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Choose Clean Water COALITION

Re: Comments on Phase I MS4 permits

The undersigned members of the Choose Clean Water Coalition thank you for the opportunity to comment on the draft phase I MS4 permits for Anne Arundel County, Baltimore County, Baltimore City, and Montgomery County. We appreciate the opportunity to provide input before the official comment period. We also appreciate the ongoing dialogue over the last few years on polluted runoff and clean water permits with MDE.

Included in attachments with this letter are letters commenting on earlier drafts of the MS4 permits as well as the accounting guidance from this year. We also included our letters to MDE from the last few years guiding MDE on how they should make permits that effectively incorporate important elements such as green infrastructure and waste load allocations. An analysis of racial and economic inequities in stormwater burdens and environmental site design implementation in Maryland is also included as Appendix i.

While there are some components of the new permits that are laudable, such as the provisions on road salts, we have significant concerns over many of the stipulations and overall approach of these permits. Many of these concerns are ones that we raised in our September 2020 letter and other letters. MDE did incorporate some components of our comments into these draft permits and accounting guidance, such as some of our comments on forest conservation and restoration of urban tree planting credit. However, many of our concerns remain unaddressed. These remaining deficiencies indicate a worrying trend in MDE's approach to stormwater pollution. Using CAST, we see that the draft MS4 Permits will not reduce stormwater pollution to achieve Phase III WIP goals and we urge Maryland to look to Virginia for lessons on how to make aggressive, actionable goals. In this letter, we enumerate concerns and urge proposed solutions in several areas. We outline problems and propose solutions to the following elements of the permits:

I. The Draft MS4 Permits Will Not Reduce Stormwater Pollution to Achieve Phase III WIP
II. MDE Should Employ an Outcomes-based Metric Instead of ISR acreage and Equivalent Impervious Acres
III. The Permits Should Include Minimums for Green Infrastructure and Ceilings on Reliance on Any Single BMP
IV. The Accounting Guidance and Specific Best Management Practices (BMP) Present Several Serious Concerns
V. Monitoring Requirements are Insufficient
VI. Nutrient Trading Undermines the Ability of the MS4 Permits to Ensure Compliance with the TMDL
VII. The Draft MS4 Permits Should Account for Climate Change

VIII. Environmental Justice: MS4 Permits Must Eliminate Inequities in Impacts and Restoration Benefits
IX. Permit Waivers: The Permits Should Require Tracking of Stormwater Control Waivers
X. Include Watershed Assessments as in the Last Permits
XI. Deicing: A Positive Addition to the MS4 Permits

We also make county-specific recommendations for individual permits followed by comments specifically on the Accounting Guidance associated with these permits amended in June 2020.

Contents

I. Draft MS4 Permits Will Not Reduce Stormwater Pollution to Achieve Phase III WIP

The MS4 permit is supposed to assist the state in meeting its Phase III WIP, but there is no evidence to support that conclusion in the draft permit renewals. In fact, there is evidence to the contrary. As it currently stands, we do not see how these MS4 permits will be able to achieve the stormwater pollution reductions that will bring Maryland into alignment with the WIP.

The MS4 permits have an impervious area reduction target that can be met through a variety of alternatives, and according to the CAST scenarios, Maryland (through its WIP) is apparently planning for virtually no new impervious surface restoration. This strongly suggests that Maryland has assumed, in drafting the MS4 permits, that **the permittees will not reduce impervious surfaces by any meaningful amount**. This is an assumption that requires clarification. If Maryland's WIP reflects substantially weaker stormwater planning targets and expectations, it stands to reason that Maryland is expecting smaller reductions from the MS4s. This creates a strong presumption that the MS4 permits are weaker than they once were, an outcome counter to the spirit and letter of the Clean Water Act.

In addition, we know that nutrient and sediment loads are increasing due to climate change. We also know that Maryland's Phase III WIP did not account for that added load. Although the WIP claimed to surpass Maryland's nutrient planning target, and claimed that these extra pollution reductions will help meet the anticipated climate change goals, the WIP also states that extra reductions will be used as a "margin of safety" to offset strategies that "might not be fully executed by 2025."[1] The extra pollution reductions, if they occur, cannot serve both purposes. Either they are a margin of safety, or they count toward the climate change goal. To the extent that they end up being partially used as a margin of safety, they will be that much less available for the purpose of meeting the climate change goals. In any event, **even if the extra reductions occur and are counted entirely toward the climate change goal, they will not be enough to meet the goal**.

Given the WIP's failure to account for climate change, there is a strong presumption that the MS4 permits are based on an inaccurate stormwater planning target. **On this basis,** we question the language in Part IV.E. of the permits: "[t]he impervious acre restoration requirements and associated pollutant reductions described below . . . are consistent with Maryland's Phase III Watershed Implementation Plan (WIP) for the Chesapeake Bay TMDL and 2025 nutrient load targets, and for local TMDL implementation targets." This conclusion is not supported by the permits or the fact sheet. If the permit terms are deemed by MDE to be consistent with all TMDLs, the permits should explain how that determination has been made and reference the supporting documentation. We are doubtful that any such documentation can be produced, because the Bay Model shows that urban stormwater pollution is increasing, not decreasing, and thus discharges under these permits are certainly causing and/or contributing to water quality impairments.

Appendix A of the draft permits is unclear. Specifically, it is not clear how, and over what period of time, MDE calculated the "reduction" column. Does this refer to the reductions that the permit will achieve? Or does this refer to the reductions necessary to meet the goal of each TMDL? By when? With respect to what baseline?

[1] Phase III WIP, page 4.

The Phase III WIP indicates that Maryland's stormwater nitrogen and sediment loads could potentially be greater in 2025 than they were in 2009 (see Table 2 below), and phosphorus loads will decline by about 4 percent. Yet the Anne Arundel, Baltimore City, Baltimore County, and Montgomery County permits, at Appendix A to each permit, show nitrogen and phosphorus reductions of 10-50 percent. Something doesn't add up. While it is certainly possible that some counties are doing much better than their counterparts, it seems unlikely that the differences would be this stark. MDE must explain how these numbers were calculated and why they are so different from statewide stormwater load trends.

And in any case, if stormwater nitrogen and sediment loads in the state as a whole were recently measured to be increasing – a situation plainly inconsistent with the Chesapeake Bay TMDL – then it is incumbent upon MDE to explain whether and how the estimated reductions for each county will improve Maryland's TMDL compliance.

To the extent that MDE produces such an analysis, we would also appreciate a backsliding analysis as required in the NPDES Permit Writers' manual. This would demonstrate how many additional pounds of nutrient and sediment pollution could be removed if MDE retained the current 20 percent standard as well as had an additional 20 in these draft permits. In order to reconcile the MS4 permits with Maryland's Phase III WIP, local TMDLs, waste load allocations, and restoration plans, it is critically important that MDE provide its assumptions about the amount of nutrient and sediment reduction that the permits will generate, and how those reductions will be generated.

We use a comparison to Virginia to illustrate not only how Maryland has backtracked on pollution reduction promises, but to also demonstrate how our neighboring jurisdiction is using stormwater planning to drive pollution reductions.

Maryland Should Look to Virginia for Stormwater Planning Leadership

As described in more detail below, Maryland, like Pennsylvania, has fallen significantly behind on stormwater planning, and the state now expects to not reduce nitrogen or sediment pollution into the Chesapeake Bay from the urban sector (relative to a 2009 baseline). Virginia is rising to the challenge and strengthening its stormwater planning targets. Maryland must strive to be more like Virginia, or it will be unable to meet the goals of the Bay TMDL, or those of the years that follow 2025.

The following tables compare Maryland and Virginia from three vantage points. The first relates to each state's Watershed Implementation Plan, or WIP. The states' most recent WIPs – the "Phase III" WIPs – were finalized in 2019. The planning targets in the Phase III WIPs can be compared to the planning targets in the prior, Phase II WIPs, which were finalized in 2012. **Table 1** compares the Phase II and Phase III WIPs for each state using data from the Chesapeake Bay Program's Chesapeake Assessment Scenario Tool (CAST). These estimates are not the same as those found in the WIPs. It was important to use CAST rather than the estimates from the WIPs themselves because each WIP was created using a different version of the Bay Program's watershed model, so a direct comparison of the two WIPs would not be 'apples-to-apples.' In order to make a meaningful comparison, we obtained estimates of the delivered load of nitrogen, phosphorus and sediment corresponding to various scenarios, including 2009 as a baseline and the 2025 loads associated with full implementation of each WIP, all using the same version of CAST (version 2017d, the most recent public version to include a WIP II scenario).

Table 1 shows that Virginia's plans have become more ambitious – the stormwater loads that Virginia now intends to achieve by 2025 are 5 to 7 percent lower than they were under the state's 2012 WIP. By

contrast, Maryland's plan has become much less aggressive – **Maryland is now planning to allow 20 to 40 percent more stormwater pollution than it would have accepted under its 2012 plan.**

Table 1: Target stormwater pollution loads for 2025 in Phase II and Phase III WIPs (millions of EOT pounds).[2]

	Virginia			Maryland		
	Phase II WIP	Phase III WIP	change	Phase II WIP	Phase III WIP	change
Nitrogen	10.3	9.7	-5.2%	7.7	9.3	+20.3%
Phosphorus	1.26	1.19	-5.4%	0.47	0.66	+41.2%
Sediment	512	476	-7.1%	284	394	+38.6%

Another useful perspective relates to the change in stormwater pollution loads over the course of the TMDL, from the 2009 baseline to the 2025 target date for achieving the reductions necessary to restore the health of the Chesapeake Bay. See **Table 2**, below, which again uses CAST load estimates for the various scenarios. Virginia has a plan that would reduce stormwater pollutants by 4 to 12 percent. Although Virginia's plan may be modest in its ambition, it is at least consistent with the TMDL's general goal of reducing nutrient and sediment pollution. Maryland's plan, by contrast, is heading in the wrong direction. Maryland plans to finish the TMDL process with **more** nitrogen and sediment pollution than it had in 2009.[3] While its neighbors are working hard to reduce pollution in urban stormwater, Maryland's BMP implementation targets for 2025 are much less ambitious. When converted by CAST into load estimates, Maryland shows an increase in nitrogen and sediment. If these permits do not ensure significant on-the-ground reductions, Maryland will allow more polluted runoff from the urban sector.

Table 2: Changes in stormwater pollution load from 2009 to 2025 under Phase III WIPs (millions of EOT pounds).[4]

	Virginia			Maryland		
	2009	2025	change	2009	2025	change
Nitrogen	10.1	9.7	-4.0%	9.0	9.3	+2.8%
Phosphorus	1.24	1.19	-3.8%	0.69	0.66	-3.8%

[2] Data obtained from CAST, version "CAST-2017d" https://cast.chesapeakebay.net/.

[3] Maryland's Phase III WIP appears to show a reduction in nitrogen and sediment loads (see, e.g., Phase III WIP at 24-25), which may seem inconsistent with what we show in Table 2. However, the reduction in the Phase III WIP is from a 2017 baseline, while here we are discussing stormwater loads over the course of the TMDL (i.e., relative to a 2009 baseline). These estimates are not inconsistent. Stormwater loads have been increasing since 2009, so it is plausible that loads could decline slightly from 2017 to 2025, but not decline below 2009 levels.

[4] Data obtained from CAST, version "CAST-2019" https://cast.chesapeakebay.net/.

Sediment	542	476	-12.2%	388	394	+1.5%

Perhaps most directly relevant to the MS4 permits are Maryland's plans for impervious surface reduction. In its 2012 WIP, Maryland was planning to reduce over 30,000 acres of impervious surface by 2025. These plans are no longer reflected in CAST and we do not see them in the permits. Again, this stands in sharp contrast to the trajectory in Virginia, where plans for impervious surface reduction have been accelerated by nearly 50 percent. It also points to a critical tension between the MS4 permits and Maryland's WIP. The permits appear to require much more than 199 acres of impervious surface restoration. However, the permits do not actually require the restoration of any impervious surface at all; instead, they require a combination of alternatives that are designed to produce pollutant reductions equivalent to the stated impervious surface restoration requirement. As a result, while the permits may appear to require the restoration of a certain number of impervious acres, they are likely to lead to much less restoration. According to CAST, the impervious surface ultimately restored will be only on the order of 199 acres.

The draft permits only partially clarifies this issue in Appendix B. To begin with, the format of Appendix B varies from permit to permit. For Baltimore City, Appendix B shows that this jurisdiction will restore 3.4 acres of impervious surface in the first permit year. This is in line with what we describe above – very little restoration. Appendix B for the other permits relies on a long series of codes, without a clear connection to impervious acre restoration. These permits fail to provide a simple answer to the question of how many acres will be restored. None of the permits indicate how many nutrient trading credits the county intends to purchase, and none of the permits say anything about permit years two through five. In short, MDE has largely failed to explain how each permit will lead to TMDL compliance, and the extent to which the permits will lead to the actual restoration of impervious surfaces.

Maryland must follow Virginia's lead and recognize the increasing threat to TMDL progress and local communities burdened by the many harmful effects of stormwater runoff and rise to the challenge with more aggressive pollution control policies. Maryland is not on track to meet the goals of the TMDL more generally.[5] In order to meet the goals for 2025, Maryland will have to triple the annual rate of nitrogen reductions seen over the past 10 years.[6] Maryland must, like Virginia, accelerate stormwater pollution reductions, and abandon the wholesale retreat represented by the most recent Watershed Implementation Plans and MS4 permits.

Finally, we note that Maryland and Virginia differ in another significant way- Virginia's Phase III WIP accounts for the additional loads that climate change is expected to produce by 2025, and Maryland's WIP does not.[7] Although Maryland may be planning to make this accounting change in the future, it will be too late for the current round of MS4 permits.

II. MDE Should Employ an Outcomes-based Metric Instead of ISR acreage and Equivalent Impervious Acres

Since the early 2000s the paramount goal of the Maryland Phase I MS4 permits has been to prevent polluted stormwater from entering local waterways and the Chesapeake Bay. In that same time period,

[5] *See* Environmental Integrity Project, the State of Chesapeake Bay Watershed Modeling, Table 8 (Aug. 8, 2019), https://environmentalintegrity.org/reports/the-state-of-chesapeake-bay-watershed-modeling/.
[6] *Id*. at page 22 and Table 8.
[7] *See* EIP, Stormwater Backup in the Chesapeake Region at 19-25 (Aug. 17, 2020) (attached).

each five year cycle of these permits has sought to achieve this goal by requiring Impervious Surface Restoration (ISR) using distinct BMPs to improve, reduce, or eliminate stormwater discharges to impaired waterways in the 10 largest Maryland jurisdictions and by the Maryland State Highway Administration. Despite advocacy from many Choose Clean Water Coalition members and certain permittees to change the metric, the 2020 draft MS4 permits still uses the impervious surface restoration (ISR) metric instead of a metric more directly related to water quality. Our continued concerns with the use of ISR as a metric are outlined below and described in more detail in the attached 2017 letter sent to MDE.

Within the 11 Maryland Phase I permits, this goal has required two actions by the permittees: (1) to attain a minimum acreage level of restored impervious surface and (2) to meet specific stormwater TMDL/ Waste Load Allocation (WLA) pollution reduction goals set for each such TMDL whether they are Chesapeake Bay or local. The underlying premise has long been that by reaching the impervious surface restoration (ISR) acreage goals, pollution reduction goals would be met.

As to the second goal, TMDL pollution reduction, the MS4 permits state plainly that the permittees are "to make progress" toward achieving specific, EPA approved TMDL pollution reduction goals whether for Chesapeake Bay TMDL or local TMDL. And so, while there have been specific ISR acreage goals to be reached in each five-year permit term, the MS4 permits themselves have not had specific, numeric TMDL related pollution reduction levels. These permits left permittees, MDE, and the public with the amorphic "make progress" standard.

The Phase I permittees in their annual reports were to make clear how they met the ISR acreage requirements and if they made progress in attaining the pollutant reductions to meet the WLA. The annual reports would make clear through data presentation in charts and tables and through the narrative how these requirements were achieved.

The reports show, in table form, the *WLAsw Percent Reduction* and the *Percent Reduction Since Baseline Date*. *WLAsw Percent Reduction* indicates the target percent reduction planned for this pollutant from a stormwater source load, with no end target date. The difference between the two is the remaining load to be addressed. In Audubon Naturalist Society's 2019 assessment, few, if any, of the jurisdictions had comparable progress towards the WLAsw Percent Reduction goals in proportion to the acres treated ISR by each permittee.

An analysis of the FY 2018 and 2019 annual reports conducted by Audubon Naturalist Society for four of the large MS4 jurisdictions in Maryland, Montgomery, Anne Arundel, Baltimore City and Baltimore County, reveal the success, or lack thereof for this two-step required action. An examination of the pollution reduction data in their annual reports shows what results are being reached over the annual and five-year permit terms for the TMDL required pollution reductions from baseline. ISR credits are not matching with actual, measured pollution improvements.

In Anne Arundel County, the county identified 30,950 MS4 impervious acres, of which 1,639 had been managed to the MEP prior to the issuance of the 2014 permit.[8] The remaining 20% to be managed during the recently ended permit term was 5,862 acres. Therefore, upon completion of this permit term, the total acreage managed to the MEP (which for Anne Arundel County includes a substantial tranche of credits traded with its wastewater treatment plant) is 24.2%. While the % TMDL reductions for TP and

[8] Anne Arundel County FY 2015 Annual Report, p IV-64.

TSS are comparable to or greater than 24%, TN lags far behind at only 13.7% reduction.[9] Regardless, all pollutants are far behind what will be needed to achieve the 100% reduction goals by 2025.

In like result, Baltimore County, as presented in its FY 2019 Annual Report, experienced smaller pollutant reductions than would be necessary to achieve real "progress toward" meeting TMDL goals.[10] To date, it has achieved 41.6% of its 2025 TP TMDL reduction goal[11] and 45.4% of its TN TMDL reduction goal.[12] In about four years, the County will have to reach the much larger remainder of these goals in about half the time (2012-2019) it took to reach the 41-45% level of nitrogen reduction. The last permit required twice the ISR level that this draft permit does. It Is unrealistic to imagine that this permit will reach the 2025 TMDL goals for the county with the low level of ISR required.

The latest Baltimore City MS4 annual report, FY 2019, contains statements that the sediment TMDL load was met but that both the nitrogen and phosphorus loads have not been met.

In the case of Montgomery County, the FY 2019 annual report shows that 39.8% of impervious acres in the MS4 have received stormwater restoration since 2005[13] but this was not reflected in TMDL reductions overall for the county, aside from phosphorus in the Anacostia. Some pollutants are at only 1% reduction despite the extensive ISR effort.[14]

These results must be changed; and they can be. On August 25, 2017 , participating members of CCWC submitted a memorandum to MDE which called for the establishment of a specific pollutant reduction methodology to focus not on ISR acreage equivalents but rather on real WLA reduction requirements and requiring a proportion of environmental site design (ESD) or "green infrastructure." We have attached this document along with this letter. We recommended basing these metrics on the permit- and watershed-specific numeric pollutant load reduction goals to be met in the course of the permit term which would result in reaching WLA for each TMDL.

We still strongly recommend switching to this outcomes-based metric and away from the indirect/model-based metric of ISR acreage and Equivalent Impervious Acres. A WLA/pollutant reduction metric, as described in greater detail in our August 25, 2017 memorandum, could effectuate a "catch up" or "gap closure" result wherein the gap between the annual report Percent Reduction goal and the Percent Reduction Since Baseline Date can be closed within a defined time period, thus ensuring the ecosystem and human health benefits that are the ultimate goal of the Clean Water Act. Please use Waste Load Allocations instead of ISR.

III. The Permit Should Include Minimums for Green Infrastructure and Ceilings on Reliance on Any Single BMP

We appreciate that MDE accepted some of the comments concerning restoration made by the Choose Clean Water Coalition members on the December Draft Guidance document provided in our letter dated February 7, 2020 as well as in our letter dated September 9th, 2020. However, there are still unresolved

[9] Anne Arundel County FY 2019 Annual Report, p 88.
[10] Baltimore County FY 2019 Annual Report, p 84
[11] Baltimore County FY 2019 Annual Report, p 10-30.
[12] Baltimore County FY 2019 Annual Report, p 10-29.
[13] Montgomery County FY 2019 Annual Report, p ES-11.
[14] Montgomery County FY 2019 Annual Report, p 164-165.

issues that MDE must address. We are disappointed that MDE dismissed additional substantive concerns from our coalition that would have resulted in stronger draft MS4 permits. The "restoration" requirements within the current draft permits are inadequate; instead of requiring stepped-up implementation of green infrastructure with numerous co-benefits, or requiring more physical stormwater BMPs that control volume while treating flows, or even limiting the amount of total ISR credit from a single practice, MDE appears to have developed permits that differ little from the last round, other than to require much less than the previous 20 percent restoration standard.

It is worth noting that most permitted jurisdictions failed to meet expected pollutant load reductions under the previous permit, even while some met the "equivalent impervious acres restored" standard. As climate change-induced weather patterns continue to shift, many of our jurisdictions are expecting heavier rains, flashier storms, and greater flooding. Many of the alternative BMPs approved for these permits, such as street sweeping or septic system treatments, do nothing to address this critical stormwater challenge.

We remain concerned about the doubled Equivalent Impervious Acre planning credit afforded stream restoration, despite the inconsistent results associated with this practice, and continue to urge that MDE cap the amount of credits a single jurisdiction can generate toward compliance with their restoration requirement from this, or other single practices such as street sweeping that do not limit volume or provide the co-benefits provided by green infrastructure practices. Given the lack of monitoring and verifiable performance monitoring as discussed in this letter, it is inappropriate to give a higher rate of credit to permittees even if it is intended to be a 'planning target' as stated by MDE. As stated in our previous letter, the Bay Program Expert Panel does not support the increase of stream restoration wholesale, and only projects verified to reduce pollution such as with onsite upstream and downstream monitoring should be afforded extra credit as well as demonstrate biological uplift as proposed by the Expert Panel Report

We also continue to oppose the inclusion of dry wells under MDE's list of approved Green Infrastructure Practices eligible for bonus credits. As stated in our coalition letter from February 2020, we firmly believe that only practices that truly mimic natural processes to both reduce pollutant loads and reduce runoff volumes should be eligible for the bonus credit, which we support. If the EPA does not recognize dry wells as green infrastructure, why would MDE?

And finally, we are truly discouraged that MDE is not requiring some minimum amount of green infrastructure to be undertaken by jurisdictions to comply with these newest permits. As mentioned elsewhere, climate change is perhaps the most critical issue facing our waterways and residents. Failure to require some percentage of practices in a jurisdiction-wide permit to be met by implementation of practices that may actually address stormwater volumes is inappropriate. By this omission, MDE is creating a confusing and disingenuous permitting scheme that is not appreciably improving water quality nor addressing increasing stormwater flows, flooding, nor stream damage which can undermine infrastructure like sanitary sewers and roadways. More detailed comments on the accounting guidance and specific Best Management Practices are below in Section IV.

Carve outs and ceilings needed:

In our earlier letters to MDE[15] [16] and several meetings with MDE and stakeholders we advocated for carve outs of minimum amounts of practices coming from green infrastructure, meaning some percentage of the overall permit requirement needing to be green infrastructure (we advocated for a minimum of 40%). We also urged MDE to have a maximum ceiling on the amount of a permit's reduction that can come from a single BMP such as street sweeping or stream restoration, particularly given the improper doubling of the per-linear-foot credit given to stream restoration that is not supported by science or the Bay Program Expert panel.[17] We urge MDE to utilize this approach to ensure that counties undertake projects that create co-benefits and create a more resilient future.

While we applaud efforts to incentivize local investment in the projects and practices that produce greater co-benefits,[18] we are concerned that the overall structure of this document does not contain minimums or maximums for certain projects, practices, activities, or categories thereof. We strongly urge MDE to insert a minimum amount of work that a permittee must satisfy for the projects that MDE recognizes as producing co-benefits (i.e. GI projects).

With the increase of planning credit for stream restoration and the mileage street sweeping calculation, it is very possible that the increased green infrastructure incentive will be dwarfed by these other BMPs entirely. A worst-case scenario might be the urban area that chooses to meet the entirety of its MS4 permit via street sweeping and/or stream restoration. Without stormwater volume reductions, how can we reasonably believe the restoration project will succeed long-term when the conditions which created the stream erosion and disconnection from its floodplain persist? We urge MDE to limit the amount of any practice, such as street sweeping and/or stream restoration, which does not reduce stormwater volume that can be utilized to fulfill the restoration requirements on an MS4 jurisdiction, in order to foster activities that truly reduce stormwater volumes and improve local environmental conditions. We have seen the overreliance of a single BMP in some jurisdictions, and according to the Watershed Protection and Restoration Program Financial Assurance Plans released so far by phase I MS4 counties, no MS4 is looking to drastically change the mix of BMP types that they will employ in the next 2 or 5 years. The Guidance and/or the next MS4 permit should set a minimum percentage requirement for GI practices (40%) and a maximum percentage allowable requirement for street sweeping and stream restoration.

IV. The Accounting Guidance and Specific Best Management Practices (BMP) Present Several Serious Concerns

On February 7th, 2020 several organizations submitted a letter providing comments on the December 2019 draft document *"Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated Guidance for National Pollutant Discharge Elimination System Stormwater Permits December 2019"* Thank you for not only the opportunity to make comments, but for also taking the time to make detailed analysis and responses to many of our substantive comments. Thank you for providing detailed feedback in a letter to Benjamin Alexandro on March 20th, 2020. We greatly appreciate the thoughtful

[15] Maryland Choose Clean Water Coalition letter to Lynn Buhl, Assistant Secretary, Maryland Department of the Environment, August 25, 2017, p. 5

[16] "Re: Comments on MS4 Accounting Guidance Document" letter to Raymond Bahr, Maryland Department of the Environment, February 7th, 2020, p. 2-3

[17] Tom Schueler et. al. "Recommendations of the Expert Panel to Define Removal Rates for Individual Stream Restoration Projects" P.14 http://chesapeakestormwater.net/wp-content/uploads/dlm_uploads/2013/10/stream-restoration-short-version.pdf

[18] Guidance, p. 24

responses and the substantive changes to the Accounting Document as seen in the June 2020 draft. Below are our comments and responses to the *"Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated Guidance for National Pollutant Discharge Elimination System Stormwater Permits June 3, 2020 Draft".* While we thank MDE for addressing some issues, considerable deficiencies still exist.

Accounting Guidance document and Green infrastructure:

We appreciate that the guidance incorporates new and expanded green infrastructure (GI) credit options, including a mechanism to incentivize their use at an additional 35% credit. We applaud this incentivizing of green infrastructure. However, with the higher levels of credit and new ways for accounting other practices such as street sweeping and stream restoration, we worry that green infrastructure crediting will be overshadowed by gray infrastructure practices. In reviewing the new 2020 Financial Assurance Plans currently under review of counties, we see continued reliance on gray infrastructure, stream restoration, inlet cleaning and street sweeping. We see little indication of a renewed focus of green infrastructure in many counties. This trend is concerning and one that we predicted in 2017 to MDE, when we first asked for a minimum carve-out for green infrastructure (40%) and ceilings/caps on specific, frequently overutilized practices such as street sweeping. MDE has the authority and obligation to guide the types and amounts of practices that permittees use to meet their permit obligations, and should help permittees balance duties to Chesapeake Bay restoration (i.e. TN/TP/TSS and IA equivalencies) with the need to protect and enhance local watersheds (i.e. the many co-benefits that green infrastructure provide).

Accounting guidance readability suggestions:

In general, new Accounting Guidance documents should highlight what has changed from the previous release. This can be done, for example by providing two versions of the new document. One version would be the "clean" final document. The other version would highlight changes from the previous release using, for example, side bars, side comments, underlining new verbiage, showing deleted verbiage as crossed out, etc. In addition, a section by section listing of what changes have been made from the previous release should be provided. This would prevent the public from having to do a manual side-by-side comparison of document releases to search for changes. Furthermore, in "Section X. References," about 70% of the documents and memos do not have hot links. Given the limited public comment period, this makes it difficult for the general public to easily locate referenced documents for use in commenting on various sections of the Accounting Guidance document.

Specific Best Management Practice (BMP) Comments:

Street Trees

We are grateful that MDE has reversed the impervious restoration credit afforded street trees and urban canopy from the Accounting Guidance December 2019 Draft, reinstating the equivalence of 100 trees to 1 restored acre. Street trees provide myriad benefits within our urban areas, and unlike many of the alternative practices afforded "credit" within the Guidance, trees can reduce stormwater volumes while also reducing nutrient and sediment pollution. We also appreciate removal of the subscript under the table of Non-Riparian Land-Cover Conversion BMPs about street trees having no load reduction value.

We are pleased that MDE reevaluated the benefit of trees within the urban environment and removed the footnote on page 15 that stated street trees have no TMDL nutrient reduction value. **We seek clarification that removal of this footnote in the June document means urban trees will be credited for pollution reductions in the TMDL.**

Street Sweeping

We remain concerned that street sweeping continues to receive out-sized credit for pollution reductions under this Accounting Guidance. Street sweeping is certainly an attractive practice for cash-strapped jurisdictions that also have trash-reduction goals to address. But allowing these jurisdictions to substitute trash-reducing practices for BMPs that actually reduce stormwater is paradoxical. Will residents notice fewer plastic containers while bailing out their cars and homes after yet-another flood event damages their property or swamps their basement with raw sewage? In an effort to minimize short-term costs to local governments, and their taxpayers, we are only serving to significantly increase the costs associated with insurance claims, infrastructure repairs, property and natural resource losses, and clean up. And our waterways will continue to be polluted.

In Baltimore, where street sweeping is, once again, slated to make up the majority of impervious surface "restoration," Blue Water Baltimore has been collecting rigorous water quality data in tributaries to the Patapsco River. In April 2020, Blue Water Baltimore conducted a statistical analysis on their data to determine whether water quality is getting better or worse in our region over time. Their data is showing us that bacteria levels are largely improving at many of our stream stations within Baltimore City and County, suggesting real progress in sewage infrastructure improvements. But we are not seeing improvements in parameters like Nitrogen, Phosphorus, water clarity, or conductivity; in many cases, we found statistically significant worsening trends for those key metrics.

Interestingly, our 7-year dataset covers the previous MS4 permit term. If street sweeping, which made up most of Baltimore City's previous MS4, works so well for reducing nitrogen, phosphorus and sediment, why aren't we seeing in-stream improvements in these water quality parameters?

Stream Restoration

As stated in the February 2020 letter, we were and remain dismayed that the planning credit for stream restorations has doubled from 0.01 EIAf/linear foot to 0.02. While we recognize that this represents a planning rate recommended by the CBP Expert Panel[19] and that permittees will be required to verify post-construction adherence to stream restoration protocols, we are nonetheless highly concerned that increasing the planning rate will increase the incentive to use stream restorations as a primary tool to achieve MS4 compliance. We see a significant reliance of stream restoration projects outlined in several of the counties' most recent Watershed Protection and Restoration Program Financial Assurance Plans.

While stream restorations may well reduce a major source of sediment and bonded nutrients due to bank erosion, they can be hugely disruptive to the ecology of a stream valley and also divert resources from upland retrofits and impervious surface removal, both of which address

[19] Final_CBP_Approved_Stream_Restoration_Panel_report_LONG_with_appendices_A-G_02062014.pdf (chesapeakebay.net)

the root cause of stream bank erosion and could eliminate the need for many stream restoration projects. However, some organizations believe that stream restorations should not be done because they believe they do not address the root cause of stream bank erosion, and that upland control of stormwater should be required prior to installing a stream restoration to help ensure that ever-increasing storm flows will not just blow out the new channel. If stream restorations are continued to be allowed, MDE's guidance must create an incentive structure where stream restorations are used carefully and judiciously, as part of a whole-watershed strategy and in consultation with biologists and ecologists, such that stream restorations are not used as a preferred engineering option to achieve compliance. There are certain cases where we do not believe stream restoration should be allowed, such as in already high functioning forested streams.

Therefore, we urge that the 0.02 EIAf/linear foot planning credit for stream restorations be reduced. The following notes lay out our concerns in more detail:

1) The scientific basis for the claimed ecological benefits of stream restoration projects in our region is disputed in the scientific literature. For example, Hilderbrand et. al. (2020)[20] says: "We sampled 40 urban stream restorations across the Piedmont and Coastal Plain physiographic regions in the greater Baltimore/Washington DC Metropolitan area of Maryland." "Despite the promise and allure of repairing damaged streams, there is little evidence for ecological uplift after a stream's geomorphic attributes have been repaired." "Unfortunately, the ecological aspects rarely improved despite the improved physical measures."

Stream restorations are often "sold" to communities with promises of ecological uplift; indeed, in the past, the Army Corps of Engineers required the goal of ecological uplift as a condition of receiving a 404 permit. In reality, Hilderbrand finds that especially in highly damaged, already urbanized streams restored with Natural Channel Design approaches, ecological uplift is rarely achieved. The growing trend in stream restorations is resulting in a growing backlash from communities upset at mature tree loss, invasive plant species, and poor long-term outcomes on bank stability in some cases. In 2020, MDE has the advantage of six years of observation on how other Bay jurisdictions have implemented the 2014 Expert Panel guidance. MDE should consider those other jurisdictions' experiences and the testimony of Bill Stack, PE himself, one of the co-authors of the Expert Panel report who now believes it has often been mis-implemented.[21] , Stack states that, "…municipalities are spending enormous amounts of money on [stream restoration] projects that generate the necessary water quality credit but have no real impact on stream function."

2) There are alternative, upland (out of stream valley) stormwater retrofit (or control) projects that could be done in previously disturbed areas to meet the MS4 permit. These projects primarily consist of the green infrastructure projects that we have worked with

[20] Hilderbrand, R., and Acord, J., (2020), "Quantifying the ecological uplift and effectiveness of differing stream restoration approaches in Maryland," Final Report Submitted to the Chesapeake Bay Trust for Grant #13141 https://drive.google.com/file/d/1ajZqeDvTNM0BtufkO58IHZQGusp2UKAZ/view?usp=sharing.

[21] Chesapeake Bay Program Stream Restoration Credits: Moving Toward Functional Lift? - Center for Watershed Protection (cwp.org)

MDE to incentivize with a 35% credit bonus. Such projects would address the root cause of the problem – keeping stormwater from impervious surfaces out of streams. While we applaud the 35% bonus for upland, green infrastructure projects, we remain concerned that the perceived 100% bonus for the new planning rate for stream restorations will still lead to them taking precedence over these critical upland solutions which could eliminate the need for stream restorations.

3) There are other riparian (along stream) alternatives to "stream restorations" allowed by the Accounting Guidance. Less invasive practices of Riparian Forest Planting and Riparian Conservation Landscaping, alongside less heavily-engineered bank stabilization practices, could go a long way towards reducing bank erosion from a degraded stream channel without the heavy footprint of a full Natural Channel Design or Legacy Sediment Removal restoration approach. By controlling stormwater upland, stream bank erosion might decrease enough to possibly eliminate the need for stream bank stabilization entirely within the context of stream restorations, particularly in less urbanized watersheds.

The complex web of interactions between fauna, flora, geology, and hydrology that interact in natural areas is irreplaceable and cannot be recreated on even a decadal time scale by engineering projects using bulldozers, backhoes, and trucked-in material to create artificial structures. We should be guided by the principal of "Do No Harm" in our stream valleys.

Just as the Chesapeake Bay has environmental value, so do the rich fauna and flora of our stream valleys. There are often better ways to protect the Bay than by using stream restorations that damage existing streams and streamside forests and wetlands and instead replace them with engineered stormwater conveyances.

Some organizations suggest that stream restorations should be removed completely from the Accounting Guidance given the concerns stated above. Others do not go so far and many organizations support stream restorations done well in the proper locations. We the undersigned strongly recommend that MDE revise the credits and guidance available for stream restorations as follows:

1) Less planning credit per linear foot should be given. Revert back to 0.01 EIAf per linear foot.
2) All stream restoration projects should require that biological uplift be demonstrated in order to receive credit. These figures would be relative to pre-construction measurements. If such increases are not demonstrated, then no credit will be awarded to the project. This would include the retroactive "claw-back" of any partial credit awarded at any intermediate milestones.

In addition, some organizations suggest that stream restoration projects used for MS4 Permit credit should not be exempted from any state or local forest conservation or forest protection laws.

Forest Conservation:

Given the discussions in the stakeholder working group in 2018-2019, we were not surprised to see the inclusion of forest conservation as a practice eligible for credit, and we appreciate the improvements from the 2019 draft guidance document. Overall, we support as much forest conservation as possible, so long as each incentive program is additional to all others, and managers cannot double-count credits. We also support the concept of prioritizing conservation above the baseline and going beyond simply focusing on restoration after forests are lost. Existing forests provide far more water quality and benefits than freshly planted saplings. Thank you for taking many of our comments in our February 2020 comment letter into account and making significant needed changes to the forest conservation section. It is very important to ensure there is no double counting. It is essential to only credit conservation that would not have happened otherwise to forests under threat.

However, MDE needs to provide further clarification to the provisions of this section. This section claims that "Credit is available to MS4 jurisdictions that have implemented forest easements that limit development and go above and beyond the conservation programs incorporated into the Phase III WIP 2025 base land-use condition." How will the Phase III WIP 2025 base land-use condition be used to set up the baseline? It also claims that "The assumptions included in the Land Policy BMP scenario for Maryland are intended to reflect Maryland's continued implementation of the Forest Conservation Act, Critical Area Law, and other preservation programs." However, it does not say whether or not changes to policies on the state or local level would be incorporated into the calculation.

If the statewide forest conservation act or other policies were to change on the local or state level, how would this affect the availability of credits? If, hypothetically, the state legislature passes a no net loss 1:1 forest replanting ratio, would that increase of conservation be part of the baseline or be creditable by the MS4 permittee? Several counties have local forest ordinances. Would they get credit from the difference between the state level FCA and the local ordinance or simply above whatever the Phase III WIP 2025 base land-use condition is? According to our conversations with county agency staff, several practitioners share our confusion and seem unsure how this new forest conservation provision will function in practice. **Please add more explanation to identify exactly what can and cannot be counted for MS4 credit.**

We are also happy to see more specific documentation requirements for receiving credit for forest conservation, to demonstrate both that forest loss is less than projected in the WIP III base land use condition, and would not have otherwise been conserved under the FCA, or other development required practices. However, table 12 in the June 2020 document removes several easement criteria that would have had to be exceeded to qualify for Forest Conservation credit:

- Easement cannot be within areas subject to 2100 1-meter sea level rise.
- Easement cannot be within a 100-year floodplain area.
- Easement cannot be within a Tier 2 watershed *unless* it is also within a Priority funding Area.
- Easement cannot be within a Priority Preservation Area.

Instead, it adds the criteria:

- Easement cannot be on a Land Use Conservation BMP.

It would be helpful for the Guidance to clarify what practices are included in the category "Land Use Conservation BMP" or provide a citation to a full listing of these. If the criteria that were removed are not included in this category, we also recommend that they be included.

V. Monitoring Requirements are Insufficient

MDE should require each MS4 to perform its own tributary monitoring and to participate in pooled monitoring to adequately and consistently measure the effectiveness of best management practices.

The updated MS4 Permits reviewed include an option for jurisdictions to either participate in a Pooled Monitoring Advisory Committee administered by the Chesapeake Bay Trust or monitor one of its tributaries. The requirement for best management practice efficiency monitoring is a positive development in this round of permits, however, both independent monitoring and pooled monitoring should be mandatory. The optional approach both thwarts the ability to determine the adequacy of stormwater management particular to the specific MS4 jurisdiction and undermines the potential for pooled monitoring to assess the effects of best management practices on water quality across jurisdictions.

Data collected from one location does not adequately measure the effect of best management practices in various settings. MS4s typically contain multiple areas of residential and commercial development sending runoff into various Chesapeake Bay tributaries. Each of these tributaries have their own hydrogeologic character and are drainages from specific land uses. It is possible that monitoring just one small sub-watershed under-or over-represents the effectiveness of stormwater best management practices undertaken within the past year. Pooled monitoring in addition to monitoring one tributary over time can yield lessons learned applicable to different settings within MS4s across the State. Pooled monitoring data collected from several local waterways receiving stormwater runoff, which are characterized by different land uses and hydrogeologic profiles, would provide a more complete set of data.

Monitoring data should be synthesized and incorporated into MDE's adaptive management.

While the Chesapeake Bay Trust provides results of pooled monitoring, there is no publicly available synthesis or compilation of monitoring data from MS4s. The utility of monitoring data is predicated on its use. MDE's adaptive management of stormwater runoff should include applying information learned from monitoring data gathered across MS4 jurisdictions to inform their selection of best management practices, and to update the next round of permits. If this adaptive management is occurring, it is not referenced in these draft MS4 permits.

Annual reports including monitoring data should be publicly available on MDE's website.

Annual reports detailing the activities demonstrating compliance with the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit terms provided by 40 CFR 122.42(c) should be publicly available. The reports describe the components of the program for each jurisdiction and the associated implementation status, allowing review of progress. The reports also summarize monitoring programs implemented, including data collection and analysis. This detail should be readily accessible to the public to improve accountability and understanding of monitoring results.

VI. Nutrient Trading Undermines the Ability of the MS4 Permits to Ensure Compliance with the Chesapeake Bay TMDL

Thank you for attempting to make improvements to this draft of the MS4 permits in response to our September comments, and we appreciate MDE limiting the use of nutrient trading with wastewater treatment plants in these permits. **However, these changes in nutrient trading do not go nearly far enough.** Under the current permits, half of the permit can still be fulfilled through trades with the wastewater treatment plants. While we are not opposed to the concept of trading in theory, Nutrient trading 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 environmental justice communities. As described below, there are at least six major problems with the nutrient trading provisions of the MS4 permits.

1. First, the lack of additionality in the allowed trades, particularly with regards to wastewater treatment plants.
2. Second, allowing the purchase of credits from wastewater treatment plants whose reductions are already incorporated into the Phase 6 Model and WIP results in double-counting, and violates the legal requirements for additionality.
3. Third, allowing annual credits in lieu of permanent practices (i.e., impervious surface restoration) increases uncertainty and creates an indefinite administrative burden.
4. Fourth, allowing the purchase of agricultural credits without a margin of safety (i.e., an "uncertainty ratio") will result in net pollution reductions that are much less than each MS4 would achieve in the absence of trading.
5. Fifth, trading enables and incentivizes disinvestment in urban communities, due to cost of on-site BMPs in urban settings.
6. Sixth, nutrient and sediment credits for Bay TMDL pollutants do not offset each permittee's failure to reduce the discharge of other pollutants, like metals or organic pollutants also contained within the runoff of impervious surfaces.

First and foremost is the lack of additionality, particularly in trades with wastewater treatment plants. According to our analysis over the summer of 2020 on all trades with publicly available data by that time there were no instances of trades with wastewater treatment plants that have any proven additionality at all. According to our analysis of the credits that have been traded so far, none appear to meet the legal requirements for additionality – meaning that the credit generator/seller is not making any pollution reductions that wouldn't have happened anyway (in the absence of trading). This also means any amount of trading with wastewater treatment plants is no more than an avoidance of pollution reduction in the permit. Allowing 50% of a permit to be used for wastewater trading in this way is tantamount to having a permit with a 5% requirement rather than a 10% restoration requirement.

There are enough wastewater treatment plants operating below the 3.0 mg/L nitrogen baseline solely because of Bay Restoration Fund upgrades already accounted for in the WIP and CAST model that hundreds of thousands of pounds worth of credit can be generated without any additional pollution reduction or change in practices at all. This also undercuts the credit trading market and lowers the demand of tradable credits to a price so low; farmers and other practitioners are not incentivized to make any pollution reduction projects.

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

Second, MDE 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 an MS4 to purchase credits from that plant, in lieu of impervious surface restoration 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 a 2019 Environmental Integrity Project report provided along with this letter.[22] This is a major mathematical error in MDE'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.

Third, the trading scheme would increase uncertainty and reduce transparency. The forthcoming round of permits would require each MS4 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 every year and requires the independent verification of these credits every year, until the county ultimately restores the required impervious surface (or implements some other alternative). MDE has not indicated an end to this cycle – the current permit drafts say "expiration date TBD," and the cycle has already been carried over from one permit term to another. This arrangement therefore creates an ongoing, annual administrative burden for the counties and for MDE with no corresponding on the ground benefit.

There is not enough information easily available or accessible to the public regarding how many and what type of credits available on the trading register have been applied to MS4 permits. This coupled with the fact that the units are then converted between nutrient credits and impervious acre equivalents adds additional uncertainty inherent in nutrient trading. Instead of tangible pollution control practices, the counties 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 permits fail to account for uncertainty in the generation of nonpoint credits. As explained in much greater detail in the EIP report[23], 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

[22] *See* Environmental Integrity project, Pollution Trading in the Chesapeake Bay at 14 to 18 (Aug. 19, 2019) (attached hereto). *See also id*. at Attachment B pages 23 to 25.
[23] *See id*. at 18; *id*. at Attachment B pages 15 to 22

events that can overwhelm a BMP or otherwise reduce the ability of a BMP to mitigate pollution – a problem that MDE itself has recognized.[24]

Since the MS4 "trading" provisions will therefore 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 – the provisions represent impermissible backsliding from the prior water quality-based restoration requirements.[25]

Fifth, the trading provisions ignore the substantial benefits to local communities that accompany real, on-the-ground pollution reduction practices. When jurisdictions are encouraged to outsource their pollution reduction activities rather than invest locally in green infrastructure projects that allow stormwater to infiltrate, the local communities lose out on the numerous co-benefits that MDE has written extensively about. Nutrient and sediment credits cannot replace these benefits. We have repeatedly asked MDE 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. We are pleased to see that MDE has set a cap on the amount of credits that MS4s can purchase from wastewater treatment plants, but the permits do not put a cap on trading more generally.

Finally, nutrient and sediment credits cannot replace reductions in other pollutants, such as toxic metals, that come with on-the-ground pollution reduction practices. This overlaps with MDE's obligation to ensure that permittees meet the technology-based MEP standard. MEP is designed to minimize all stormwater pollutants, not just nutrients and sediments. In the absence of trading, each permittee must minimize the discharge of all stormwater pollutants, including for example 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. Allowing nutrient and sediment credits in lieu of real BMP implementation means that permittees will be implementing fewer BMPs. In other words, they will make less of an effort at reducing stormwater, and plainly will not be reducing other pollutants to the Maximum Extent Practicable. This violates the purpose of the Clean Water Act, it violates the technology-forcing mandate of the Act, and it violates the Act's specific requirements.

For all these reasons, MDE should significantly restrict trading options within the Permit and direct MS4 jurisdictions to plan to fulfill their permit obligations without trading.

VII. Draft MS4 Permits Should Account for Climate Change

The Fourth National Climate Assessment predicts precipitation duration and intensity will increase with climate change in the northeastern United States[26] in addition to expected increases in temperature. However, MDE guidance documents fail to reflect these projections in several key areas such as design storm runoff volumes, runoff coefficients for various land uses, increased outfall temperatures, and the corresponding effects these discharges will have on water quality, streambank integrity, fish and benthic fauna. MDE has rightfully and consistently supported the concept of considering climate change in numerous state fora and projects but fails to do so within this permit program.

[24] *See* Maryland's Phase III Watershed Implementation Plan at 56 (Aug. 23, 2019).
[25] 33 USC § 1342(o)(1).
[26] https://nca2018.globalchange.gov/chapter/18/

Draft MS4 monitoring requirements being limited to one permanent cross section are unlikely to capture expected changes in hydrology. The Department should evaluate past monitoring data from the program relative to precipitation data from the permit time periods for both reference and developed watersheds to determine any trends in these outcomes that might require updated guidance.

Bay Model efficiencies for many restoration BMPs are likely to inaccurately reflect the real runoff constituents and behavior of runoff events downstream of outfalls that could liberate additional nutrients and sediments from stream banks. The impervious surface restoration requirements in the draft permits are insufficient to reduce nutrient and sediment loads on their own and many jurisdictions will attempt to meet those load reductions through nutrient trading unless our recommendation above that trading should be significantly restricted in the MS4 permits is adopted. The additional nutrient and sediment loads mentioned above could further impair 303(d)-listed segments requiring local TMDLs, and hydrologic damage to fish and benthic invertebrate habitats could result in degradation of Tier II waters and impairment of some Tier I waters by no longer supporting designated uses.

Impervious surfaces will be delivering hotter runoff, and given the stronger force of increased stormwater in stronger storms, potentially more contaminated runoff to local waterways than those same surfaces have in the past. Higher ambient temperatures will be more stressful to fish and invertebrates, and acting cumulatively with these discharges could affect stream Indices of Biotic Integrity (IBI) on which the state's tier system for classification is based, resulting in a shifting baseline. The final permit must include impervious surface restoration requirements that take into account a more realistic level of contaminant runoff, especially in local areas where nutrient and sediment loads are not the sole concern for meeting water quality standards and designated uses.

The MS4 permit is perhaps Maryland's most important climate adaptation policy. If the permits promote an acceleration of green infrastructure projects year after year and permit after permit, this key policy can help ensure Maryland slowly but surely re-plumbs its urban landscapes over the coming decades in a way that will maximize protections from the devastating effects of climate change that we know are coming. Maryland can lead the nation in climate adaptation with only minor tweaks to these permits. Instead, the State is promoting a short-sighted and penny-pinching approach to stormwater and flood control that will have lasting and long-term adverse consequences for the health and well-being of Maryland's communities, economy, and environment.

Climate Change in the Accounting Guidance Document comments:

<u>MDE Should Require More Than 1-Inch of Rainfall to Consider a Surface 100% Treated</u>

The Accounting Guidance states, "Impervious acres in the drainage area are considered treated 100% for water quality when the runoff from one inch of rainfall over the drainage area is captured and treated."(1) Despite the increase in average rainfall, the 1-inch treatment standard is maintained in this accounting guidance, for all upland best management practices including structural practices, nonstructural practices, and alternative surfaces. The broad application of this metric shortcuts stormwater management treatment and undermines the MS4 program.

<u>MDE Should Revisit the Upper Limit for Extra Volumetric Credit</u>

We appreciate that on p. 27 of the Guidance, MDE will now give extra volumetric credit for storing up to a 3" storm, above the previous limit of 2.7". This credit is beyond the 1" requirement for redevelopment, and beyond the 2.7" current requirement for new development under state law. However, the 2.7" requirement for new development projects was based on the median value of the 1-

year storm for Maryland, or 2.7 inches of rainfall.[27] We request that MDE revisit whether 2.7" continues to be the median value of the 1-year storm for Maryland as the effects of climate change take hold. If the data shows the value is higher, perhaps even higher than 3", then MDE should pursue modeling to determine the appropriate volumetric credit for an expanded range with an updated model.

MDE Crediting Should Encourage Storage Systems Sufficient to Handle Heavy Rainfall Events
During heavy rainfall events, stormwater infrastructure built to lower standards are quickly overwhelmed, resulting in complete bypass of filtration and direct passage of pollutants into waterways. MDE's crediting should encourage stormwater management that anticipates and prepares for heavy storm events, and considers the possibility of increasing frequency of severe storms over the next decade.

MDE Should Explicitly Acknowledge and Reference Climate Change as a Factor in Updates
We recommend that MDE explicitly acknowledge climate change as the reason for adjusting its rainfall standards and counsel that providing more storage within stormwater systems enhances resilience to flooding from heavy rainfall events. We urge MDE to include more language relating to climate change and the need to build more resilient BMPs that can handle stronger storms throughout the document.

VIII. Environmental Justice: MS4 Permits Must Avoid and Eliminate Inequities in Polluted Runoff Impacts and Restoration Benefits

Stormwater pollution and flooding are environmental justice issues. 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. In Maryland and across the United States, residents of low-income communities and communities of color have long been excluded from decisions about land use. The result is that these neighborhoods are often paved over and lacking in green spaces that could absorb stormwater and filter contaminated urban runoff.[28]

In Maryland, analysis of demographic and land cover data confirms that low-income communities and communities of color have more impervious surfaces and less tree canopy, on average, than communities that are wealthier and predominantly white. Statewide, the quartile of census tracts with the most non-white residents are 35% impervious on average, whereas the whitest quartile of census tracts are only 13% impervious. The quartile of census tracts with the highest poverty rates have a tree canopy cover of 31% on average, compared to a 50% tree canopy cover in the quartile of census tracts with the lowest poverty rates. (Please see Appendix i for additional data and an explanation of the methodology used for these calculations.)

Furthermore, stormwater restoration is itself an equity issue. Restoration practices like green infrastructure provide not only improved water quality and reduced urban flooding, but also other

[27] Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated Guidance for National Pollutant Discharge Elimination System Stormwater Permits August 2014, at 17, available at, https://mde.maryland.gov/programs/Water/StormwaterManagementProgram/Documents/NPDES%20MS4%20Guidance%20August%2018%202014.pdf (page 17)

[28] *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.

benefits to communities such as cleaner air and reduced urban heat island effect.[29] Because many of these benefits are highly localized, the siting of green infrastructure and other stormwater BMPs can have equity implications if governments do not ensure that restoration efforts are carried out in marginalized communities.

In fact, the implementation of green infrastructure (ESD) in Maryland has not been equitable. According to data downloaded from MDE's StormwaterPrint GIS web application, ESD implementation in wealthier and whiter census tracts within Maryland's Phase I MS4 jurisdictions has far outpaced ESD implementation in census tracts with higher poverty rates and non-white populations. Within Phase I MS4 jurisdictions, the 50% of census tracts with the highest poverty rates have recorded 3,391 ESD projects, while the 50% of census tracts with the lowest poverty rates have recorded 9,998 ESD projects. Likewise, the 50% of census tracts with the highest percentage of non-white residents have recorded 4,822 ESD projects, while the 50% of census tracts with the lowest percentage of non-white residents have recorded 8,567 projects. (Please see Appendix i for additional data and an explanation of methodology.) While the StormwaterPrint data have not been updated online since 2017, we have no reason to believe that these implementation trends have changed substantially in the past three years. And we believe this is likely true because the expired permits have failed to require jurisdictions to invest in green infrastructure and have, instead, offered too much flexibility to move beyond urban areas and beyond stormwater management practices for required reductions.

It is critical that these draft MS4 permits include provisions to eliminate these existing inequities in both the harmful impacts of polluted runoff and the distribution of benefits that communities receive from jurisdictions' restoration efforts. Moreover, because one of the central principles of environmental justice is the right to participate as equal partners at every level of decision-making,[30] the permittees must be required to include all affected communities in permit implementation through robust and inclusive public outreach efforts.

We are disappointed to see that the draft permits do not include any of the equity-focused provisions we suggested in previous comments, and we hope that this omission does not indicate any indifference on MDE's part to the disproportionate environmental burdens borne by marginalized communities. Permit terms that are facially neutral about which communities benefit from implementation efforts will do nothing to remedy existing disparities, but rather will reinforce them. MDE must take affirmative steps to ensure that the MS4 permits do not lead, however unintentionally, to racist environmental outcomes.

We therefore urge MDE again to include permit language that ensures cleaner water and green infrastructure will be enjoyed by all people equally, and that all people will be included in decision-making processes. We believe that the draft permits continue to promote disinvestment in urban communities, which can only be addressed by requiring permitted jurisdictions to include more green infrastructure projects that enhance pollution controls and community wellbeing in disadvantaged communities. And we believe nutrient trading creates sacrifice zones that send restoration funds, and the benefits accrued from the projects those funds support, elsewhere.

Equity in Restoration and TMDL Implementation

[29] EPA, Benefits of Green Infrastructure, https://www.epa.gov/green-infrastructure/benefits-green-infrastructure.
[30] People of Color Environmental Leadership Summit, The Principles of Environmental Justice (Oct. 1991), https://www.nrdc.org/sites/default/files/ej-principles.pdf.

The draft permits do not include any guidelines or requirements regarding the locations where permittees should carry out their impervious surface restoration efforts (IV.E Stormwater Restoration). While we recognize the need for permittees to have a certain degree of flexibility in implementation, it is also important to ensure that the benefits of stormwater projects are enjoyed by all members of the community and not clustered in wealthier neighborhoods. To that effect, the permit should include provisions to guarantee that restoration activities benefit low-income communities and communities of color within each jurisdiction.

One option would be to provide a credit bonus to stormwater practices carried out in marginalized neighborhoods; this approach has been used in Washington state, where MS4 permits provide extra project credit for BMPs in overburdened communities.[31] EPA's EJSCREEN mapping tool provides an easy-to-use resource for jurisdictions to identify areas that meet certain demographic criteria.[32] In fact, Montgomery County has already used this tool to develop an "equity map" that it plans to use when carrying out its own restoration efforts, eventually proving the feasibility of directing implementation toward underserved areas.[33] Montgomery County is undertaking this effort without any promise of additional EIA credit or permit compliance from MDE, but if successful, MDE should ensure that this effort and lessons learned from it are replicated across the state and required in future permits, and should provide Montgomery County as much support as possible in implementation even now. Any such targeted focus on BMP implementation in marginalized communities must be accompanied by extensive community outreach to ensure that local concerns about green gentrification and other issues are addressed at the outset.

In the same vein, the permits should require permittees to consider equity as they develop and implement their TMDL implementation plans (IV.F). Permittees should ensure that pollution reductions achieved through TMDL implementation will not disproportionately benefit wealthier communities. One straightforward way to ameliorate any existing environmental inequities would be to require that permittees prioritize the TMDL watersheds with the highest proportion of low-income and non-white residents to implement first.

These efforts will be even more critical if MDE follows through on its proposal to allow jurisdictions to meet their restoration goals through significant water quality trading. Trading can have severe environmental justice implications, as it shifts pollution reduction activities from one geographic area or pollution sector to another. If jurisdictions decide to meet their permit requirements by purchasing pollution reduction credits from wastewater treatment plants or agricultural producers, fewer stormwater practices will be implemented in environmental justice communities and other demographically vulnerable areas. In a place like Baltimore, this would mean a city with more than 65% Black residents becomes or remains polluted because the local government chooses to pay someone elsewhere to reduce pollution. Because the benefits of stormwater BMPs are so localized, the result will be worse water quality, air quality, urban heat island, flooding, and other impacts to urban communities

[31] *See* Washington Department of Ecology, Phase I Municipal Stormwater Permit, Appendix 12 - Structural Stormwater Controls Project List, at 7 ("Multiply SSC point total by 0.10 for completed capital projects related to the MS4 which occur in overburdened communities."), https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Municipal-Stormwater-Phase-I-Permit.

[32] EPA, Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

[33] Montgomery County DEP, Watershed Restoration Suitability & Equity Mapping Tools, https://www.montgomerycountymd.gov/water/restoration/equity.html.

than would have occurred if the permittees were required to complete all their restoration locally without trading. MDE should ensure that a large percentage of completed restoration benefits historically underserved communities.

Equity in Analysis and Reporting

Environmental justice cannot be achieved without complete information about disproportionate benefits and burdens experienced by members of the community. Several permit provisions that deal with analysis and reporting provide opportunities to improve data transparency and identify areas in need of improvement from an equity perspective.

First, the permits require permittees to track and report a variety of information related to their enforcement of stormwater management rules for development sites (IV.D.1). In addition to the information already listed in the draft permits, permittees should also be required to report on compliance and enforcement of stormwater management requirements with the data broken out by census tract or ZIP code and cross-referenced against demographic data. This analysis would help identify whether the stormwater rules are being enforced fairly across all segments of the community, or whether certain demographic groups are more routinely granted waivers from compliance or subject to enforcement actions.

Second, in the annual TMDL implementation report (IV.F.3), permittees are required to document all "BMPs, programmatic initiatives, alternative control practices, or other actions implemented for each TMDL." This requirement should include an analysis of the geographic distribution of these practices and actions to determine whether they are disproportionately benefiting certain demographic groups. Finally, the permit should require a similar analysis when reporting on activities undertaken to meet the permit's impervious acre restoration requirement (IV.E), with the analysis detailing how many acres have been restored in each census tract or ZIP code, accompanied by demographic information for each area.

In addition, the permittee's annual report (V.A) should include a mandatory stand-alone section summarizing all of the equity and justice focused analyses described above.

Equity in Public Outreach and Notice

Given the emergent nature of storm and flood events, mechanisms for rapid public outreach are essential to addressing community needs. The draft permits require permittees to operate a compliance hotline for public reporting of water quality complaints, including illicit discharges, illegal dumping, and spills (IV.D.5.a). The permit should require them to have a mechanism in place for non-English speakers to access this hotline.

In addition to a hotline, permittees are also required to provide information to the general public about various stormwater topics (IV.D.5.b), as well as to educate homeowners specifically about best management practices for salt application (IV.D.4.d). These provisions should both include a requirement for permittees to seek out and accommodate non-English speakers in their outreach and education efforts. Adequate outreach to non-English speakers should go beyond the mere publication of documents in languages other than English. These populations must receive targeted outreach to ensure they are adequately informed, and to the same degree as their English-speaking counterparts. The permit could establish specific metrics for the number of languages that must be accommodated (e.g.,

the five most commonly-spoken languages in the jurisdiction, or any language spoken by more than a certain percentage of the population) or simply set a qualitative standard requiring inclusivity in all education and outreach activities.

Additionally, this "targeted outreach approach" should extend more generally to non-white and low-income communities to ensure they are included in all educational and engagement opportunities. The permits should list low-income communities and communities of color as a mandatory target audience for stormwater educational awareness efforts.[34] Moreover, these requirements should specifically apply to Indigenous communities. As of the last census, more than 40,000 individuals in Maryland identified as American Indian, and the state is home to at least 8 known tribes.[35] According to the National Park Service, over half of Maryland's Native population lives near Baltimore and Washington, D.C.[36] Given the significant Indigenous population in Maryland's urbanized areas, MS4 permittees should make a concerted effort to include them in all educational and public engagement activities. Permittees should regularly evaluate and re-evaluate the efficacy of their messaging in reaching marginalized communities.

Inclusivity is critical for public engagement and input around stormwater programs as well. Ample notice and sufficient outreach are critical for informing affected communities and allowing for meaningful participation. These draft permits require permittees to "maintain a list of interested parties for notification of TMDL development actions" and to "provide copies of TMDL stormwater implementation plans to interested parties upon request" (IV.F.4). While opportunities for targeted and/or advance notification could be helpful, the procedure as drafted reinforces pre-existing notice and outreach deficiencies to communities of color, non-English speakers, or immigrant Marylanders. Therefore, this section should be re-drafted to ensure that these communities are not further "locked out" of critical decision-making processes. Under the current draft permits, it is unclear whether individuals and organizations outside of the 'interested parties list' will be provided copies of TMDL stormwater implementation plans upon request. If not, this presents a significant barrier to meaningful participation. The permits should require permittees to make a dedicated effort to let marginalized communities including low-income and non-white populations know about opportunities to participate in any decision-making processes around the development, implementation, and/or updates of the permittees' stormwater programs.[37]

Finally, the permits should require permittees to publish a summary of the annual report in other languages so that a greater segment of the community can access information about the restoration efforts they are funding and how well those efforts are working.

Equity in Program Funding

The permits require permittees to annually analyze the expenditures necessary to comply with the permit, as well as to maintain adequate program funding (IV.H). The permits should also require them to

[34] *See* Washington Department of Ecology, Phase I Municipal Stormwater Permit (effective date Aug. 1, 2019), at 29 ("Each Permittee shall implement an education and outreach program for the area served by the MS4... To build general awareness, Permittees shall target the following audiences and subject areas: (a) Target Audiences: General Public (including school age children and overburdened communities)").
[35] National Park Service, https://www.nps.gov/cajo/learn/historyculture/american-indian-tribes-today.htm.
[36] *Id.*
[37] *See* Washington Department of Ecology, Phase I Municipal Stormwater Permit at 10 ("Permittees shall create opportunities for the public, including overburdened communities, to participate in the decision-making processes involving the development, implementation, and update of the Permittee's SWMP.").

analyze how the costs of implementation are borne by different segments of the population to ensure that the financial burdens are not disproportionately falling on low-income residents and people of color. The goal of the analysis should be to identify whether current funding mechanisms are regressive (i.e., imposed in such a manner that the burden is higher, relative to resources, on people with lower incomes).[38] If they are regressive, the permittee should be required to develop a plan to ameliorate the disproportionate burden on low-income people, whether that is through a restructured funding approach, an assistance program, a combination, or something else.

Additionally, permittees should be required to identify whether stormwater fees and/or costs are known to have led to shut-offs or disconnections of residents' water service, including during the pandemic, and if so, how many.

IX. Permit Waivers: The Permits Should Require Tracking of Stormwater Control Waiver Quantity and Volume, Not Just Counts and Types of Waivers

The standard permit language in the draft permits (Part IV.D.1.b.iv) says: "Activities...shall include...Maintaining programmatic and implementation information related to...**Number and type of waivers received and issued**, including those for quantity control, quality control, or both. Multiple requests for waivers may be received for a single project and each should be counted separately, whether part of the same project or plan."

The bold section above should be revised as follows:

"Number, type, and WATER QUANTITY VOLUME of waivers received and issued..."

We have studied the granting and tracking of waivers in Montgomery County and have found it exceedingly difficult to determine how much stormwater goes uncontrolled as a result of these waivers. The Department of Permitting Services, which administers erosion & sediment control and stormwater management permits, only has a machine-readable digital database for the dollar amount of waiver fees, not the quantity of stormwater volume waived or ISR equivalent. Without knowing the volume of water not treated as per the Stormwater Management Act (and local standards), regulators cannot know how far behind they are slipping as a result of new or redevelopment that does not adequately control stormwater. **MDE should push permittees to improve the utility and accessibility of waiver databases and report not only on the number and types of waivers, but on the quantity of water management waived.**

[38] *See* Environmental Financial Advisory Board, *Evaluating Stormwater Infrastructure Funding and Financing* (Mar. 2020), at Table I-2, https://www.epa.gov/sites/production/files/2020-04/documents/efab-evaluating_stormwater_infrastructure_funding_and_financing.pdf (describing the "household affordability impact" of different stormwater funding mechanisms).

X. Include Watershed Assessments as in the Last Permits

We are also concerned that the draft permits recently released by the Maryland Department of the Environment would terminate the requirement for the preparation of Watershed Assessments (Section III.F in the 2010 permit text). Even if MDE assumes that all watersheds have now been appropriately assessed and a plan created, in some others these plans may now be more than 10 years old. Climate change, new development, new monitoring data, and other information should be used to update these assessments. And, in the 2020 drafts, there is no requirement to "report annually on the status of compliance with the watershed assessment schedule" as required in the 2010 permits.

This is of particular concern given Montgomery County's (and presumably others counties as well) intention to update the TMDL Implementation Plans for its impaired waterways, as directed in the 2020 draft permit. Such plans use the data gathered and the BMP location recommendations from the Assessments to formulate how the TMDL plans will be structured. The two activities work together to assure the efficacy of stormwater management to achieve durable reductions in pollutant loads. We urge that there be further consideration of the importance of Watershed Assessments, and a section thoughtfully utilizing and updating these important assessment tools added back in, before a proposed 2020 permit text is released.

XI. Deicing: A Positive Addition to the MS4 Permits

Thank you for including deicing as a component in the 2020 MS4 permits. Road salts are an emerging threat to the Chesapeake Bay Watershed. The use of road salts is accelerating faster than urban sprawl meaning the use of road salts is accelerating. While we understand that some use of salt may be needed for safety controls, the pervasive overuse of salts can have significant negative effects on our waterways. Not only can salt damage the ecology of local waterways, but excessive chlorides in drinking water sources from road salts can also be a significant human health danger. For example, it was the excessive chlorides in the Flint River, the drinking water in Flint, Michigan, that caused the water to become corrosive and led to the leaching of lead from drinking water pipes. The University of Maryland Extension has highlighted the concerns of rising salinity levels in Maryland groundwater and aquifers. Salt in Maryland well water is an ongoing issue and is also a concern for people who need a low-sodium diet for health reasons. The provisions in these MS4 permits are important first steps to addressing the emerging threat to our region.

Jurisdiction Specific Comments

Baltimore City & Baltimore County -

Despite the laudatory language in Baltimore City and County Draft MS4 cover letters and fact sheets about the jurisdictions' restoration of impervious acreage and robust stormwater programs, we are deeply concerned that the new permits will not result in improved water quality in the Patapsco and Back River waterways.

The new draft MS4 permit for Baltimore City doubles down on street sweeping and substantially increases the amount of stream restoration "acres" restored via proposed projects prioritized largely based on needed sanitary sewer rehabilitation under a Federal Consent Decree and opposed by concerned residents. In the City's 2019 Annual MS4 Report under its previous permit, it reported completing the "equivalent restoration" of more than 6,000 acres of impervious surfaces; 5,475 of these "equivalent acres" were calculated from street sweeping alone. As addressed above, street sweeping is a popular trash abatement strategy but does little to "control" stormwater or remove pollutants critical to the Bay and local TMDLs.

Only 1.54 acres of impervious surface were removed, and less than 200 acres were actually restored through City-installed environmental site design (ESD) practices, tree plantings, and voluntary third-party ESD implementation during the previous permit term. It is worth noting that after 6 years under this permit, calculated pollutant load reductions targets were not met. During the previous permit timeframe, Blue Water Baltimore conducted robust water quality monitoring in Patapsco River tributaries and found worsening nitrogen, phosphorus, water clarity, and conductivity trends at roughly half the nontidal monitoring locations throughout the Jones and Gywnns Falls.

Furthermore, it is critical to note that since street sweeping is an annual practice and not a permanent solution, the City must continue its prior commitment to street sweeping and add even more "lane miles swept" to achieve compliance with this new draft permit. During the COVID-19 pandemic in 2020, street sweeping in Baltimore City was one of the first services to be largely abandoned when the Department of Public Works experienced staffing shortages. Baltimore City's residents deserve far better that short-term patches to the growing crisis of climate change-induced flooding, basement backups, and property damage caused from uncontrolled stormwater.

While Baltimore County's permit includes a greater variety of BMPs and alternative BMP's to address pollution reductions, it remains problematic. Though MDE suggests that the new draft MS4 permits are consistent with the Phase III Watershed Implementation Plan requirement that each MS4 jurisdictions restore or treat 2% of its impervious acres annually to meet the Bay TMDL, it has issued a draft permit for Baltimore County that sets a restoration target more than 10% less than WIP3 target. In the fact sheet accompanying the draft permit, MDE asserts that "... the two percent goal can be met cumulatively by all Phase I Large MS4 permittees." This can only be interpreted as MDE allowing under-compliance without requiring the County to enter into trade agreements with other jurisdictions in order to benefit from their hoped-for overcompliance.

Viewed another way, MDE is approving inequitable accountability standards among jurisdictions. By allowing under-compliance with stormwater remediation requirements within the Patapsco or Back River watersheds in the County, MDE is allowing a more affluent and populous jurisdiction to eschew

pollution and volume reductions to the detriment of the less populous and affluent downstream neighbor. Under-compliance in Baltimore County won't impact County residents, but instead will impact City residents, already suffering the impacts of unmitigated stormwater. Though pollutant trading is highlighted as a compliance option in both permits, and in the June 2020 Guidance for crediting practices within MS4 permits, there is no requirement by MDE that Baltimore County trade with other jurisdiction(s) in order to make up for their planned shortfall. It is sadly absurd to read section IV.F.4 which suggests the County should communicate with "other jurisdictions or agencies holding stormwater WLA in the same watersheds, regarding its TMDL stormwater implementation plans."

Anne Arundel County

We appreciate the efforts of MDE and Anne Arundel County in their collaborative effort creating the draft Maryland Phase I Large MS4 Permit. The following comments are offered in the spirit of collaboration toward improving stormwater management standards, the health of the watersheds and rivers of Anne Arundel County and the Chesapeake Bay. Our concerns with the permits as drafted are as follows:

1. Part IV(D)(2)(b) One improvement of this section is that the language of this version is 'stronger' as it requires that the County ensures certification, whereas the prior permit only required the County to conduct trainings. However, this requires that only one training be offered. The prior version of the permit required construction site operator trainings to be done at least three times per year. Therefore, additional trainings should be made available, ideally at a rate greater than the previous permit required.

2. Part IV(D)(3)(a) It is a good change to make the county review all outfalls and prioritize, rather than allowing the simple screening of 150 outfalls at random. However, it is unclear how alternative programs submitted to MDE will be reviewable by the public.

3. Part IV(D)(3)(c) Written Standard Operating Procedures should be public.

4. Part IV(D)(3)(e) Making improved collaboration a facet of the permit is a good change, especially vis-a-vis the City of Annapolis. We would support this change in other jurisdictions as well.

5. Part IV(D)(4)(d) The three-year time period for the salt study is unclear and seems extensive. What does "based on" mean? The SHA salt management plan should be clear in how it accounts for regional differences within the state.

6. Part IV(D)(5) The prior permit included specific performance goals and deadlines. It is important that this language be restored.

7. Part IV(D)(5)(b)(iv) It is unclear how many more days or locations have been set up for household hazardous waste disposal. Available data on this should be offered.

8. Part IV(E)(5) It is unclear whether the specific numeric nutrient credits per equivalent impervious acre are the same as in the previous permit. (e.g. TN-18.08 lb; TP- 2.23lb; TSS-8046lb.)

9. Part IV(E)(7)(table 1) It is unclear what accounts for the differential values between years. Why isn't a set percentage of Cumulative Percent Impervious Acre Restoration Completed required each year for the permit term?

10. Part IV(F)(4) Given current circumstances related to the global health pandemic, the permit should more clearly outline opportunities and requirements for remote outreach.

11. Part VI SPECIAL PROGRAMMATIC CONDITIONS The statement, "Maryland's baseline programs, including the 1991 Forest Conservation Act, 1997 Priority Funding Areas Act, 2007 Stormwater Management Act, 2009 Smart, Green & Growing Planning Legislation, 2010 Sustainable Communities Act, 2011 Best Available Technology Regulation, and the 2012 Sustainable Growth & Agricultural Preservation Act effectively mitigate the majority of the impacts from new development," is conclusory, and is not supported by any reference to actual pollutant load reductions to the Bay from the State or County.

12. Appendix B There are several apparent discrepancies between the figures expressed in Appendix B of the permit and figures expressed in the County's financial assurance plan. For example, in Appx. B, the County expresses the anticipation of treating the equivalent of 124.3 impervious acres through septic system pumping in the first year of the permit. However, the financial assurance plan anticipates meeting its financial obligations to comply with the permit by treating 186.4 impervious acres through septic system pumping each fiscal year from FY19-FY23. There are other apparent discrepancies between the appendix and the financial assurance plan regarding street sweeping and catch basin cleaning. Please explain these apparent discrepancies.

Montgomery County

Rate of implementation

Because Montgomery County began its first Phase I MS4 permit in 2005 and second in 2010 but extended via consent decree through 2018, the county effectively had 13 years to achieve 30% ISR, which is an implementation rate of 2.3%/year. With the caveat that, as discussed elsewhere, ISR is an output-based measurement of activity and not actually an outcome-based measure of water quality success, if MDE continues to use this inadequate ISR metric, we believe that the level of effort required in the 2020 permit should be significantly higher than contemplated. If Montgomery County were actually on 5-year permit cycles of 10% 2005-2010, 20% 2010-2015, and 20% 2015-2020 as envisioned earlier in the MD stormwater planning process, the county should have achieved 50% ISR by now. Since the county is now effectively banking credits towards the next permit term (presumed to begin in 2021), they will effectively have 7 years to complete the ~10% additional ISR (1,814 acres) contemplated in the 2020 permit, which is an implementation pace of only ~1.4%/year. What this pace of implementation shows is that Montgomery County's, and probably other counties', effective maximum extent practicable should be set higher than the 2020 permit contemplates. Both the drafted 2%/year and the effective (including the extra two years of delay) 1.4%/year rates are lower than Montgomery County has clearly demonstrated it is able to achieve. We have recommended, and continue to urge, that if the ISR metric is continued to be used, counties continue to be required to meet 20% ISR over the permit term.

Trash, Floatables, and Debris

The current draft MS4 permit for Montgomery County restored some permit requirements related to trash, floatables and debris in line with the Anacostia Trash TMDL—which the previous version of the permit omitted significantly. The restoration of some of this language is certainly a small step in a better direction for the conditions of this permit. However, the language that currently appears in the section has been heavily reduced from the previous round of MS4 permits from 2014. The current draft requires that the jurisdiction provide "[U]pdates on the County's efforts to reduce trash, floatables, and debris, and show progress toward achieving the annual trash reduction allocation required by the Anacostia trash TMDL." The updates required by this current draft requires the county to describe the status of trash elimination efforts, including resources expended and the effectiveness of all program components. This effectiveness metric is explained as (1) quantifying annual trash reductions using the Department's TMDL analysis or an equivalent and comparable County trash reduction model; (2) the public education and outreach strategy to initiate or increase residential and commercial recycling rates, improve trash management, and reduce littering; and (3) an annual evaluation of the local trash reduction strategy including any modifications necessary to improve source reduction and proper disposal.

While these are important components of the permit as it relates to the Anacostia Trash TMDL, the requirements here are extremely watered-down compared to the previous Montgomery county MS4 permit. The 2014 permit conditions included trash, floatables and debris reduction requirements that were stronger and more specific. The permit's augmented permit conditions included litter and trash reduction strategies. Part IV(D)(4). The 2014 permit required:

- Inventory and evaluation of trash and recyclable pickup operations;
- Development and Implementation of a public education and outreach strategy with specific performance goals and deadlines;
- Development of a work plan consistent with the assumptions of the Anacostia Trash TMDL based on an estimation that 170,628 pounds of trash needed to be removed annually;
- Development of accounting methods to quantify trash reductions;
- Reporting progress toward implementation of the trash reduction strategy annually;
- Evaluation and modification of local trash reduction strategy with an emphasis on source reduction; and
- Conducting a public participation process in the development of the trash reduction strategy requiring sufficient notice, development procedures, a comment period and summarization of how the county addressed any material public comments received.

If this newest version of language addressing trash reductions and the Anacostia Trash TMDL remains in the current Montgomery County MS4 draft permit, (and likely the Prince George's County draft permit) the permit and the County's progress on trash, debris and floatables will move in a backwards direction from the 2014 permit.

Finally, it is unclear to this group why the earlier draft version of the Prince George's County MS4 permit was shared in August, but the final version of the permit was not released for comment with the other major draft permits on October 23rd. Particularly because these two jurisdictions are so critical to the Anacostia Trash TMDL, the Prince George's County MS4 permit should have been released for comment in draft form.

Conclusion

The MS4 permits are inadequate. Maryland is going in the wrong direction in the stormwater sector and these permits will only continue this downward trend. The MS4 permits need to be significantly altered. We appreciate the years of continued open dialogue and communication. We appreciated the opportunity to raise most of these concerns in our September 10th letter to MDE. However, we have raised most of the issues in this letter several times before in several letters and meetings with MDE and we will continue to do so. We are also dismayed that many of the most fundamental flaws in the MS4 permits are still unresolved despite our repeated comments, conversations and testimonies. We urge MDE and EPA to ensure that stormwater pollution is not ignored in Maryland. Significant changes must be made to the MS4 permits before they are finalized. **Finally, we urge MDE to release the permits for the other Phase I counties, as all are overdue for a new permit and the last five-year permit has expired.**

Thank you for your time and consideration. Please reach out to Ben Alexandro, water program director at the Maryland League of Conservation Voters at balexandro@mdlcv.org to discuss these issues in more detail.

Sincerely,

Alice Ferguson Foundation

Anacostia Watershed Society

Arundel Rivers Federation

Audubon Naturalist Society

Baltimore Green Space

Baltimore Tree Trust

Blue Water Baltimore

Chapman Forest Foundation

Chesapeake Bay Foundation

Chesapeake Legal Alliance

Citizens to Conserve and Restore Indian Creek

Clean Water Action

Cleanwater Linganore, Inc

Defensores de la Cuenca

Earth Forum of Howard County

Friends of Lower Beaverdam Creek

Friends of Nanticoke River

Friends of Quincy Run

Friends of Sligo Creek

Friends of St Clements Bay

Friends of the Bohemia

Healthy Soils Frederick

Little Falls Watershed Alliance

Maryland Conservation Council

Maryland League of Conservation Voters

Mattawoman Watershed Society

Montgomery Countryside Alliance

Multifaith Alliance of Climate Stewards

National Parks Conservation Association

Natural Resources Defense Council

NeighborSpace of Baltimore County

Preservation Maryland

Queen Anne's Conservation Association

Rachel Carson Council

Rock Creek Conservancy

Sierra Club - Maryland Chapter

Sleepy Creek Watershed Association

SouthWings

Trash Free Maryland

Waterfront Partnership of Baltimore, Inc.

Waterkeepers Chesapeake

West Montgomery County Citizens Association

Wicomico Environmental Trust

Appendix i: Equity Analysis - Data and Methodology

In order to identify existing inequities in environmental burdens and ESD implementation, we performed a GIS analysis using the following publicly available data sources:

- Population and homeownership data were obtained from the U.S. census through the Open Data Portal.[39]
- Poverty rates and racial data were obtained from the Centers for Disease Control's Social Vulnerability Index database.[40]
- Impervious cover information was obtained from the National Land Cover Database's "2016 percent developed imperviousness" GIS data layer.[41]
- Tree canopy percentages were obtained from the Maryland high-resolution tree canopy data layer developed as part of NASA's Carbon Monitoring System study.[42]
- Locational data for ESD restoration practices were obtained from MDE's StormwaterPrint GIS web application.[43] This information was last updated in 2017, although commenters have repeatedly asked for more updated information.

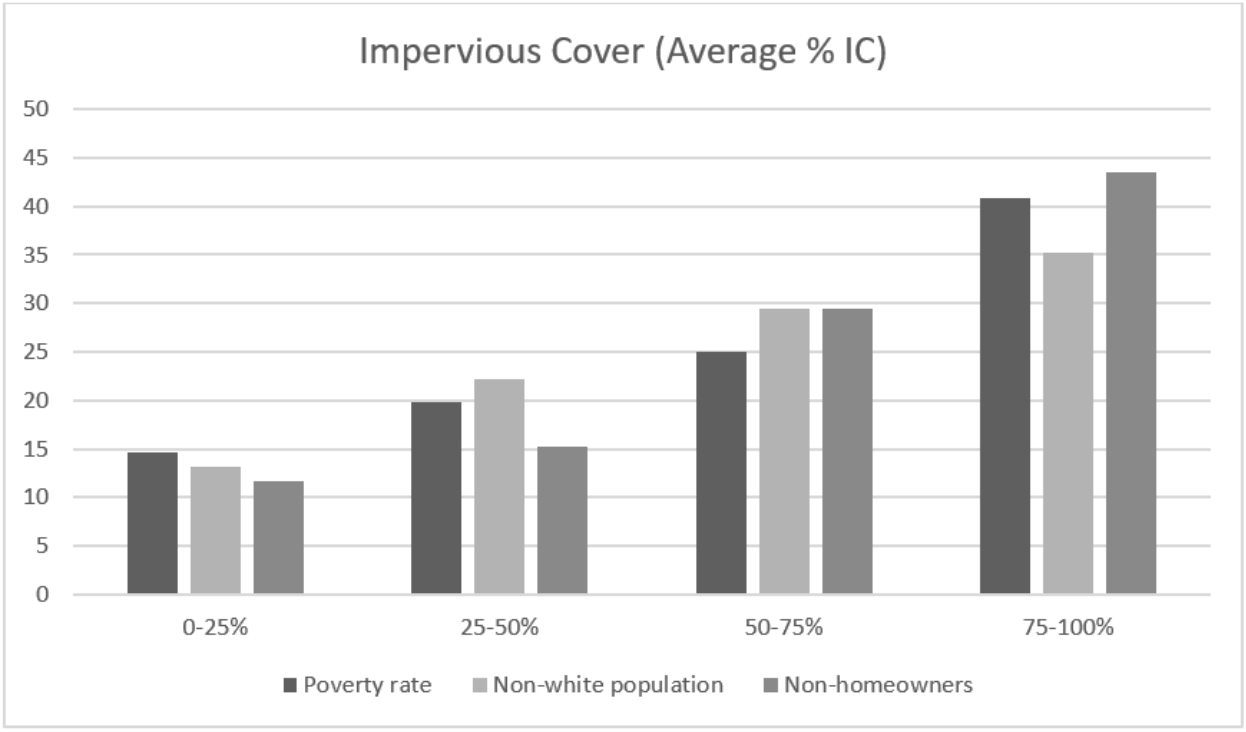
Maryland's census tracts were ranked according to three demographic metrics: (1) percentage of the population below the poverty line, (2) percentage of the population identified as a race other than non-Hispanic white, and (3) percentage of the population that does not own a home. The census tracts were then divided into quartiles for each of these metrics.

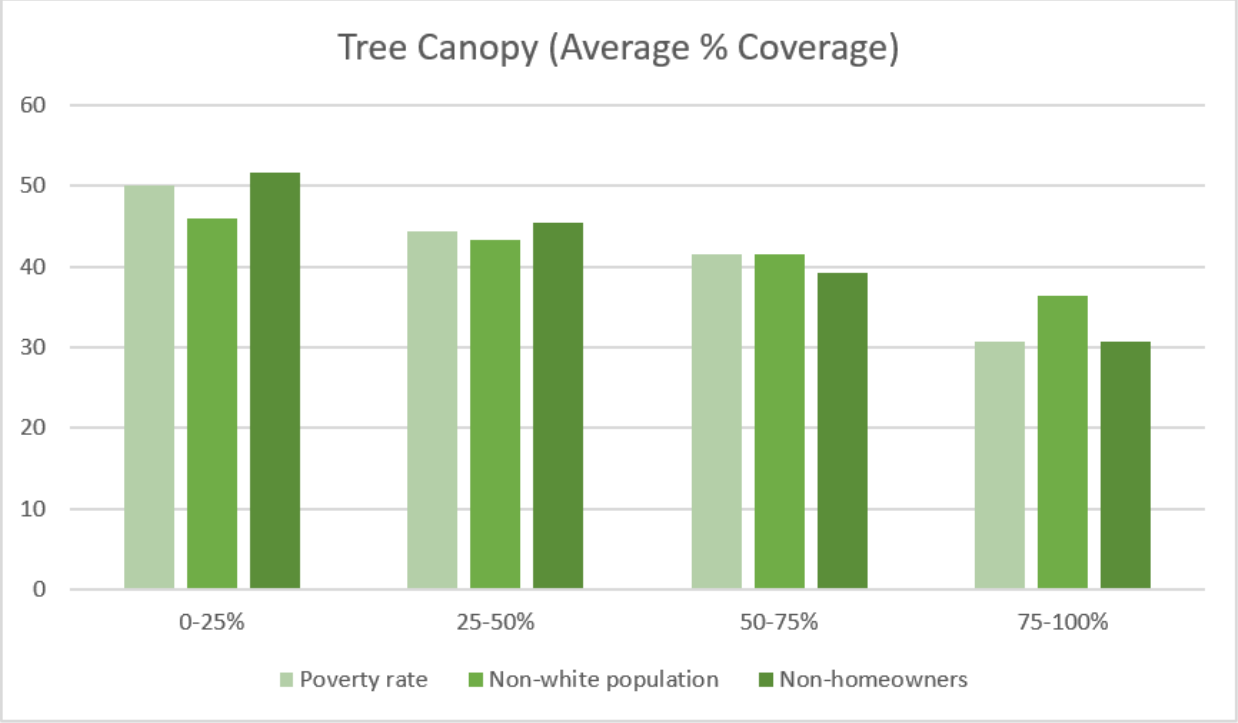
Impervious cover and tree canopy data were analyzed for each quartile. These analyses were done statewide. ESD implementation data were analyzed for each quartile of the census tracts located within MS4 Phase I-permitted jurisdictions only (as those jurisdictions are where the vast majority of stormwater project implementation is occurring).

The results of the impervious cover and tree canopy analysis are presented in the following table and charts. These results show that as low-income, non-white, and non-homeowner populations increase, the average impervious cover increases and the average tree canopy cover decreases.

[39] Maryland Census Data, https://data.imap.maryland.gov/datasets/bbe7d09a81fc40c8a7c9f4c80155842e_0.
[40] CDC Agency for Toxic Substances and Disease Registry, https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html.
[41] National Land Cover Database, https://www.mrlc.gov/data?f%5B0%5D=category%3Aurban%20imperviousness&f%5B1%5D=region%3Aconus.
[42] Maryland Canopy Cover, https://data.imap.maryland.gov/datasets/f70ada30bd29428395186ce5f3a618c5?geometry=-77.132%2C38.820%2C-76.588%2C38.913.
[43] StormwaterPrint, https://mdewin64.mde.state.md.us/SSDS/SWP/index.html.

	Quartiles	Average % Impervious Cover	Average % Tree Canopy Coverage
Non-white population (lowest to highest percentages of non-white residents)	0-25% (most white)	13.17%	45.96%
	25-50%	22.24%	43.26%
	50-75%	29.41%	41.54%
	75-100% (most non-white)	35.18%	36.39%
Poverty rate (lowest to highest percentages of population living below poverty line)	0-25% (lowest poverty)	14.57%	50.17%
	25-50%	19.81%	44.46%
	50-75%	24.98%	41.50%
	75-100% (highest poverty)	40.82%	30.77%
Homeownership (lowest to highest percentages of population not owning their own home)	0-25% (most homeowners)	11.63%	51.71%
	25-50%	15.19%	45.52%
	50-75%	29.41%	39.31%
	75-100% (fewest homeowners)	43.45%	30.76%





The results of the ESD implementation analysis, limited to census tracts located within Phase I MS4 jurisdictions only, are presented in the following table and charts. These results show that census tracts with higher poverty rates, higher non-white populations, and fewer homeowners have enjoyed fewer benefits from ESD implementation compared to census tracts with wealthier, whiter, homeowning populations.

	Quartiles	**Total # of ESD Projects in Quartile**	**ESD Projects per 1,000 Residents**
Non-white population (lowest to highest percentages of non-white residents)	0-25% (most white)	2,582	2.7
	25-50%	5,985	5.1
	50-75%	3,504	2.2
	75-100% (most non-white)	1,318	1.0
Poverty rate (lowest to highest percentages of population living below poverty line)	0-25% (lowest poverty)	6,788	4.5
	25-50%	3,210	2.4
	50-75%	2,231	1.8
	75-100% (highest poverty)	1,160	1.1
Homeownership	0-25% (most homeowners)	6,151	4.3

(lowest to highest percentages of population not owning their own home)	25-50%	2,964	2.6
	50-75%	2,822	2.2
	75-100% (fewest homeowners)	1,452	1.2