use the term "MEP-driven" to describe the "BMP portfolio" that the regulated entities insisted on being subjected to under the terms of the new permit. Neither consistency with TMDLs/WLAs, nor any consideration of water quality seems to have been contemplated based on a review of these documents, which have been transmitted to the Department as an attachment to these comments and which should be considered as part of the record associated with the issuance of this Permit.
[57] Draft Permit, Part III.3.

Bay TMDL. Accordingly, the ISR requirement for the permittee purports to be established at the level at which the Permit is consistent with the stormwater WLA of the Bay TMDL, as set forth in the Maryland Phase III WIP. Yet, the Draft Permit simultaneously allows a permittee to only achieve some portion of the ISR requirement, by using the "adequate progress" standard for meeting the Department's approved annual benchmarks and final stormwater WLA implementation dates. It is unlikely that a permittee will reach its ISR requirement when it is only expected to make *progress* toward the interim benchmark levels and the final stormwater WLA implementation dates. The unenforceable benchmark framework and weak iterative approach as written further decrease the likelihood of a permittee meeting the ISR requirement.

1. The Department must hold permittees accountable for meeting benchmarks, not merely demonstrating progress toward meeting benchmarks.

According to the Draft Permit, the annual benchmarks are quantifiable goals or targets "to be used to assess progress toward the impervious acre restoration requirement or WLAs, such as a numeric goal for stormwater control measure implementation."[58] If that is the case, then merely demonstrating progress toward meeting benchmarks is insufficient to ensure compliance with the CWA or regulations.[59] The permittee's Citywide Stormwater TMDL Implementation Plan, as required by the Permit, must provide an updated list of BMPs, programmatic initiatives, and alternative control practices, as necessary, "to demonstrate adequate progress toward meeting the Department's approved benchmarks and final stormwater WLA implementation dates."[60] Why must the permittee only describe practices necessary to demonstrate **progress** toward meeting goals that were set to keep the permittee on track toward achievement of the ISR requirement? If a permittee only demonstrates "adequate progress" toward the interim benchmarks, there is nothing to ensure that the permittee will ever actually meet the benchmarks or, consequently, the target for the permit term. Commenters recommend the following: ". . .as necessary, to demonstrate achievement of ~~adequate progress toward meeting~~ the Department's approved benchmarks and adequate progress toward meeting final stormwater WLA implementation dates; . . ."

Similarly, the permittee must submit annual reports of its progress, which must include "[t]he identification of water quality improvements and documentation of attainment and/or **progress toward attainment** of schedules, benchmarks, deadlines, and applicable stormwater WLAs developed under EPA established or approved TMDLs; and . . ."[61] When the MS4 Permit refers to interim deadlines, schedules, or benchmarks, as it does here, the reporting of progress should include documentation of **actual attainment**. Commenters propose the following revision— annual progress reports to include: "The identification of water quality improvements and documentation of attainment ~~and/or progress toward attainment~~ of schedules, benchmarks, deadlines, and adequate progress toward attainment of applicable stormwater WLAs developed under EPA established or approved TMDLs; . . ." Commenters also recommend that the Department require third-party certification of attainment of benchmarks and schedules, or

[58] Draft Permit, Part IV.E.4.
[59] *See* 40 C.F.R. 122.4(a) ("No permit may be issued: (a) When the conditions of the permit do not provide for compliance with the applicable requirements of CWA, or regulations promulgated under CWA").
[60] Draft Permit, Part IV.F.3.c.
[61] Draft Permit, Part V.A.1.e (emphasis added.)

adequate progress toward attainment of stormwater WLAs, to include in the permittee's annual reports.

2. The Draft Permit's benchmark framework lacks all accountability, without any possibility of enforcement.

When the Department shared an early draft of the new Permit with Commenters, we were encouraged by the creation of an enforceable schedule for meeting the ISR requirement. However, we are equally discouraged now to see that this schedule in subsection IV.E.4 has been weakened to its current form, with the schedule deemed to be nothing more than unenforceable benchmarks. **We note that unenforceable language has sadly become a hallmark of permits issued by the Department and urge the Department to strike this new language introduced since the draft shared in July**. At the very least, if the Department chooses not to make annual progress levels enforceable, it ought to institute an enforceable corrective action sequence to give some effect to the benchmark levels in this subsection. Otherwise, what point is there to including these benchmarks at all? Without triggering some additional action to accelerate progress toward the ISR requirement in the permit, local jurisdictions will simply be allowed to fall further and further behind, almost guaranteeing noncompliance with the ISR requirement by the end of the permit term. At present, there is no accountability in this permit and little opportunity to enforce key provisions.

Benchmarks are intended to be quantifiable goals or targets, but there is no permittee accountability or enforceability built into the Draft Permit language. Rather, the benchmark framework undermines the Department's and the public's ability to hold permittees to the benchmark schedule. The Draft Permit explicitly states that benchmarks "generally are not considered to be enforceable" as they are intended to be an adaptive management aid. Without any specified, structured response for when a permittee fails to meet its benchmarks, the role of the benchmarks as an adaptive management aid is nearly useless. The Draft Permit provides that if a permittee fails to meet a benchmark for a particular year, the permittee "should take appropriate corrective action to improve progress toward meeting permit objectives."[62] This standard has no teeth. Dr. Richard Horner noted in his report that rigorous adaptive measures are a common feature of more protective MS4 permits.[63]

Commenters strongly recommend several revisions to strengthen these adaptive measures. First, we urge the Department to replace "should" with "must" to create a mandate for a response upon failure to meet a benchmark. Second, the standard "appropriate corrective action" must be defined. What constitutes an appropriate action and who determines what is appropriate? Finally, the stated goal of such corrective action—"to improve progress toward meeting permit objectives"—does not actually require the permittee to get back on track to meet the next benchmark but only to improve progress from its prior implementation level. Nothing in this standard would allow the Department or the public to hold the permittee accountable for meeting the benchmark goals or even for taking action upon failure to meet these goals. This weak standard in response to a failure to meet benchmarks allows the permittee to fall further and further behind, making permit compliance extremely unlikely.

[62] Draft Permit, Part IV.E.4.
[63] Appendix D, Dr. Horner's Report, at 15.

Failure to meet a benchmark should trigger concrete corrective action steps with a specified, concrete goal and consequences for failure to meet that goal. Commenters recommend the following changes: "If a benchmark is not met, the County ~~should~~ must take appropriate corrective action to ensure that the County achieves the next scheduled benchmark~~to improve progress toward meeting permit objectives~~." Appropriate corrective action for purposes of this standard should be defined, setting forth specific steps to be taken to return the County to a position where it could meet the benchmarks and the ISR requirement by the end of the permit term.

To hold the permittee accountable for taking corrective action in the event that it fails to meet a benchmark, **Commenters recommend that the Department explicitly state that failure to take appropriate corrective action in these circumstances constitutes a permit violation.** Permittee failure to meet the next scheduled benchmark, whether or not corrective action was taken, should also constitute a permit violation.

3. The iterative approach to implementing the ISR requirement has been significantly weakened, is legally questionable, and is unlikely to result in program improvements.

The iterative approach in the Draft Permit to implementing the ISR requirement does not ensure that a permittee will comply with the permit terms that purportedly ensure consistency with TMDL WLAs. Specifically, section V.A.3 requires: "[w]here programs are determined by the City to be ineffective, modifications shall be made within 12 months that effectively show progress toward meeting stormwater WLAs developed under EPA approved TMDLs." This standard for when the permittee must make BMP and program modifications is significantly weaker than the language in the prior permit, and is problematic for several reasons, to the point of being ineffectual.

The prior Baltimore City 2013 MS4 Permit required the permittee to make modifications if its annual report did not both 1) demonstrate compliance with the permit and 2) show progress toward meeting WLAs.[64] The Maryland Court of Appeals found this standard sufficient to meet the requirement that effluent limits be consistent with approved WLAs, based in part on the "reporting, assessment, and adaptation to ensure that the Counties' BMPs will make progress to achieve WLAs."[65] The court contrasted these reporting requirements with the circumstances in *Environmental Defense Center, Inc. v. US EPA ("EDC")*, where the Ninth Circuit determined that the MS4 permitting scheme there did not prevent an operator of a small MS4 from "misunderstanding or misrepresenting its own stormwater situation."[66] In concluding that the permit effluent limits were consistent with approved WLAs, the Maryland Court of Appeals relied upon the iterative approach set forth in the prior Baltimore City 2013 MS4 Permit, which

[64] Maryland Department of the Environment, National Pollutant Discharge Elimination System, Municipal Separate Storm Sewer System Discharge Permit, Baltimore City 2013 MS4 Permit, IV.A.3. ("Because this permit uses an iterative approach to implementation, the City must evaluate the effectiveness of its programs in the Annual Report. BMP and program modifications shall be made if the City's Annual Report does not demonstrate compliance with this permit and show progress toward meeting WLAs developed under EPA approved TMDLs.")
[65] *Maryland Dep't of Env't v. Anacostia Riverkeeper*, 134 A.3d 892, 922 (Md. 2016).
[66] *Id.* at 922 (citing 344 F.3d 832, 858 (9th Cir. 2003)).

required program modifications if the annual report failed to demonstrate permit compliance and show progress toward meeting WLAs.

The Draft Permit removes the accountability that the Maryland Court of Appeals determined was distinct from the insufficient permitting scheme in *EDC*. Specifically, the court's finding that the reporting and adapting ensured the Counties would make progress to achieve WLAs is no longer applicable because the Draft Permit only requires modifications where programs are determined to be "ineffective," rather than where the report does not demonstrate permit compliance and show progress toward meeting WLAs. There is a large gap in deficiencies of a permittee's programs for which the permittee could not demonstrate permit compliance and show progress toward meeting WLAs but which the permittee will not consider "ineffective." Based on the reasoning of the Maryland Court of Appeals in *Maryland Department of the Environment v. Anacostia Riverkeeper*, it is unlikely that the new standard is consistent with approved WLAs.

Additionally, the revised language is imprecise and unclear and gives the permittee too much discretion. The Draft Permit explicitly authorizes the permittee to determine whether its programs are "ineffective." If the permittee does not determine its programs are ineffective, no modifications are required. A citizen could not contest whether these programs are ineffective because it is defined to be according to the City. Moreover, as noted above, the standard "ineffective" is far weaker than the standard of demonstrating permit compliance and showing progress. Rather than requiring modifications for the absence of successful implementation of permit requirements, the Draft Permit only requires modifications when the permittee's programs are wholly failing. Because ineffective is not defined, the permittee could interpret this to mean that the programs are not working to reduce stormwater pollution at all, which is in stark contrast to having to affirmatively demonstrate compliance. Whereas "[d]emonstrate compliance with the permit" is at least, in theory, a standard that the permittee, the Department, the public, or a judge could objectively gauge and evaluate, "ineffective" is vague and unenforceable.

The Department should return to the prior standard for when the permittee must make program modifications and should add language specifying a standard for such modifications to reach. Commenters recommend the following:

> ~~Where programs are determined by the County to be ineffective,~~ BMP and program modifications shall be made within 12 months if the City's Annual Report does not demonstrate compliance with this permit and show progress toward meeting WLAs developed under EPA approved TMDLs. Such modifications must be sufficient to demonstrate compliance with the permit and ~~that effectively~~ show progress toward meeting stormwater WLAs developed under EPA approved TMDLs.

B. The Draft Permit is not consistent with stormwater WLAs because it does not require stormwater controls.

The Draft Permit does not actually require any stormwater controls. First and foremost, this MS4 Permit must ensure compliance with water quality standards. In its 1999 stormwater rulemaking implementing the statutory MEP standard, EPA confirmed that under its existing regulations, "[40 C.F.R.] Sec 122.44(d) is a general requirement that each NPDES permit shall include

conditions to meet water quality standards."[67] Using a numeric approach to reduce pollutant loads is the best way to ensure that the MS4 Permit is consistent with local TMDLs and the Bay TMDL.

The Draft Permit authorizes the permittee to decide how to comply with the Permit and the Department has deemed any way of meeting the ISR requirement to be adequate progress toward compliance with WLAs. This includes the stormwater WLA that is set forth in the Maryland Phase III WIP. A permittee may comply with the ISR requirement by "implementing stormwater BMPs, programmatic initiatives, or alternative control practices in accordance with the 2020 Accounting Guidance."[68] This is neither a condition nor even an approach capable of "meet[ing] water quality standards."

The 2020 Accounting Guidance includes several alternative best management practices that do not involve managing stormwater, including street sweeping, storm drain cleaning, and stream restoration.[69] The Department has assigned these practices equivalent impervious acre conversion factors, allowing a permittee to receive a certain amount of credit toward its total ISR requirement for implementing any of the practices in the 2020 Accounting Guidance. The Permit should be very clear that the Guidance should not be relied on for calculating credit for these alternative BMPs.

In effect, the 2020 Accounting Guidance authorizes a permittee to satisfy the ISR requirement solely by implementing street sweeping, stream restoration, or other practices that do not impact stormwater volume. Indeed, for BMPs implemented during the prior permit term (FY 2014-19), Baltimore City implemented mostly street sweeping, with 86% of its BMPs programmatic practices and only 11% upland BMPs.[70] If a permittee had chosen to implement exclusively non-stormwater BMPs, which it is authorized to do under the Draft Permit and 2020 Accounting Guidance, how would those practices make progress toward compliance with the stormwater WLA? It cannot be considered adequate progress to meet the stormwater WLA if the practices selected do not actually manage stormwater.

Dr. Horner's Report describes the practical effect of the lack of differentiation among the permissible BMPs.[71] **The Department's current approach creates no directive or incentive to**

---

[67] *See* EPA, "National Pollutant Discharge Elimination System-Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges," 64 Fed. Reg. 68722, 68770 (Dec. 8, 1999).

[68] Maryland Department Of The Environment, Municipal Separate Storm Sewer System Discharge Permit, Baltimore City 20-DP-3315, MD0068292 ("Draft Permit or Permit,"), Part IV.E.3.

[69] Maryland Department of the Environment, Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits ("2020 Accounting Guidance"), 11, 22 (June 2020), *available at* https://mde.maryland.gov/programs/Water/StormwaterManagementProgram/Documents/2020%20MS4%20Accounting%20Guidance.pdf.

[70] Maryland Department of the Environment, Annual Report on Financial Assurance Plans and the Watershed Protection and Restoration Program 2019, 10 (Feb. 2020), *available at* https://mde.maryland.gov/programs/Water/StormwaterManagementProgram/Documents/FAP-2019/2019%20Stormwater%20Financial%20Assurance%20Plan%20Annual%20Report%20to%20GovernorMSAR10954.pdf. Programmatic Practices include street sweeping, inlet cleaning, and storm drain vacuuming, while Upland Practices include wet ponds, swales, infiltration, dry wells, rain gardens, green roofs, permeable pavement, rainwater harvesting, and submerged gravel wetlands. *Id.* at 3.

[71] Appendix D, Dr. Horner's Report, at 11.

prioritize the most beneficial or efficient retentive practices that achieve water quantity control as well as water quality benefits. For example, as Dr. Horner's report describes, the same credit would be awarded for "a bioretention cell with an impermeable liner and underdrain to a surface discharge as for open-bottom, fully infiltrating bioretention," although the "former device only fractionally reduces the runoff quantity and always still discharges pollutants to surface waters, while the latter completely attenuates both."[72] Dr. Horner points to an existing MS4 Permit that incorporates a standard designed to retain "91% of the entire runoff volume over a multi-decade period of record." This standard has been in place for years, thus signifying in his expert judgment the feasibility of such a standard in the regulatory context.[73]

In fact, Commenters submit that reliance on certain practices under the 2020 Accounting Guidance for calculating ISR is inconsistent with the mandate of Section 117 of the CWA and the Bay TMDL as upheld by the Third Circuit.[74] Nevertheless, if the Department insists on continuing to use practices in the 2020 Guidance, Commenters have a strong recommendation for improvement. The Department can avoid the problematic possibility of a permittee using all or mostly non-stormwater management practices, which are often less expensive than structural stormwater management practices, by creating guardrails around certain categories of practices as well as a hierarchy of practices with a minimum for the most beneficial BMPs. Dr. Horner's report describes this hierarchical approach in detail. Dr. Horner outlines his proposed Best Management Practices Hierarchy in Exhibit 1 to his expert report (**Appendix D**).[75] Similarly, Dr. Roseen found deficiencies associated with the lack of structural controls that actually retain and infiltrate stormwater, as summarized in his expert report (**Appendix B**).[76]

Commenters also note that paragraph IV.F.3.a of the Draft Permit requires a "summary of all completed BMPs, programmatic initiatives, alternative control practices, or other actions implemented for each TMDL ***stormwater WLA***." (Emphasis added). As noted, many BMPs included in the 2020 Accounting Guidance document do nothing to reduce ***stormwater*** pollution. As such we request clarity regarding how a jurisdiction can characterize the reductions associated with these non-stormwater practices selected by a jurisdiction in lieu of stormwater BMPs. Similarly, paragraph IV.F.3.c. uses the phrase "adequate progress toward meeting the Department's approved benchmarks and final stormwater WLA implementation dates." We urge the Department to change this language to reflect that much, if not most, of the load reductions associated with a jurisdiction's ISR compliance work may not be applicable to a stormwater WLA at all.

VII. The Draft Permit Inappropriately Relies on Permittee Self-Regulation.

Several aspects of the Draft Permit amount to impermissible self-regulation. The Draft Permit allows the permittee discretion without sufficient Department oversight to ensure compliance with the CWA with respect to the benchmarks and program modification requirements of the ISR requirement. Further, the Draft Permit relies entirely on the permittee's own discretion to ensure consistency with applicable WLAs (including, as described above, stormwater WLAs

[72] *Id.*
[73] *Id.* at 8.
[74] *See Am. Farm Bureau Fed'n v. EPA*, 792 F.3d. 281 (3rd. Cir. 2015, *cert. den.* Feb. 29, 2016).
[75] Appendix D, Dr. Horner's Report, at Exhibit 1, 1-1–1-2.
[76] Appendix B, Dr. Roseen's Report, at 3, 22.

even though a permittee can choose to comply with the permit without installing any stormwater BMPs at all). The Illicit Discharge Detection and Elimination (IDDE) Program also includes language that is insufficiently precise to assure proper compliance with the CWA.

Section 402 of the CWA, its implementing regulations, and federal case law construing the CWA prohibit self-regulation by a permittee. *See* 33 USC 1342(a)(2) ("The Administrator shall prescribe conditions for such permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate."); *see also Envtl. Def. Ctr., Inc. v. U.S. E.P.A.*, 344 F.3d 832, 856 (9th Cir. 2003) ("However, stormwater management programs that are designed by regulated parties must, in every instance, be subject to meaningful review by an appropriate regulating entity to ensure that each such program reduces the discharge of pollutants to the maximum extent practicable.")

A. The benchmark framework and program modification provisions for implementing the ISR requirement fail to include sufficient Department oversight.

Because the annual benchmarks designed for a permittee to comply with the ISR requirement lack consequences of failing to meet those benchmarks, the Draft Permit does not hold the permittee accountable for actually meeting the ISR requirement. The Draft Permit states that the benchmarks are not enforceable, and the annual reporting required to ensure progress is being made toward achievement of the permit requirements only requires the permittee to demonstrate "adequate progress toward" the benchmarks, not actual achievement of the benchmarks.

If the permittee does not meet the benchmarks, the permit notes that the permittee "should take appropriate corrective action to improve progress toward meeting permit objectives."[77] Because there is no accountability or enforceability of the benchmarks or of the corrective actions to be taken if benchmarks are not met, as discussed in the prior section regarding consistency with WLAs, the Department has no ability to consider a permittee's progress and require additional corrective action measures—all the steps toward reaching the ISR requirement are left entirely to the permittee. This constitutes impermissible self-regulation, similar to the circumstances in *EDC v. EPA*, where the Ninth Circuit found the rule at issue did not require the permitting authority to review an operator's stormwater management program "to ensure that the measures that any given operator of a small MS4 has decided to undertake will *in fact* reduce discharges" to the extent required by law.[78] The Draft Permit similarly does not create sufficient accountability and agency review to ensure that what a permittee undertakes will actually comply with the law.

Additionally, the Draft Permit provides for no Department oversight for when a permittee determines a program to be ineffective, which would trigger the need for modifications. Section V.A.3 provides: "Where programs are determined by the County to be ineffective, modifications shall be made within 12 months that effectively show progress toward meeting stormwater WLAs developed under EPA approved TMDLs." As discussed in the prior section of this comment letter, this provision lacks enforcement procedures. Because the County is the entity

[77] Draft Permit, Part IV.E.4.
[78] *Envtl. Def. Ctr., Inc. v. U.S. E.P.A.*, 344 F.3d 832, 855 (9th Cir. 2003).

responsible for determining whether programs are ineffective, and the language provides no guidance, standards, or Department review of the determination, the permittee has complete discretion over when modifications are necessary. Modifications would add to a permittee's costs to comply with the MS4 permit; therefore, the permittee would not have an incentive to find its programs ineffective, and neither the Department nor the public would have authority to review or challenge the permittee's determination.

The lack of accountability of the ISR sections here distinguish the circumstances from those in *Maryland Dep't of Env't v. Anacostia Riverkeeper*, where the Court found the Department's program oversight sufficient. In its analysis, the Court considered the fact that the Department would review program implementation, annual reports, and periodic data submittal annually, and could require program modifications or additions if the report did not show progress toward meeting WLAs.[79] Without authorizing the Department to **require** program modifications, the Draft Permit does not maintain the level of oversight found acceptable in *Anacostia Riverkeeper.*

Even if a permittee did find it appropriate to make modifications, the standard for such modifications gives the permittee complete discretion. Absent definitions, guidance, and/or numeric standards for what constitutes "effectively show[ing] progress toward meeting stormwater WLAs," this standard also allows for impermissible self-regulation by the permittee.

B. Draft Permit Part IV.D.3 lacks enforcement procedures and key definitions.

The Illicit Discharge Detection and Elimination Program is intended to ensure that all discharges into, through, or from the MS4 that are not composed entirely of stormwater are either issued a permit or eliminated. When a suspected illicit discharge discovered within the permittee's jurisdiction is either originating from or discharging to an adjacent MS4, the Draft Permit requires the permittee to "coordinate with that MS4 to resolve the investigation."[80] The Draft Permit does not describe what it means to "resolve the investigation" and provides no standard or guidance for when the suspected illicit discharge has been sufficiently investigated. This leaves the permittee and adjacent MS4 to determine when the suspected illicit discharge has been resolved.

Resolving the investigation could be interpreted as identifying the source of the problem, rather than remedying it. The permittee and adjacent MS4 should be required to resolve the *violation* and eliminate the illicit discharge, if any, discovered. By law, a permittee is required to prohibit non-stormwater discharges and other illicit discharges, and merely requiring the permittee and adjacent MS4 to resolve the *investigation* is insufficient if it does not eliminate the discharge.[81]

"Significant discharges" in Part IV.D.3 must be defined to avoid each permittee establishing a different definition or none at all. The Permit should include additional detail in paragraph IV.D.3.g to define or otherwise give effect to the term "significant discharges."This section

[79] *See Maryland Dep't of Env't v. Anacostia Riverkeeper*, 134 A.3d 892, 922 (Md. 2016).
[80] Draft Permit, Part IV.D.3.g.
[81] *See* 33 U.S.C. § 1342(p)(3)(B)(ii) ("Permits for discharges from municipal storm sewers…(ii) shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers"); 40 C.F.R. 122.26(b)(2) ("Illicit discharge means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.")

requires that "[s]ignificant discharges" be reported to the Department for enforcement and/or permitting. The permit does not define significant discharges, which leaves the permittees to independently interpret what constitutes significant discharges for purposes of what to report to the Department. This would lead to inconsistent application of this requirement, with permittees reporting to the Department discharges of extremely varied severity and many discharges going unreported because permittees do not think they rise to the threshold level of significance. The Department should define "significant" in this context with a numeric or detailed narrative standard or metric. Commenters have been concerned in the past by instances of visible pollution flowing into MS4 storm drains and urge the Department to give effect to this seemingly important provision.

C. "Equivalent" county water quality analyses must not be allowed without further direction or guidance from the Department on what would constitute an "equivalent" analysis.

Part IV.F.2 requires that "[t]he TMDL implementation plan shall be based on the Department's TMDL analyses, or equivalent and comparable . . . County water quality analyses. . . " Commenters request clarification about what constitutes "County water quality analyses"? The Permit should define what constitutes this "equivalent and comparable" standard, provide guidance about how a county can develop such analyses, or reference a document on the Department website. Otherwise, the Permit is providing blanket approval for any jurisdiction to create any sort of water quality analysis in lieu of the state's analyses. This sort of self-regulation is not acceptable and the Department could be inviting a situation where unacceptably deficient analyses cannot be challenged by the Department due to a lack of a clear definition or guidance as to what sort of local analyses would be deemed "equivalent or comparable."

VIII. The Draft Permit Should Account for Growth.

We would like to acknowledge an important proposed addition to the Permit. After describing a number of existing state laws in Part IV, the Permit states that "[a]ny additional loads will be offset through Maryland's Aligning for Growth policies and procedures as articulated through Chesapeake Bay milestone achievement." As discussed below, Maryland has failed to adopt an Aligning for Growth policy or to develop WIPs consistent with EPA expectations to account for pollution growth. Unless a thoughtful accounting for growth policy is adopted, the Department cannot credibly claim in this Permit to have policies in place to deal with pollution from new or expanding sources.

When EPA devised the Chesapeake Bay TMDL it included the fundamental expectation that states account for ***future*** pollution growth as they work to reduce pollution from ***existing*** sources. Thus, growth offsets were incorporated as one of eight essential elements for states to include in their WIPs, consistent with the guidance provided in an appendix to the TMDL, as well as several guidance materials that EPA developed to help states understand what was needed to deal with growth. Included in these materials was EPA guidance urging "an explanation of how Bay jurisdictions will track and verify practices to … offset future loads," as well as a detailed numeric demonstration of "how they intend to account for any increases in loads from point and nonpoint sources of nitrogen, phosphorus, and sediment." In fact, for jurisdictions like Maryland that have fallen behind the pace of progress needed to meet the 2025 TMDL target (Maryland failed to meet the 2017 interim target), the guidance even suggested the creation of "net improvement offsets" that require "any new or increased nutrient and sediment

loads to be compensated for" by an even larger amount in a way that "quickens the pace of implementing controls" in those lagging jurisdictions.

While policies such as "net improvement offsets" represented a nuanced and forward-thinking solution to deal with growth, the basic expectation EPA laid out for states was to either (1) develop programs or policies to control new sources of pollution as they arise, or (2) carve out and set aside some of the overall pollution loads allocated to the states to be used by new or increasing sources of pollution. Initially, Maryland seemed to take seriously its responsibility to adhere to EPA's expectation as it convened an "accounting for growth" workgroup for monthly meetings to develop recommendations and, ultimately, regulations for offsetting growth in various contexts including for stormwater. Regulations were also required by law (Chapter 149 of 2012) to include offsets for residential development in certain areas. Maryland even committed to EPA to develop the regulations with a final effective date of December 31, 2014. (see the *Maryland Sector Load Growth Demonstration* to EPA). Unfortunately, since that time, Maryland has done nothing more than change the name of the workgroup; after convening the newly named "Aligning for Growth" work group several times, the Department promptly disbanded it altogether. And while the workgroup has been on hiatus, the amount of impervious surface has only continued to expand, and along with it, innumerable sums of additional pollution and stormwater. As discussed in the factual background section above, the growth in new impervious acreage in Maryland since 2009 has more than offset any programmatic reductions in stormwater pollution, and as a result total stormwater pollution loads have increased. Maryland has not been able to offset new growth, much less make net reductions. It is deeply problematic for the Department, after failing at the task for a decade, to now be appealing to an accounting for growth policy that does not exist.

EPA has repeated its stance in recent milestones assessments that it "expects Maryland to continue to work with EPA to understand where growth is occurring, and where loads need to be offset, to offset these new loads within the appropriate time frame, and to continue to track and account for new or increased loads…" especially because of "increases in nitrogen in the Urban/Suburban Stormwater sector." Given EPA expectations, the state's prior commitments, unfulfilled state statutory requirements (Ch. 149 of 2012), and data showing the dire need for offsets to allow the stormwater sector to meet WLAs, it is unacceptable for the Permits to make the claim that "additional loads will be offset through Maryland's Aligning for Growth policies" without taking immediate and concrete steps to adopt such policies. **We strongly urge the Department to comment on the development of these policies and, if a deadline for policy adoption is not sufficiently soon, we recommend the final Permit contain new growth offset provisions. We also urge the Department to fully comply with their clear mandatory duty under Chapter 149 of 2012.**

IX. The Draft MS4 Permit Fails to Appropriately Account for Climate Change.

We have a number of serious concerns about the Department's failure to account for the practical realities of climate change, as discussed in detail in the attached EIP report.[82] The MS4 permits operate on an underlying assumption that precipitation patterns over the next five years will resemble precipitation patterns of the past. Specifically, the Chesapeake Bay Program model that the Department ostensibly uses to inform the development of WIPs and the MS4 permits assumes precipitation patterns of the 1991-2000 time period. It is unreasonable to use these assumptions without at least applying a margin of safety. We know that rainfall volume and rainfall intensity are increasing, have increased since the 1990s, and will continue to increase.[83] According to the Department's own assessment in the Phase III WIP, "climate change impacts, including increased precipitation and storm events, are causing increased nutrient and sediment loads."[84] The WIP also acknowledges that climate change is likely to reduce the effectiveness of BMPs. For example, page 53 of the WIP states that "[t]he BMPs used to control water pollution will likely become less effective at controlling extreme storm events and be subject to damaging stresses of climate change." Yet the MS4 permits fail to account for the additional pollutant loads that climate change has already and will continue to cause, and do not make any adjustments to default assumptions about BMP effectiveness.

A. Increased Flooding and Extreme Weather is Increasing Stormwater Pollution and Negatively Impacting Water Quality.

Climate change and its associated increase in flooding and extreme weather events will increase stormwater pollution in the Chesapeake Bay watershed and hinder progress towards achieving water quality improvements required by the Chesapeake Bay TMDL. These effects must be considered in the Permit.

The Chesapeake Bay region is already experiencing flooding from sea level rise, and flooding will only continue to get worse as the region experiences stronger, wetter storms. The pace of sea level rise is expected to increase dramatically in Maryland. According to NOAA tide gauges, sea levels have risen about 13 inches over the last 100 years,[85] and the likely range of sea level rise in Maryland between 2000 and 2050 is 0.8 to 1.6 feet, with a one-in-twenty chance of sea level rise exceeding 2.0 feet.[86] If greenhouse gas emissions continue to grow unchecked, the likely range of sea level rise in Maryland is 2.0 to 4.2 feet over the next century, two to four times the rise experienced in the prior century.[87] In fact, the pace of inundation could actually be far worse in some areas, as other factors like land subsidence accelerate the rising water levels.[88]

---

[82] Appendix A, *Stormwater Backup in the Chesapeake Region*.
[83] *See, e.g., id.* at 9–11.
[84] Phase III WIP, at 9.
[85] Center for Operational Oceanic Services and Products, Sea Level Rise, U.S. National Oceanic and Atmospheric Administration. Available at https://tidesandcurrents.noaa.gov/sltrends/. Last accessed Jan. 12, 2021.
[86] Donald F. Boesch, et. al, University of Maryland Center for Environmental Science, *Sea-level Rise Projections for Maryland 2018*, iii (2018). https://mde.maryland.gov/programs/Air/ClimateChange/MCCC/Documents/Sea-LevelRiseProjectionsMaryland2018.pdf.
[87] *Id.*
[88] Maryland Geological Survey, Land Subsidence Monitoring Network, http://www.mgs.md.gov/groundwater/current/land_subsidence.html (last accessed Dec. 7, 2020).

As a result of sea level rise, coastal cities and towns around Maryland are regularly experiencing flooding simply from high tide. The National Oceanic and Atmospheric Administration projects that under a low sea level rise projection (0.5 meter global rise by 2100), by 2100 "high tide flooding will occur 'every other day' (182 days/year) or more often within the Northeast and Southeast Atlantic."[89] Under an intermediate sea level rise scenario (1.0 meter global rise), "high tide flooding will become 'daily' flooding (365 days/year with high tide flooding)."[90]

Climate change will also increase the frequency of extreme weather, producing stronger and wetter storms. In 2016 and 2018, two intense storms hit historic Ellicott City, Maryland, producing a one in one thousand years rainfall event.[91] That amounts to a 0.1% probability storm per year, hitting the same city twice in only two years.[92] The cost of such extreme weather events is staggering. In six of the last ten years, the damage caused by the average number of storms exceeded $1 billion per year.[93] In 2017, 16 storms individually cost over $1 billion, and the overall storm cost for the year was a record-breaking $306.2 billion.[94] The rising costs associated with storm damage necessitate factoring climate change and increased precipitation directly in the MS4 permits, especially for jurisdictions in the coastal areas most susceptible to the risks of climate change, i.e., the areas already experiencing sea level rise and flooding during heavy rainfall events.

B. Changing Precipitation is Worsening Stormwater Pollution and Water Quality.

Along with sea level rise, flooding and extreme storms, Maryland faces many negative climate change impacts that stem from changing precipitation patterns in Maryland and the Mid-Atlantic. Specifically, recent trends indicate precipitation has increased in frequency, duration, and intensity and is trending towards further increases. This translates to more rain and more stormwater generated pollution. The congressionally mandated Fourth National Climate Assessment[95] indicates clearly that precipitation intensity is trending upward in the Mid-Atlantic and Northeastern United States at a faster rate than anywhere else in the U.S.[96] This was indicated in the 2014 National Climate Assessment that stated "water quality [was] diminishing in many areas, particularly due to increasing sediment and contaminant concentrations after heavy downpours."[97] The increase in precipitation amount, intensity, and persistence has

[89] NOAA, Patterns and Projections of High Tide Flooding Along the U.S. Coastline Using a Common Impact Threshold, NOAA Technical Report NOS CO-OPS 086, ix (2018), https://tidesandcurrents.noaa.gov/publications/techrpt86_PaP_of_HTFlooding.pdf.
[90] *Id.*
[91] Phase III WIP, at 42.
[92] *Id.*
[93] *Id.* at 43–44.
[94] *Id.* at 44.
[95] USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)], U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018, https://nca2018.globalchange.gov/.
[96] *See id*., Chapter 18, Northeast, https://nca2018.globalchange.gov/chapter/18/.
[97] National Climate Assessment: Key Findings - Water Supply (2014), https://nca2014.globalchange.gov/highlights/report-findings/water-supply.

well-documented direct negative impacts on water quality and aquatic ecosystem health because more intense rain events causes increased soil erosion and runoff.[98]

The State must act with urgency to update and modernize policies to be reflective of current and future conditions. The health and quality of Maryland's waters cannot wait another five years for this permit to be renewed again without considerable update to control for climate-induced increases in stormwater runoff. We urge the Department to reissue the draft permit with climate reforms and considerations. The Phase III WIP acknowledges that "more intense storms are expected to change the effectiveness of BMPs to control pollution runoff."[99]

Considering that the MS4 permit is at its core a permit designed to control storm-generated pollution from impervious cover and diverse land uses, then the impacts that more intense storms have on urban and suburban site pollution control BMPs must be central to the design and considerations of the proposed permit. In its current form, the Permit is not adequately designed to effectively control pollution from climate change-induced increases in storm volume, intensity, and duration. The Permit will not protect water quality in Maryland and will not meet state and federal water quality standards.

C. Extreme Heat is Worsening Stormwater Pollution and Water Quality.

Studies show that Maryland's freshwater aquatic resources are directly threatened by higher water temperature.[100] Higher water temperatures are caused by the combination of climate change, deforestation, increases in rain events, and high percentages of impervious surfaces.[101] This results in higher ambient water temperatures as well as more and higher temperature stormwater runoff.[102] This combination has negative impacts on the biological health of Maryland's water resources.[103]

D. Recommended Improvements to Reflect Climate Change

Extrinsic agency records indicate that the Department has neither considered nor addressed the impacts of climate change and other meteorological changes in the development of the Permit. On July 24, 2020, Commenters submitted a Maryland Public Information Act (PIA) request to the Department for climatological and meteorological data, analysis, and other information relied

---

[98] Fourth National Climate Assessment, Chapter 18, Key Message Number 1, *Intense Precipitation.* https://nca2018.globalchange.gov/chapter/18/ (last visited Jan. 17, 2021).
[99] Phase III WIP, at 45.
[100] *See, e.g.*, N. LeRoy Poff et al., *Aquatic Ecosystems and Global Climate Change*, Pew Center on Global Climate Change (Jan. 2002), *available at* https://www.pewtrusts.org/-/media/legacy/uploadedfiles/wwwpewtrustsorg/reports/protecting_ocean_life/envclimateaquaticecosystemspdf.pdf.
[101] Russell Jones et al, *Climate change impacts on freshwater recreational fishing in the United States*, Mitig Adapt Strateg Glob Change 18, 731–758 (2013), https://doi.org/10.1007/s11027-012-9385-3.
[102] *Id*.
[103] Fourth National Climate Assessment, Chapter 18, https://nca2018.globalchange.gov/chapter/18/ (last visited Jan. 17, 2021).

upon by the Department in its implementation and development of the Permit.[104] On November 17, 2020, the Department released two (2) records in response to the PIA records request.[105] As of January 21, 2021, the Department has neither released any additional records responsive to our request nor has the Department confirmed that the transmitted records constitute the entirety of records responsive to the PIA request.

The transmitted records do not include, or even reference, relevant data or analysis of climate impacts or changed meteorological conditions, nor how such factors relate to or are addressed by the design and renewal of this Permit and earlier Phase I MS4 permits, implementation of the Phase I MS4 permits, or, even, other permits and regulations for stormwater of any kind. Included among the two responsive records is the Department's own 2020 Accounting Guidance, titled "Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated Guidance for National Pollutant Discharge Elimination System Stormwater Permits (June 3, 2020 Draft)." The 2020 Accounting Guidance explicitly relies upon the 2000 Maryland Stormwater Design Manual (revised 2009), which does not consider changed climate and meteorological conditions over the last ten-year period, at the very least, or longer. Furthermore, the 2020 Accounting Guidance is not enforceable in this Permit. The record indicates that the Department has not undertaken any analysis or technical consideration of already-changed and assuredly worsening climate and meteorological conditions that are likely to undermine the purpose and design of the Permit.

The 2020 Accounting Guidance describes how additional impervious acre credits may be available to permittees that install BMPs designed to treat more than the required one inch of rainfall, recognizing that "[...]greater storage volume may be more resilient to changing weather patterns such as increasing annual precipitation and more frequent, intense short duration storms" and "helps reduce downstream flooding and channel erosion."[106] Commenters agree that increasing the storage volume of stormwater BMPs is likely an important management strategy for permittees to adopt in order to adapt the design of BMPs to changing precipitation conditions, while producing additional co-benefits to mitigate downstream flooding. However, the additional prospective impervious acre credits offered by the Department do not alone address any change in the overall level of effort required of Phase I MS4 permittees to address increasing quantity and intensity of precipitation and flooding in Maryland, nor the watershed loads of nitrogen and phosphorus pollution attributable to climate change impacts that are not currently offset by Maryland's Phase III WIP for the Bay TMDL. The mere offer of potential credits for sizing up stormwater restoration BMPs is not alone an adequate approach to adapt the Permit to changed climate conditions.

1. The Department Must Strengthen Numeric Storm Design Standards to Account for Changed Precipitation Conditions.

---

[104] Email from David Flores, Center for Progressive Reform, to Amanda Redmiles, Maryland Department of Environment (July 23, 2020). Maryland Department of the Environment Public Information Act Request Tracking Number 2020-01665.

[105] PDF documents titled, "Fundamentals of Success slides 6-4-19.pdf" (available at https://www.mcet.org/Assets/mcet/MDE/swppp/MDE%20Stormwater%20Management%206-4-2019.pdf) and "2020 MS4 Accounting Guidance Document-EPA-June_2020.pdf." the Department Public Information Act Request Tracking Number 2020-01665.

[106] 2020 Accounting Guidance, at 27-28.

Recent studies have indicated that throughout most of the United States storm control infrastructure is under-designed for the increasing frequency and severity of extreme rainstorms.[107] This study indicates that the increase in extreme storms paired with under designed stormwater control systems will lead to the failure of many stormwater systems throughout the country.[108] The study also indicates that the eastern United States is experiencing extreme rain events 85 percent more often in 2017 than in 1950.[109] The lead author of this study stated in a press release "that infrastructure in most parts of the country is no longer performing at the level that it's supposed to, because of the big changes that we've seen in extreme rainfall."[110] Additionally, on a more regional scale the Phase III WIP indicates the same, that "increasingly frequent and severe extreme weather events will damage BMPs and necessitate more inspections, maintenance, or replacement and that more BMPs need to be installed to compensate for an anticipated loss of BMP pollution reduction efficiency."[111] **Effluent limitations, BMPs, and, by reference, storm design standards contained in the Draft Permit are likely under-designed and *must* be reviewed by the Department to determine whether these practices and standards will perform as necessary in light of more-recently historic and projected precipitation intensity, duration, and frequency data.**

The Draft Permit in its current form does not take the above facts into consideration and maintains outdated storm design standards. The Permit relies heavily on the 2020 Accounting Guidance and long outdated numeric design standards in the 2000 Maryland Stormwater Design Manual. Climate considerations, such as accounting for new data and trends showing increases in the intensity, duration, and frequency of storms are inherent to the design and implementation of practices to control stormwater pollution. However, the Permit lacks any affirmative duty or requirement for the permittee to ensure that climate change impacts and meteorological changes are adequately considered, especially through its implementation of the required Stormwater Management and Assessment of Controls provisions.

The Department must research and analyze data regarding effectiveness of current BMPs and analyze and update numeric storm design standards to be reflective of recent data and current trends. As discussed above, Commenters requested records of the Department's consideration and analysis of these climate factors in the design and drafting of this Permit and disclosed records indicated that no such analysis or even discussion of such analysis was considered or undertaken by the Department. While accounting for already changed precipitation conditions, the Department should also consider downscaled climate models that can produce reliable estimates of near-future precipitation patterns (see **Appendix D**, Dr. Horner's Report, at page 16). This is the only way that the Department will be able to plan for the future (as it should), rather than for the past. The Department should also add a re-opener to the permit to allow for

---

[107] Daniel Wright, et al. *U.S. Hydrologic Design Standards Insufficient Due to Large Increases in Frequency of Rainfall Extremes*, Geophysical Research Letters, Volume 46, Issue 14 (July 28, 2019), *available at* https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2019GL083235; Abigail Eisenstadt, *U.S. Infrastructure Unprepared for Increasing Frequency of Extreme Storms*, American Geophysical Union (Aug. 1, 2019), *available at* https://news.agu.org/press-release/us-infrastructure-unprepared-for-increasing-frequency-of-extreme-storms/.
[108] *Id*.
[109] *Id*.
[110] *Id*.
[111] *Id.* at 46.

the permits to be modified in the event that the Department completes an analysis of climate change-related impacts that have not yet been incorporated and/or state legislation or other regulatory changes require updates to storm design standards and IDF curves.

In the meantime, the Department should adjust its expectations to fit the most recent available precipitation data, and/or incorporate a margin of safety. For example, the Department could, like Virginia Beach (discussed below), adjust its precipitation estimates upward by 20 percent. At a more granular level, the Department should consider prioritizing BMPs for "hot moments in hot spots."[112] Given what we know about climate change, the Department should identify a near-future peak storm flow or a suitable proxy (which might be, for example, the highest recorded 24-hour rainfall total over the past 10 years), and identify BMPs best suited for retaining that level of precipitation, particularly in locations that are uniquely susceptible to storm flooding. Assuming that precipitation patterns over the forthcoming permit cycle will resemble the precipitation patterns of 1991-2000, while simultaneously acknowledging that the assumption is invalid, is arbitrary and capricious. The Department must make an effort to adjust to the new normal and plan for increased precipitation volume and intensity.

The Department has an opportunity to make this Permit truly protective of State waters and be a ***true*** **climate leader on this front. Commenters urge the Department to take the time necessary to fully assess the factors and issues we have discussed** above to ensure that the new Permit is responsive to these trends and that the Department does not lag behind and wait until it is too late when this permit is renewed again in five years.

Numerous entities have begun similar updates and Commenters urge the Department to review, contact, and, if necessary, coordinate with any of the below entities that have updated IDF curves and storm design standards based on current rain data and trends regarding impacts from a changing climate.

- The Chesapeake Bay Program - A recent draft memo within the Program summarized five recent studies "that downscaled precipitation projections for local stormwater management application."[113] The memo also states that these downscaled precipitation projections are 'necessary to [] inform future stormwater design."[114] The summary of these studies indicates that Rainfall Intensity Projections will increase across the watershed with increases ranging from 1% to 44%.[115] The memo also states "that the use of IDF curves based on historic precipitation analysis are likely to underestimate future precipitation.[116] Lastly, the memo notes that a study of Maryland with resulting downscaled precipitation projections is currently underway with results pending. Commenters urge the Department to track and communicate with the authors of this

[112] See H.E. Preisendanz et al., *Temporal inequality of nutrient and sediment transport: A decision-making framework for temporal targeting of load reduction goals*, Environ. Res. Lett. 16 (2021).
[113] David Wood, Chesapeake Stormwater Network, *Review of Recent Research on Climate Projections for the Chesapeake Bay Watershed*, 12 (Sept. 4, 2020), *available at* https://www.chesapeakebay.net/channel_files/40324/memo_3_summary_of_climate_projections_review_draft_9.4.20.pdf.
[114] *Id.* at 13.
[115] *Id.* at 17.
[116] *Id*. at 2.

study and thoroughly analyze how the projected IDF curves that result may be implemented immediately into this Permit, through the use of a reopener, and/or updates to the storm design standards during the permit term.

- Chesapeake Bay Program Urban Stormwater Workgroup - This workgroup is developing a project to "develop future projected IDF curves for the entire Chesapeake Bay Watershed and host them on a web-based tool" with the goal "to design and build infrastructure assets to withstand anticipated future precipitation conditions, design standards should reflect future precipitation projections and not solely be based on historical precipitation records."[117] We urge the Department to track and collaborate with this workgroup as necessary to implement the appropriate standards into the MS4 and to implement similar goals and motivations into the design and implementation of the MS4.

- Virginia Beach, Virginia - The City of Virginia Beach updated its Public Works Design Standards Manual in June 2020.[118] These updates included the requirement that developers "plan for 20 percent more rainfall than current National Oceanic and Atmospheric Administration data calls for."[119] This change was driven by studies from the City that indicated that "actual rainfall frequency depths in Virginia Beach are approximately 10% greater than those specified in NOAA" and "in order to address the need for more accurate design rainfall data and to consider projected increases in rainfall frequency depths over the next 30 years, rainfall depth-duration values were increased by 20% over NOAA Atlas 14 values."[120] We urge the Department to conduct a similar analysis of Maryland as a whole, develop updated storm design standards applicable across the state and determine if any areas of the state require further enhancement of standards based on local/regional rainfall data.

- Virginia Department of Transportation - "The Virginia Department of Transportation (VDOT) has also revised its bridge design manual to account for climate change. VDOT

---

[117] Michelle Miro et al. *Piloting the Development of Probabilistic Intensity Duration Frequency (IDF) Curves for the Chesapeake Bay Watershed*, presentation to Chesapeake Bay Program Urban Stormwater Workgroup Meeting (June 16, 2020), *available at* https://www.chesapeakebay.net/channel_files/40321/urbanstormwaterworkgroup_16june2020.pdf.

[118] Virginia Beach Department of Public Works Engineering Group, *Design Standards Manual*, City of Virginia Beach, Virginia (June 2020), *available at* https://www.vbgov.com/government/departments/public-works/standards-specs/Documents/_June%202020%20Design%20Standards%20Manual.pdf.

[119] Brett Hall, *Starting this summer, developers must plan for more flooding in order to build in Virginia Beach*, WAVY-TV, (Aug. 12, 2020, 12:43 AM) https://www.wavy.com/weather/flooding/starting-this-summer-developers-must-plan-for-more-flooding-in-order-to-build-in-virginia-beach/.

[120] Virginia Beach Department of Public Works Engineering Group, *Design Standards Manual*, at 8–9; *see also* Dmitry Smirnov, et al., *Analysis of Historical and Future Heavy Precipitation*, Dewberry, Submitted to City of Virginia Beach Department of Public Works (Mar. 26, 2018), *available at* https://www.vbgov.com/government/departments/public-works/comp-sea-level-rise/Documents/anaylsis-hist-and-future-hvy-precip-4-2-18.pdf.

has implemented a 20% increase in rainfall intensity and a 25% increase in discharge in design of bridges."[121]

- Maryland's Eastern Shore - The Eastern Shore Land Conservancy commissioned a study on extreme precipitation on Maryland's Eastern Shore. The conclusion of this study was that "extreme precipitation events are becoming more intense and bringing more rain, a trend which will continue and escalate in the coming decades.[122] One of the key recommendations from the report was to "upgrade infrastructure to reflect future precipitation estimates".[123]

- Anne Arundel County, Maryland - Updated 1-year storm designation to 2.7 inches in 2017.[124]

- New York - "The New York State Department of Transportation has revised their highway design manual to account for future projected peak flow in culvert design. The change was a 20% increase." and "as another example, New York City has not adjusted its design manual, but has issued the "Climate Resiliency Design Guidelines" (NYC Mayor's Office of Recovery and Resiliency, 2019). Among the guidelines provided is the recommendation that the current 50-year IDF curve be used as a proxy for the future 5-year storm (projected for the 2080s). The guidelines suggest that designers plan to use on-site detention/retention systems to retain the volume associated with that size storm event though it is not yet a requirement."[125]

2. The Department Should Limit Credit Eligibility for BMPs Exposed to Flooding.

In response to the overwhelming science demonstrating the effects of climate change on flooding, sea level rise, and extreme precipitation in the region, the Department should require more expansive reporting of flooding impacts on BMPs, and limit Stormwater Restoration and TMDL WLA credit eligibility for new, proposed BMPs exposed to flood risks.

Climate change poses a threat to the effectiveness of BMPs as the frequency of storms and the amount of precipitation increases. The Phase III WIP acknowledges that "more intense storms

---

[121] David Wood, *Review of Recent Research on Climate Projections for the Chesapeake Bay Watershed*, at 12, 21; *see also* Virginia Department of Transportation. *Consideration of Climate Change and Coastal Storms*, (Feb. 14, 2020), *available at* http://www.virginiadot.org/business/resources/bridge/Manuals/Part2/Chapter33.pdf.

[122] Michelle Charochak and James Bass, *Preparing for Increases in Extreme Precipitation Events in Local Planning and Policy on Maryland's Eastern Shore*, 27 (Jan. 2020), *available at* https://www.eslc.org/wp-content/uploads/2020/01/ExtremePrecipitationReport.pdf (a report prepared for the Eastern Shore Climate Adaptation Partnership by Eastern Shore Land Conservancy)

[123] *Id*. at 3.

[124] Rachel Pacella. *Tropical Storm Isaias highlights a familiar problem in Anne Arundel: Where does the rain go, and how fast?* The Baltimore Sun (Aug. 5, 2020, 9:00 AM), ttps://www.baltimoresun.com/news/environment/ac-cn-stormwater-management-0805-20200805-c4ic23hcrvesxequxaxpt6rsfm-story.html?outputType=amp.

[125] Arthur DeGaetano and Christopher Castellano. *Downscaled Projections of Extreme Rainfall in New York State*, Northeast Regional Climate Center, Cornell University Ithaca, NY, 12, *available at* http://ny-idf-projections.nrcc.cornell.edu/idf_tech_document.pdf; David Wood, *Review of Recent Research on Climate Projections for the Chesapeake Bay Watershed*, at 19.

are expected to change the effectiveness of BMPs to control pollution runoff."[126] The WIP states that:

> "[t]hese enormous costs are raising questions, nationally and in Maryland, whether building and rebuilding should continue in areas with repeat catastrophic weather events. As the State continues to invest in BMPs to restore the Bay, it must carefully consider their placement to avoid areas that are at risk from the most severe climate impacts."[127]

The writers of the WIP, including many Department staff who contributed to it, identified a number of reasons why doing nothing will force the state to incur additional costs later:

> "First, increasingly frequent, and severe extreme weather events will damage BMPs and necessitate more inspections, maintenance, or replacement. Second, more BMPs need to be installed to compensate for an anticipated loss of BMP pollution reduction efficiency. Third, additional BMPs are likely needed to address increased future pollution loads."[128]

Given the increasing likelihood of flooding within Phase I jurisdictions and impacts to public facilities and BMPs covered by the MS4 permit, the Department should revise the draft permit's reporting requirements in order to capture data for every incident of flooding that occurs at and impacts the operation of required BMPs. An all-encompassing requirement for reporting flooding incidents will be beneficial to MS4 jurisdictions and the Department in a number of ways. First, the requirement would ensure that any episode of BMP failure of any kind due to flooding is documented. Second, the documentation and reporting would also benefit the permittee and agency by providing site-specific flood data that could help with the design and implementation of future BMPs and/or flood mitigation measures. Lastly, the collection of this data would allow Maryland to begin creating a record of flooding and flood impacts on stormwater BMPs to support future permit-wide adaptation reforms.

Climate change has already increased the risk of flooding and the intensity and volume of precipitation in Maryland. Therefore, the Department should require the MS4 permittee to identify and consider present-day flood risks and precipitation conditions in the design and maintenance of stormwater control practices and in monitoring and reporting requirements. The Department should also pay particular attention to proposed BMPs in flood prone areas or areas susceptible to sea level rise. It is imperative for the protection of waters of the State that the Department establish siting standards to keep new BMPs out of areas of high risk of inundation now, or under near-future climate conditions taking into account the lifetime of designed BMPs.

At a minimum, **we strongly urge the Department to deny ISR credits for new, proposed BMPs that would be located in a FEMA flood zone (areas not determined to be an area of minimal flood hazard), in areas subject to potential inundation by storm surge from a Category 1 or 2 hurricane, and areas projected to be at risk of inundation from storm surge when sea levels increase by two feet or less.** Science shows that these areas are at the most risk from flooding in response to climate change in the present and near future, and the

[126] Phase III WIP, at 43.
[127] *Id.* at 44.
[128] *Id.* at 46.

costs associated with damage to facilities in these areas is already staggering. If permittees are insistent on building BMPs in these areas and acquiring ISR credits for these practices, then the Department should at least require the jurisdiction to undertake a thorough analysis of the flood risks and engineered solutions necessary to either assure BMP performance under flood conditions or discount ISR credits in proportion to the probability and extent of BMP failure under flood risks.

3. The Department Must Consider Climate Impacts and Changed Meteorological Conditions in Designing Provisions and Requirements for Technology-based Effluent Limitations

There is no indication that the required controls, practices, and effluent limitations in this permit are designed to adequately control or respond to the increasingly extreme precipitation, flood, and heat events occurring in Maryland. The increased threat of extreme rain, flood, and heat events in Maryland must be part of the Department's consideration and design of this draft permit. It is not sufficient to rely on outdated standards when the science is clear that Maryland and the Mid-Atlantic are experiencing extreme rain events at a greater frequency than any other part of the contiguous United States. The Stormwater Management, Erosion and Sediment Control, Illicit Discharge Detection and Elimination, Property Management and Maintenance, and Public Education provisions must be re-examined in light of current and projected precipitation, flooding, and extreme heat trends in Maryland to ensure that discharges will meet applicable water quality standards.

4. The Department should consider revisions to the Draft Permit and future modifications to the reissued permit to account for forthcoming studies and planning processes.

The Department should revise the draft permit to include a reopener clause, committing to modify the permit to address forthcoming climate change analyses, reports, and plans relevant to this permit. Critically, the Department should ensure that reasonable modifications are made to this permit no later than 2022 for the purpose of incorporating the state's commitment to address climate-attributable pollution loads to the Chesapeake Bay as part of the Bay TMDL mid-point assessment. Maryland committed to submit to EPA an addendum to its Phase III WIP that addresses previously unaccounted for loads of pollution attributable to climate change. Preliminary modeling of these loads by the Bay Program indicates that Maryland's share could amount to 2.19 million pounds of nitrogen per year by 2025 that are not currently accounted for by the state's WIP or in existing permitting programs. Maryland's climate addendum is due for submission in 2021, which is several years before this permit will expire.The climate addendum is likely to consider new and revised commitments relevant to sources of climate-attributable pollution, including, for example, potential increases in stormwater discharges attributed to increasing intensity and quantity of precipitation within the region.[129] Maryland will soon also finalize several relevant climate studies, reports, and plans including, for example, a statewide

[129] Notably, in its Phase III Watershed Implementation Plan, Maryland specifically commits to continued research on the impact of increased precipitation on stormwater BMP performance, which would support the modification of stormwater design standards and other elements of this permit to account for the impacts of climate change.

plan to address nuisance flooding, an update to Maryland's modeling and mapping of 100-year flood-zones, and a water quality and climate change resiliency portfolio set to release in 2021.

X. The Draft Permit Fails to Address Environmental Justice Concerns of the Disproportionate Impacts of Stormwater Pollution.

The central tenets of environmental justice are meaningful involvement in decision making and equal protection from environmental health hazards.[130] Like many aspects of environmental management, stormwater pollution controls have failed to adequately account for and address impacts to vulnerable and marginalized communities. While contaminated stormwater poses risks for everyone, some communities are at greater risk because of past and current discrimination that has led to residential segregation, disinvestment, and lack of political power to shape land-use and stormwater management decisions. Low-income communities and communities of color have long been excluded from decisions about land use and forgotten as the regulators allocate resources. This system of partial management leads to land use decisions that exacerbate existing issues and lay the groundwork for new ones as climate change drives increased storm events.

The environmental injustice of stormwater management is often starkest in urban areas, such as Baltimore City. For example, although residents have suffered through increasingly frequent flood events for almost 65 years, the Baltimore Office of Sustainability only provides floodplain information for coastal areas.[131] The Ednor Gardens/Lakeside community and those along the Frederick Avenue corridor in West Baltimore, which have suffered from repeated flooding events, are decidedly inland. Over the years, residents have repeatedly reached out to City officials, detailing their concerns in a litany of emails and phone calls. Much to the disappointment of the community, the City has failed to provide a meaningful response. In failing to develop a plan that addresses the clear inadequacies and inequities in the City's stormwater infrastructure, Baltimore has once again left its most vulnerable residents to their own devices.

This disparity is also clear when comparing jurisdictions. For example, the Draft Permit allows Baltimore County, which is more affluent and whose population is a greater percent White to do less to curb actual pollution flows while sending its polluted stormwater downstream to Baltimore City, whose residents on the whole are predominantly low-income and African-American.[132]

Stormwater restoration is an equity issue. Marginalized communities are often paved over and lacking in green spaces that could absorb stormwater and filter contaminated urban runoff.[133]

---

[130] People of Color Environmental Leadership Summit, *The Principles of Environmental Justice* (Oct. 1991), https://www.nrdc.org/sites/default/files/ej-principles.pdf.
[131] Baltimore Office of Sustainability, *Floodplain Management Program*, https://www.baltimoresustainability.org/floodplain-management-program/ (last visited Jan. 19, 2021).
[132] *QuickFacts Baltimore County, Maryland*, U.S. Census Bureau, https://www.census.gov/quickfacts/baltimorecountymaryland; *QuickFacts Baltimore City, Maryland (County)* U.S. Census Bureau, https://www.census.gov/quickfacts/baltimorecountymaryland.
[133] *See* Manal J. Aboelata & Elva Yañez, "Stormwater Management Is an Equity Issue," *Meeting of the Minds* (Feb. 25, 2020), https://meetingoftheminds.org/stormwater-management-is-an-equity-issue-33258.

Restoration practices like green infrastructure have the potential to alleviate the damage caused by years of lackadaisical environmental management in disenfranchised communities. Green infrastructure projects provide improved water quality and reduced urban flooding and lay the framework for larger scale benefits like cleaner air and reduced urban heat island effect.[134] Because many of these benefits are highly localized, the siting of green infrastructure and other stormwater BMPs will deepen environmental inequities if governments fail to implement restoration efforts in marginalized communities.

It is critical that the Department include provisions in this permit to eliminate the harmful impacts of polluted runoff, address infrastructure inadequacies, and equalize the distribution of environmental, public health, and economic benefits from restoration efforts. This permit must incorporate actual stormwater restoration and not hollow efforts such as street sweeping that cannot reduce stormwater flow volumes at a rate sufficient to protect residents and their homes. Moreover, the permittees must be required to include all affected communities in permit implementation through robust and inclusive public outreach efforts.

The Department recently stated that environmental justice, along with climate change, is a "paramount concern to the Maryland Department of the Environment."[135] We are concerned that this statement is not currently reflected in the actions of the Department. Commenters submitted a Public Information Act request to learn more about the level of coordination between those drafting the MS4 Permit and the Commission on Environmental Justice and Sustainable Communities ("CEJSC"), which is staffed by the Department. Similar to our findings with respect to other major permits and the Phase III WIP, there was no coordination or consultation between the Department and the CEJSC during the phase of deliberations over this permit, despite the obvious connections between the MS4 permit and environmental justice.

As recommended by the Maryland Senate President's Advisory Workgroup on Equity and Inclusion, the Department and other entities involved in environmental permitting or other decisions with environmental justice implications should be required to use accurate environmental justice-related data from government entities or other reliable sources to inform their decision making.[136] If nothing is done to prevent this backslide on the twenty percent restoration standard in the previous permit, it will surely amount to a continuation of the Department's campaign of disinvestment in Maryland's urban communities. We strongly urge the Department to reverse course on this proposed rollback and reissue Draft Permits that incorporate the recommendation of the Senate President's workgroup and any legislation to codify the recommendations.

Thank you for your consideration of our comments. We look forward to your responses and as always, welcome the opportunity to discuss further with you.

---

[134] EPA, Benefits of Green Infrastructure, https://www.epa.gov/green-infrastructure/benefits-green-infrastructure.
[135] Jay Apperson, Maryland Department of the Environment, *eMDE: An Eastern Shore Home to Environmental Justice* (Dec. 16, 2020) https://news.maryland.gov/mde/2020/12/16/3342/.
[136] Report of the Senate President's Advisory Workgroup on Equity and Inclusion, January 2021. Available at: http://www.mgaleg.maryland.gov/pubs-current/SenatePresidentAdvisoryWorkgrouponEquityandInclusion.pdf.

Sincerely,

Members of the Chesapeake Accountability Project:

David Reed, Co-Executive Director
Chesapeake Legal Alliance

Mary Greene, Deputy Director
Environmental Integrity Project

Katlyn Schmitt, Policy Analyst
Center for Progressive Reform

Josh Kurtz, Maryland Executive Director
Chesapeake Bay Foundation

Other Stakeholders

Jenn Aiosa, Executive Director
Blue Water Baltimore

Councilmember Kristerfer Burnett, District 8
Baltimore City Council

Ms. Pamela Luallen-Williams
Resident, Baltimore City

Ms. Mary Jackson
Resident, Baltimore City

Morgan A. Johnson, Staff Attorney
Waterkeepers Chesapeake