January 21, 2021

Mr. Raymond Bahr
Sediment, Stormwater, and Dam Safety Program
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

Re: NPDES MS4 Permit # 20-DP-3317, MD0068314

Dear Mr. Bahr,

I am writing to provide comments regarding MDE's tentative determination to issue a new NPDES MS4 permit to Baltimore County. MDE has worked for the past several years with Baltimore County, other MS4 permittees, environmental advocates, and the US EPA to prepare this draft permit. Such collaboration is necessary to generate permit requirements that are both effective in protecting water quality and practicable for local government compliance. MDE's solicitation and careful consideration of comments during tentative determination is a continuation of this commendable collaboration. It is my hope that MDE will use these comments to further improve the draft permit prior to final determination.

1. **Minimum acreage requirement for reforestation plantings in Accounting Guidance**
   The minimum area for crediting the "Forest Planting" land conversion BMP should be less than 1 acre. The Annotated Code of Maryland (and other sources) define forest as "…a land area of 10,000 square feet [0.23 acres] or greater." In addition, sometimes areas less than 1 acre are planted next to forested areas, in effect extending an existing forested land use. Forest plantings below 1 acre in size are particularly important in more densely developed watersheds and jurisdictions, where land ownership and land use patterns result in small and fragmented yet high functioning forest cover, and opportunities for reforestation plantings are constrained by small land ownership parcels and competing uses for open space (e.g. parks, playing fields, and other recreational amenities).

2. **Urban Tree Canopy in Riparian Buffer in Accounting Guidance**
   There is no mention of how to credit an Urban Tree Canopy (UTC) planting in a riparian buffer area. Similar to Forest Planting and Conservation Landscaping, an additional credit for implementing UTC in the buffer should be defined. Planting trees in riparian areas provides greater water quality and co-benefits (e.g. shading to reduce thermal pollution) compared to planting trees in upland areas, and this should be recognized and encouraged by the accounting guidance.

3. **Maximum permit term credit for elimination of discharges from grey infrastructure in Accounting Guidance: calculation error**

The calculation of maximum cumulative EIA credit for the elimination of individual discharges from Grey Infrastructure is incorrect, due to an error in unit conversion. The end result is a halving of the EIA credit maximum. The calculation steps and example in the Guidance must be corrected. This can be accomplished by removing the factor of 50% (fourth bullet on page 23 of the Accounting Guidance), or by adding a factor to convert from annual rates to cumulative loads (e.g. multiply the dry weather loading rate by 10 years, as in the corrected table below). The details of this error are further described below, and a corrected Table 18 is also provided.

The calculations described on page 23 and demonstrated in Table 18 of the Accounting Guidance intend to convert annual pollution loading rates to cumulative pollution loads over a multi-year period. However, the calculations MDE prescribes fail to multiply the rates (lbs/year) by the duration (10 years), and thus the results MDE presents remain as rates and are not the cumulative loads MDE intended. The corrected Table 18 below removes this error. It is worth noting here that the same end result is obtained by applying the standard rate-based EIA calculations utilized for all the other BMPs in the Guidance, with fewer calculation steps compared to the cumulative load methods MDE chose to apply to IDDE.

Table 18. Example Calculation of the Maximum Cumulative EIA Credit for the Elimination of Individual Discharges from Grey Infrastructure

Parameter	Units	Pollutant		
		TN	**TP**	**TSS**
Statewide Turf Unit Load (pervious unit load)	lbs/acre/yr	13.43	2.10	3,552.00
Total Pervious Acres in jurisdiction	acres	60,000	60,000	60,000
Total Annual Pervious Load (turf unit load multiplied by the total pervious acres in an MS4 jurisdiction)	lbs/yr	805,800	126,000	213,120,000
Total Annual Dry Weather Load (20% of the pervious load)	lbs/yr	161,160	25,200	42,624,000
Maximum Annual Load Attributable to Grey Infrastructure (20% of the dry weather load)	lbs/yr[1]	32,232	5,040	0
Maximum Cumulative Load Attributable to Grey Infrastructure over 10 years (annual load multiplied by 10 years)	lbs	322,320	50,400	0
Maximum Cumulative Load Attributable to Grey Infrastructure over 5 year permit term (annual load multiplied by 5 years)	lbs	161,160	25,200	0
True Forest Delta	lbs/acre/yr	18.08	2.23	8,046
True Forest Delta load, cumulative over 5 year permit term (True Forest Delta multiplied by 5 years)	lbs/acre	90.40	11.15	40,230
EIA of Max. Cumulative Load Attributable to Grey Infrastructure over 5 year permit term (max. cum. load from Grey Infra. ÷ true forest delta load)	acres	1,783	2,260	0
EIA Credit Maximum over a 5 Year Permit Term	acres	**1,348**		

Notes:

[1] No TSS reduction is assigned to this BMP by the 2014 Grey Infrastructure Report

4. **Maximum permit term credit for elimination of discharges from grey infrastructure in Accounting Guidance: results from field monitoring data should not be constrained by broad assumptions**
   IDDE pollution reductions are calculated using specific field monitoring observations taken at individual outfalls and illicit discharge locations. In contrast, MDE relies on assumptions from the expert panel report to set the maximum permit term credit for elimination of discharges from grey infrastructure (IDDE). Those assumptions were applied by the expert panel to all urban areas within the entire Chesapeake Bay watershed. It is inappropriate for specific measured quantities to be limited by such broad and general assumptions. The age and character of grey infrastructure varies dramatically among jurisdictions and across time, therefore grey infrastructure discharges are expected to vary among jurisdictions and across time. MDE should recognize this unavoidable variation, and the superiority of specific monitoring observations to generalized assumptions, by removing the maximum permit term credit. If MDE insists on retaining a maximum permit term credit for IDDE, MDE should invite permittees to propose alternative methodologies, assumptions, and data that are specific to the conditions in their MS4 jurisdiction. MDE should then give these proposals consideration, and approve them if it sees fit. Additionally, MDE should pursue research to improve the understanding of illicit discharge pollution loads and how they vary across locations and time. Such research could improve TMDL development, restoration planning, and implementation efforts by state and local governments.

5. **Urban Nutrient Management is missing from Accounting Guidance**
   There is no mention of Urban Nutrient Management BMPs or discussion of how to apply The Fertilizer Act in the Guidance document. This BMP is an important part of the Chesapeake Bay Watershed Model and is an important driver of MS4 nutrient loadings, affecting both local nutrient TMDLs and the Bay TMDL. MDE should recognize this and provide guidance on how this BMP affects impervious surface restoration and local TMDL WLA attainment.

6. **Good Housekeeping Plan requirement unfairly burdens local governments**
   Part IV.D.4.b of the draft permit requires the County to create and implement Good Housekeeping Plans (GHPs) at facilities where stormwater pollution risks exist but are not required to be covered by NDPES Industrial Stormwater permits. It is possible that some stormwater pollution benefit will be achieved via this requirement. However, it is notable that this requirement only applies to facilities owned by local governments and state agencies covered by MS4 permits. The conditions GHPs address also exist at privately owned facilities. Why is MDE arbitrarily singling out government facilities for this requirement? If GHPs are necessary, MDE should use their authority to also apply this requirement to the owners of all relevant privately owned facilities, and government facilities not owned by a MS4 permittee.

7. **Force Majeure language**
   Recent events have highlighted the potential for events beyond permittee control to delay or prevent compliance with MS4 permit requirements. A record wet year in 2018 damaged BMPs and threatened many others, requiring higher than expected capital expenditures on BMP maintenance. The coronavirus pandemic has and will continue to affect state and local government budgets, and

may diminish fiscal capacity, upsetting the carefully executed MEP analyses and the resulting restoration requirements in the draft permit. The County requests that MDE recognize the potential impact of events beyond permittee control by adding Force Majeure language to the MS4 permit. It is our understanding that such language exists in MS4 permits issued in Virginia and approved by EPA Region 3, so precedent and acceptable language is available. Below is language from a Virginia MS4 permit, provided as an example:

> "In the event the permittee is unable to meet conditions of this state permit due to circumstances beyond the permittee's control, a written explanation of the circumstances that prevented permit compliance shall be submitted to the Department in the annual report. Circumstances beyond the permittee's control may include abnormal climatic conditions; weather conditions that make certain requirements unsafe or impracticable; or unavoidable equipment failure caused by weather conditions or other conditions beyond the reasonable control of the permittee (operator error and failure to properly maintain equipment are not conditions beyond the control of the permittee). The failure to provide adequate program funding, staffing or equipment maintenance shall not be an acceptable explanation for failure to meet permit conditions. The Board will determine, at its sole discretion, whether the reported information will result in an enforcement action. In addition, the permittee must report noncompliance which may adversely affect surface waters or endanger public health in accordance with Part 11.1."

8. **Trading with wastewater sector is inappropriately restricted**

Baltimore County intends to meet all permit requirements without relying on trading with waste water treatment plants (WWTP). However, this option is an important BMP that the County may turn to as an adaptive management action should the County fall behind on restoration requirements. Trading with WWTPs is particularly relevant to the impervious surface restoration requirement, which is designed to help the State meet the Chesapeake Bay TMDL: many WWTPs discharge directly to the tidal waters of the Bay, and pollution reductions at WWTP are therefore a good fit for the MS4 permit impervious restoration requirement. Moreover, in the Baltimore region, MS4 restoration is funded the same tax and rate payers who fund the WWTPs. If the investments and actions of local government, residents, and businesses result in over-performance at WWTPs, that over-performance should be available to meet MS4 requirements, without limit.

9. **Impact of Maryland's baseline programs on TMDL progress**

Part VI of the permit appears to require Baltimore County to include in its annual Countywide Stormwater TMDL Implementation Plan a numerical accounting for pollution load changes from new development, including the impact of statewide development regulations on those load changes. This would be a major new technical undertaking, one for which MDE has provided no guidance or standards to MS4 permittees. MDE has also not explained the need for this new requirement. It is therefore premature to require permittees to submit an annual numerical accounting. The permit language should be revised to provide the permittees and MDE with greater flexibility, at least until the technical details, guidance, and standards have been resolved. One way to achieve this is to replace the final sentence of Part VI with "<permittee> shall include a brief written analysis of the impacts of these programs each year when it updates its Countywide Stormwater TMDL

Implementation Plan as stipulated in Part IV.F.3.b of this permit." MDE should meet with MS4 permittees to explain this new requirement, and to discuss what MS4 permittees can and should report regarding new development and the impacts of state development regulations.

10. **Countywide TMDL Implementation Plan should not apply to Chesapeake Bay TMDL WLAs**
Section IV.F should be revised to clarify that Chesapeake Bay TMDL WLAs assigned to MS4 permittees and listed in Appendix A are not subject to the requirements of section IV.F. The County understands that the Chesapeake Bay TMDL WLAs listed in Appendix A do not require MS4 permittee stormwater implementation plans, because the State's Phase III WIP and the impervious restoration requirement in the MS4 permits are the strategy and current implementation plan for progress towards those WLAs during this permit term. MDE staff have confirmed the County's understanding. For the Chesapeake Bay TMDL WLAs, the intentions of section IV.F are met by the State's Phase III WIP, and by MS4 permittee's annual reports, Appendix B updates, and the biennial Financial Assurance Plans. Additional accounting is unnecessary, will take County resources away from necessary work, and clutter reports with extraneous information.

11. **Public outreach requirements should not apply to annual updates of Countywide TMDL Stormwater Implementation Plan**
The current language could be interpreted to mean that the public outreach requirements for TMDL Stormwater Implementation Plans (section IV.F.4. a-e) apply to the annual updates to the Countywide TMDL Stormwater Implementation Plan (section IV.F.3.). Should the public outreach requirements apply to the annual updates to the Countywide TMDL Stormwater Implementation Plan, MS4 permittees will have to notify interested parties, distribute materials, hold a minimum 30 day public comment period, and document how all relevant comments were addressed before finalizing each year's NPDES MS4 annual report. We expect this will require at least three months of time each year, and will consume substantial amounts of County staff time that would be otherwise used for urban stormwater restoration and other MS4 permit compliance efforts. It could make the annual reporting timeline infeasible. I understand that this was not MDE's intention. Please revise the permit language to avoid this interpretation.

12. **Correct modifications by MDE to MEP impervious restoration**
During MDE's review of the County's MEP analysis, MDE identified additional restoration progress it believed the County could provide during the permit term. MDE explained the details of this additional restoration progress to County staff. The County agrees with the principles behind the revisions, but has concerns about errors in some of the specific quantities. Due to these concerns, the County asks MDE to reduce the impervious restoration requirement by 407 acres. The details of the errors are explained below:

12.1. The fact sheet states "BMP Portfolio that proposed 2,451 impervious acres." Review of the data and calculations, updated to reflect MDE's June 2020 guidance and recent quality control of BMP databases, show that this quantity should now be 2,156 acres, or 295 acres less. Baltimore County's MEP restoration portfolio proposed 2,084 acres. In April 2020, MDE, with County staff assistance, identified 366.7 acres of additional restoration that was not included in the MEP restoration portfolio. These 366.7 additional acres were completed during the second

half of FY2019, after the expiration of the prior permit. Adding this additional impervious surface restoration progress to the restoration portfolio returns 2,451 acres (2,084 + 367), the number stated in the fact sheet. Since issuing the 2019 MS4 annual report in December 2019, County staff have recalculated the second-half FY2019 impervious restoration credits to match MDE's June 2020 guidance document, and performed routine quality control on BMP databases. The quantity of impervious restoration completed during the second-half FY2019 and not included in the restoration portfolio is now known to be 71.6 acres (down from 366.7 acres), and the 2,451 acres from the fact sheet should be revised to 2,156 acres (2,084 + 72). This is 295 acres less than the number presented in MDE's fact sheet, and used by MDE to arrive at the 2,696 impervious surface restoration requirement. The County asks that MDE reduce the impervious restoration requirement by 295 acres, to accurately reflect the County's maximum extent practicable restoration capacity.

12.2. As described in the fact sheet, MDE added additional impervious restoration, beyond what was in the County's restoration portfolio and second half of FY2019. MDE staff have explained the additions to County staff. The County is concerned about the additional credit added for stream restoration projects. MDE assumed that all stream restoration projects in the portfolio using the default rate would switch to use the expert panel protocols prior to construction. This is true for most such projects, but four of the projects in the restoration portfolio were designed prior to the expert panel protocols and will use the default rate. MDE assumed that applying the protocols to these four projects would add 112 acres of impervious restoration. This assumption is incorrect, and the four projects will not have an increase in credit beyond the default rate presented in the MEP portfolio. The County asks that MDE reduce the impervious restoration requirement by 112 acres, to accurately reflect the nature of those four projects.

13. Appendix B revision

As indicated in Part IV.E.4, the County may replace individual practices listed in Appendix B as long as the total restoration at the end of the year meets the implementation benchmark. The County has revised Appendix B (attached), and requests that MDE use the revised appendix in the final permit.

14. MEP is the appropriate way to set aggressive yet attainable restoration requirements

MDE's use of Maximum Extent Practicable (MEP) analysis to set the impervious surface restoration requirement in this permit is appropriate and laudable. Restoration opportunities and fiscal capacities vary among local governments and over time. MDE's use of MEP analysis prudently accounts for this simple and important truth. When restoration requirements are set without consideration of MEP, it is expected that some permits will be too aggressive and unattainable, resulting in unproductive expenditures of time and funds on enforcement actions. Likewise, some other permits will not be aggressive enough, risking a needlessly slow pace of water quality restoration. The MEP analysis, completed by Baltimore County at MDE's request and reviewed by MDE staff, ensures the restoration requirement is sufficiently aggressive to maximize the rate of water quality restoration, without exceeding the County's capacity to implement restoration projects during the permit term.

Thank you for your continued efforts on this draft MS4 permit. Please give these constructive comments full consideration before proceeding with the next steps in permit issuance. I am available to discuss any questions you may about any of these comments.

Sincerely,

Robert Hirsch
Manager, Watershed Management and Monitoring Section
Baltimore County Department of Environmental Protection and Sustainability

CC: Lee Currey, David Lykens, Brady Locher, William Merrey, Kevin Brittingham

Appendix B

Year 1 BMP Portfolio – New and Replacement BMPs

BMP NAME	BMP TYPE[1]	NUMBER of BMPs	IMPERVIOUS ACRES TREATED[3]	LENGTH RESTORED (feet)/ LANE MILES (miles)/ MASS LOADING (lbs)[3]
Obligations from Previous Permit That Must Be Continued				
Annual BMPs[2]				
Catch Basin Cleaning	CBC	76	12.99	100,596
Septic System Pumping	SEPP	1,826	36.50	N/A
Capital Projects (Proposed to Replace Annual Obligations)				
Shallow Marsh	WSHW		42.82	N/A
Stream Restoration	STRE		408.34	11,453
Planting Trees/Forestation on Pervious Urban	FPU		14.18	N/A
Other	RFP		1.82	N/A
Proposed Restoration for Year 1 of the Reissued Permit				
Capital Projects				
RSTTBD0002	WSHW	6	21.20	N/A
RSTTBD0003	WSHW	5	17.60	N/A
ALN000159	OUT	1	35.92	303
ALN000068	STRE	1	69.52	3,320
ALN000147	STRE	1	72.42	3,386
ALN000054	STRE	1	160.00	8,000
ALN000062	STRE	1	149.50	7,475
ALN000046	STRE	1	90.26	4,513
ALN000118	STRE	1	10.10	505

ALN000119	STRE	1	2.60	130
ALN000111	STRE	1	81.46	6,300
APY014833	FPU	1	9.00	N/A
APY014833	FPU	1	0.00	N/A
APY013813	FPU	1	0.61	N/A
APY014832	FPU	1	11.00	N/A
APY013921	FPU	1	6.60	N/A
APY014830	UTC	1	0.18	N/A
APY013922	FPU	1	1.91	N/A
APYTBD001	FPU	1	1.10	N/A
APYTBD002	FPU	1	1.10	N/A
APYTBD003	UTC	1	0.42	N/A
APY001314	RFP	1	2.75	N/A
APY001314	FPU	1	2.75	N/A
APY014831	FPU	1	1.11	N/A
APYTBD004	UTC	6,000	16.80	N/A
APYTBD005	UTC	1	0.59	N/A
APYTBD006	UTC	1	0.34	N/A
APYTBD007	UTC	1	0.17	N/A
APYTBD008	UTC	1	0.13	N/A
APYTBD009	UTC	1	0.08	N/A
APYTBD010	UTC	1	0.20	N/A
APYTBD011	UTC	1	0.23	N/A
APYTBD012	UTC	1	0.18	N/A
APYTBD013	UTC	1	0.38	N/A
APYTBD014	RFP	1	1.69	N/A
APYTBD015	FPU	1	1.43	N/A

APYTBD016	UTC	1	0.07	N/A
APYTBD017	UTC	1	0.14	N/A
APYTBD018	UTC	1	0.03	N/A
APYTBD019	UTC	1	0.06	N/A
APYTBD020	UTC	1	0.11	N/A
APYTBD021	UTC	1	0.09	N/A
APYTBD022	UTC	1	0.14	N/A
APYTBD023	UTC	1	0.03	N/A
APYTBD024	UTC	1	0.03	N/A
APYTBD025	UTC	1	0.05	N/A
APYTBD026	UTC	1	0.10	N/A
APYTBD027	UTC	1	0.59	N/A
APYTBD028	UTC	1	0.21	N/A
ALN000008	SHST	1	36.01	1,510

Notes:

1. BMP types are from the MS4 Geodatabase.
2. Includes BMPs to be maintained each year unless replaced with permanent BMPs.
3. Street sweeping is an annual practice that is averaged over the 5 year permit term. This level of effort will need to continue to maintain the restoration reported in Year 1.

Column Descriptions

- BMP NAME: Unique ID or name of project.
- BMP TYPE: Type of restoration BMP. BMP types and classes from the MS4 Geodatabase (see table below). Additional BMP types (e.g., IDDE) from the 2020 Accounting Guidance may also be used.
- NUMBER OF BMPs: The number of restoration BMPs present. If a project has multiple types of a single BMP, the amount is identified in the Number of BMPs column. If using septic pumping or denitrification, the number of affected septic systems is reported in this column.
- IMPERVIOUS ACRES TREATED: Impervious drainage area (acres) reported using the 2020 Accounting Guidance.
- LENGTH RESTORED (feet)/ LANE MILES (miles)/ MASS LOADING (lbs): Length of stream restoration, outfall stabilized, or shoreline stabilized/ lane miles swept/ pounds of material removed as a part of inlet cleaning.