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# Maryland Department of the Environment Water and Science Administration

Basis for Final Determination to Modify Harford County's National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit

> DISCHARGE PERMIT NO. 11-DP-3310 NPDES NO. MD0068268

Effective Date: November 8, 2019 Expiration Date: December 29, 2019

# Introduction

The Maryland Department of the Environment (the Department) made a tentative determination on July 5, 2019 to modify the National Pollutant Discharge Elimination System (NPDES) municipal separate storm sewer system permit ("stormwater permit" or "MS4 permit") issued to Harford County (the County). The stormwater permit that was originally issued on December 30, 2014 established specific conditions for regulating stormwater discharges from Harford County. Public notice of the Department's tentative determination to modify the permit appeared in the Maryland Register on July 5, 2019 as required by Maryland's Administrative Procedures Act (APA). Additionally, the Department maintains an interested parties list that includes federal, State, and local municipal officials as well as numerous citizens of Harford County and Maryland that were notified of the tentative determination.

In addition to the notification of tentative determination, the Department conducted a public hearing regarding the proposed modifications to the County's permit. The hearing to accept testimony and comment regarding the modifications was held on August 22, 2019. Two individuals representing various environmental groups as well as a representative of Harford County testified at the hearing and an official transcript of the proceedings furnished by Irwin Reporting is available on the Department's website.

After the hearing, the public record regarding the modifications to Harford County's stormwater permit remained open until October 3, 2019 to accept further comment in accordance with the APA. In aggregate, the comments received during the public hearing offered various perspectives on the major tenets of water quality trading and with respect to Harford County's stormwater permit. The issues receiving the most comments included procedures for water quality trading, how trading affects the existing impervious surface restoration requirement, and how trading will affect future permit requirements. Each of these issues will be addressed below as part of the Department's Basis for Final Determination.

# **Background**

When the Chesapeake Bay Total Maximum Daily Load (TMDL) was published in December 2010, each state in the Chesapeake Bay watershed was required to develop a Watershed Implementation Plan (WIP) for how it would achieve the pollution load reductions required by the TMDL. Maryland's WIP established a State framework for meeting the water quality goals for the Chesapeake Bay by 2025. Much of the urban stormwater goals were to be implemented through NDPES MS4 permits. Specifically, the Department's NPDES MS4 permits address stormwater concerns related to local and Chesapeake Bay TMDLs via a 20 percent restoration requirement for impervious surfaces that have no treatment.

Harford County's NPDES MS4 Phase I permit requires restoration of 20 percent of the impervious surface. Restoration control practices implemented by the County include traditional methods (e.g., ponds, filters) and alternative methods (e.g., tree planting, stream restoration) based on the Department's "Accounting for Stormwater Wasteload Allocations and Impervious

Acres Treated, Guidance for National Pollutant Discharge Elimination System Stormwater Permits" (MDE, August 2014), also known as the MS4 Accounting Guidance.

# 1. Water Quality Trading Program Regulations

Numerous comments received by the Department were directly related to the recently adopted Water Quality Trading Program regulations, Code of Maryland Regulations (COMAR) 26.08.11, which became effective on July 16, 2018. These regulations were originally published in the Maryland Register, 44:25 Md. R. 1189-1195, on December 7, 2017, and republished with nonsubstantive changes, 45:14 Md. R. 698-702, on July 6, 2018. Comments regarding Maryland's Water Quality Trading Program that have been addressed through prior regulation adoption and citizen participation opportunities found in State Government Article (SG) Annotated Code of Maryland, Title 10, Subtitle 1, and 7-213 include:

# A. Local Water Quality Provisions

**Comment(s):** Concern was expressed that applying the water quality trading regulations to MS4 permits without further specifying how the credits must be purchased in regard to impaired local waters will worsen water quality hotspots.

**Department Response:** Water quality trading regulations in COMAR 26.08.11.08 stipulate how local water quality is addressed and limitations on where the credits can be generated.

#### B. Performance Standards and Associated Pollutant Reductions

**Comment(s):** A comment was made that unless the Department prohibits it, wastewater treatment plants operating under three parts per million could generate thousands of nitrogen credits that could be sold cheaply or provided at no cost, which would flood and crash the market. Also stated was that additionality is the most important component of nutrient trading and it is inappropriate to trade with a wastewater treatment plant that was upgraded with State funding.

**Department Response:** Wastewater treatment plant performance criteria are stipulated in COMAR 26.08.11.06 for total nitrogen and total phosphorus and ensure that additional pollutant reduction credits are generated. The regulations allow credits to be generated by a wastewater point source "based on that wastewater point source's performance". Additionally, performance criteria are stipulated in COMAR 26.08.11.03 to ensure that additional pollutant reduction credits are generated. The use of public funding for wastewater treatment plant upgrades is addressed in COMAR 26.08.11.04.

# C. Availability of Credits

**Comment(s):** Concern was expressed that credits from Harford County's wastewater treatment plant have not appeared as available for trade. The permit modification process should include an analysis of reasonable assurance that incorporating trading in these permits can help permittees meet compliance deadlines. Transparency was also requested regarding the generator of the

credits. A comment questioned what the origin of phosphorus and sediment credits will be if total nitrogen is being acquired from wastewater treatment plants.

**Department Response:** Permittees are responsible for acquiring credits in the public marketplace. It is not the policy of the Department to mandate where permittees must locate credits, provided the credits are generated and certified according to the State regulations.

# 2. Timing, Permit Compliance, and Future Permits

A. Permit Modification Timing and the Uncertainty of Continued Restoration Implementation

Comment(s): Several comments were submitted regarding the timing of permit modifications and delays in program implementation. For example, a comment was made that it is inappropriate to modify the permit to include trading because it is about to expire and the County has not provided plans for real projects that will improve water quality to replace these trades. This amendment damages the validity of a trading market and of the MS4 permit itself. Furthermore, trading should not be used to avoid enforcement. Allowing unmet permit obligations to be met through trading will exacerbate the delay and disruptions in program implementation. In addition, a comment questioned how nutrient and sediment pollution reduction goals can be achieved if the impervious surface restoration goals are missed.

**Department Response:** The Permit Modification Fact Sheet notes that nutrient load reductions achieved through the trading program shall be replaced by stormwater practices during the next permit term. Permittees shall continue to pursue current restoration efforts and track progress in annual reports as specified in the permit modification.

# B. Permit Compliance

Comment(s): Several comments received by the Department were related to compliance with the current permit. For example, language should be added to formalize the expectation that credits must be maintained until converted into stormwater practices, and that the conversion must happen in the next permit term. There was a request that the Department take more proactive steps in identifying progress delays and implementing schedules of compliance with alternative practices. Concern was also expressed that the number of impervious acres that the County will need to restore using the nutrient trading program is a significant percentage of its total restoration requirement. The Department should also take additional enforcement action to ensure compliance with the State's financial assurance requirements.

**Department Response:** As noted above, the Permit Modification Fact Sheet provides information on how trading under the current permit will affect requirements in future permits. Nutrient trading to meet the MS4 permit's 20 percent impervious surface restoration (ISR) requirement shall be continued annually until a new permit is issued to Harford County. The trading regulations (see COMAR 26.08.11.08) specify that if there is a default in a trade contract, expiration of a credit, or suspension or revocation of a credit, the buyer (e.g., the County) using the credit remains responsible for complying with the permit. In any of these events, the permit modification requires the County to inform the Department annually of how it is maintaining

compliance with the restoration requirement of the permit. The number of acres restored through restoration projects and nutrient trading will not be known until the permit term concludes and the County submits final restoration reporting. In addition, the fiscal capability of jurisdictions to meet permit requirements is addressed through the Financial Assurance Plans (FAPs).

With respect to the new permit, the Department will notify and engage stakeholders in the process when it is drafted. There will be further opportunity for public comment and participation on this matter in future permits. This applies to any other NPDES permit modification and compliance actions taken by the Department under the terms of this permit.

#### C. Status of Permit Modifications

**Comment:** Information was requested on the status of trades made by the Phase I large MS4s whose permits have been modified to allow trading and for those Phase I medium MS4s that are undergoing permit modifications.

**Department Response:** Information on trades by permittees will be posted online on the Nutrient Trading Register.

#### 3. Calculations Specified in the Permit Modification

#### A. Transparency and Nutrient Credit Calculations

**Comment(s):** Concern was expressed that there should be more transparency as to how nutrient credits are calculated and there is a lack of clarity on the urban loads that should be used.

**Department Response:** PART IV.E.3 of the MS4 permit (Nutrient Trading) specifies that "[T]he basis for an equivalent impervious acre restored through trading is the difference in pollutant loads between urban and forest stormwater runoff according to [the Accounting Guidance]." Appendix D of the Accounting Guidance explains the nutrient conversion process and provides example calculations to determine impervious acres treated based on given pollutant load reductions. Specifically, Tables D.1 and D.6 provide the level of nutrient load reductions per acre of nutrient trading credit. Therefore, this information is already available and is incorporated by reference into the modified portion of the permit.

# B. Specificity on Nutrient Amounts

**Comment(s):** There were several comments that recommended specific changes to address the need for transparency on the number of credits that must be acquired to meet MS4 permit requirements. These changes included adding specific amounts of nitrogen, phosphorus, and sediment needed for each acre of ISR.

**Department Response:** With respect to including specific amounts of each nutrient in the permit, the County is currently working to meet the ISR requirement using practices identified in its annual reports and FAPs. The results of these efforts will be reported in the upcoming annual report(s). Until then, the Department cannot determine how much nutrient trading each

jurisdiction will need to comply with the current permit. Because of this uncertainty, it would be inappropriate for the Department to assign specific amounts within the permit.

#### 4. TMDLs and Restoration Plans

A. Status of Restoration Plan Approvals

**Comment:** A comment was submitted expressing concern that the status the County's TMDL restoration plan approvals is unknown and remains an unaddressed issue for a permit that will expire soon.

**Department Response:** The County's TMDL Implementation Plan requirements are not related to this permit modification process. These concerns may be brought to the Department's attention separately from issuing this Final Determination.

B. Lack of Information in the Annual Reports

**Comment:** A comment was made that the County's annual reports do not provide enough information on baseline loads to determine what reductions have been achieved. It is unknown whether the reductions for 2025 will be met even if the ISR requirement is completed. Allowing nutrient trading would put the County further behind in meeting the 2025 targets.

**Department Response:** The restoration requirements in the current MS4 permit are based on an impervious acre metric. Meeting the ISR requirement is considered sufficient progress toward meeting TMDL stormwater wasteload allocations (WLAs) and is the basis for determining permit compliance.

C. Use of the Impervious Surface Restoration Metric for Achieving Nutrient Reductions

**Comment:** A comment questioned whether the ISR metric is still useful for achieving TMDL nutrient reduction goals.

**Department Response:** The Department has determined that compliance with the 20 percent ISR requirement in the permit constitutes adequate progress toward compliance with Maryland's receiving water quality standards and United States Environmental Protection Agency (EPA) approved stormwater WLAs for the Chesapeake Bay and local TMDLs. Furthermore, the Maryland State Court of Appeals in *MDE et al. v. Anacostia et al.* affirmed the 20 percent restoration requirement as a "well developed and vetted strategy." As previously noted, the Department will notify and engage stakeholders in the process when the next permit is drafted. There will be further opportunity for public comment and participation on this matter in future permits.

#### Conclusion

Harford County's permit represents a major step forward in meeting the water quality objectives of the Clean Water Act. Requirements in the permit include restoring 20 percent of the County's

impervious area (i.e., the ISR requirement), and developing restoration plans to meet stormwater WLAs to address Chesapeake Bay and local water quality impacts.

In July 2018, Maryland adopted a program that allows MS4 permittees to use nutrient credit trading. Because this option was not available at the time of issuance, the existing permit must be modified to allow nutrient credit trading as an option for meeting ISR goals within the framework of the permit. Therefore, the Department has reached a final determination to modify Harford County's MS4 permit to use Maryland's newly authorized nutrient trading program as an option to meet its 20 percent ISR requirement.

Comment(s) or Question(s)	Relevant Response
"Harford County's failure to plan and budget for compliance with the current MS4	§2, pp. 3-4
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	§1, pp. 2-3
available, then the permittee should also update restoration plans to identify and include	
supplemental stormwater practices that can be implemented in a shorter timeframe, such	
as tree planting or more extensive, additional green infrastructure installation, which	
would allow the permittee to come into compliance by the end of the permit term."	
"[T]he Guidance Manual has different urban runoff loading rates depending on whether	§3, pp. 4
	e2 4 <i>E</i>
	§3, pp. 4-5
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	"Harford County's failure to plan and budget for compliance with the current MS4 permit's restoration requirement raises serious concerns about the County's ability to replace any nutrient trading credits with stormwater practices in the next permit term, as anticipated by the permit modification proposalIn addition to simply allowing water quality trading, CBF recommends that the Department take more proactive steps in identifying progress delays and implementing schedules of compliance with alternative practices. CBF also recommends that the Department take additional enforcement action to ensure compliance with the state's financial assurance requirements for MS4s".  "Although the County has stated that they intend to obtain credits from the County's wastewater treatment plants, no credits from such Harford County sources have appeared on the available credits listCBF recommends that the permit modification process should include an analysis of reasonable assurance that incorporating trading in these permits can, in fact, help permittees meet compliance deadlines. This could include identification of anticipated, available credit purchases. If sufficient credits are not available, then the permittee should also update restoration plans to identify and include supplemental stormwater practices that can be implemented in a shorter timeframe, such as tree planting or more extensive, additional green infrastructure installation, which would allow the permittee to come into compliance by the end of the permit term."

Comments Submitted by:	Comment(s) or Question(s)	Relevant Response
Chesapeake Bay Foundation (cont.)	impervious areas, the appropriate loading rate would be from an urban impervious acre to forest. Under Model version 5.3.0, which was in effect when the current permits were issued, the delta between urban impervious and forest is 7.68 pounds per acre per year for nitrogen, 1.91 pounds per acre per year for phosphorus, and 0.43 tons per acre per year for sediment. These values should be listed directly in the permit modification with a clear directive that permittees must purchase these amounts for each acre of impervious surface restoration that is being replaced with credit purchases."	
	"CBF recommends the inclusion of language in the permit modification itself that formalizes the expectation that credits must be maintained until converted into stormwater practices, and that the conversion must happen in the next permit term. The Department recently issued the Phase II MS4 General Permit that contained 'looking forward' language which required permittees to 'develop an implementation schedule to show the twenty percent impervious area restoration requirement will be achieved by 2025.' While not binding on the permittee to complete any specific amount of restoration by the end of the Phase II MS4 General Permit term, it does at least provide permit language that sets an expectation on restoration and requires appropriate planning. A similar approach could be used here, where in addition to purchasing the credits, the permittee is required to develop a plan to convert those credits to stormwater or alternative practices within the next five years. The permit modification language should also make it clear that those purchased credits will be required to be maintained annually until the conversion is done."	§2, pp. 3
	"CBF is concerned that applying the water quality trading regulations to MS4 permits without further specifying how the credits must be purchased in regard to <i>impaired local waters</i> will worsen water quality hotspotsCBF recommends including specific geographic locations that align with local water quality impairments in which credits must be generated in order to be purchased for MS4 compliance."	§1, pp. 2
	"Allowing unlimited credit purchasing instead of local restoration will endanger local water quality and delay progress towards attainment of local TMDLs. Furthermore, setting the expectation that all unmet permit obligations may be met through trading will exacerbate the delay and disruptions in program implementation. Therefore, CBF recommends setting a clear limit on the ability to purchase credits in lieu of restoration obligations, and also setting clear expectations that the ability to trade will also be limited in the near future."	§2, pp. 3

Comments Submitted by:	Comment(s) or Question(s)	Relevant Response
Maryland League of Conservation Voters (oral & written comments)	"MDE must not modify permits just to avoid enforcement in noncompliant counties. Because it's about to expire, we think it's inappropriate, but even more so, according to the recent Financial Assurance Plan, Harford County is attempting to use trading to account for 12 percent of their impervious surface requirement and half their obligation."	§2, pp. 3-4
	"[I]t's more egregious than other areas because, in a lot of other counties, they're just trading for timeI have seen no evidence of that in this County in which they are planning to do real on-the-ground projectsor indicated in their Financial Assurance Plan or elsewhereAnd so, we're very concerned thatallowing this to happen is going to weaken the permit in and of itself. Basically, rewarding noncompliance by doing an accounting mechanism to look like you're getting the rest of the way there and, at the same time, can really be very damaging to the validity and the robustness of the trading system itself as a market."	§2, pp. 3-4
	"The most important component of this permit is ensuring additionality. Nutrient trading should only be used to fund new projects that would not have taken place otherwise. Preferably, the modification would lead the county to spend real money that would finance permanent practices, such as paying farmers to plant and maintain riparian forest buffers upstream of pollution sources. We see no plan to do that in Harford county. We only see an accounting exercise to award noncompliance." <sup>2</sup>	§1, pp. 2
	"The free trade of WWTP credits is a problem for the nutrient trading system as a whole. If MDE does not prohibit it, waste water treatment plants operating under 3 ppm baseline could generate thousands of nitrogen credits that they could sell very cheaply, with nothing preventing them being given for free. This could flood and crash the market, jeopardizing the purpose of the trading system to create a demand for new, innovative, cost effective projects. Trading should create new pollution reduction that is not already being accomplished by another program." <sup>2</sup>	§1, pp. 2
	"Harford County has several impaired waterways and still has a long way to go to meet local TMDLs. MDE assured the Water Quality Advisory Committee that the nutrient trading regulations are intended to restrict trading to upstream of impaired segments. However, the MS4 permit modification fails to address this issue because it covers the entire county with multiple watersheds. As I have voiced in previous comments to MDE, we remain very concerned about hotspots of pollution and trading causing potential environmental justice issues where underserved communities suffer the brunt of the environmental pollution" <sup>2</sup>	§1, pp. 2

Comments Submitted by:	Comment(s) or Question(s)	Relevant Response
Maryland League of Conservation Voters (cont.)	"The County must provide more information about how the credits are actually <b>calculated</b> and post the uses clearly online. It also must show clearly how these trades will navigate the Maryland Nutrient Trading Tool online which MDE has pointed to as a main driver of transparency and compliance in the trading system."	§3, pp. 4
	"We want to know where each credit will come fromIf nitrogen credits are coming from WWTP, where are sediment and phosphorus credits going to come from?The transparency of credit trading is of paramount importance."	§1, pp. 2-3
	"MDE must not modify permits just to avoid enforcement on noncompliant counties. Because this permit is about to expire, it is inappropriate for MDE to modify the permit to include nutrient trading. According to the most recent FAP, Harford county is attempting to use trading for zero dollars to complete 12% of the impervious service [sic] requirement and half of their obligation. Harford County's use of trading is more egregious than many other counties who we see as using it to trade in time and then planning to fill the gap with real projects. I have seen no indication or plan from Harford County to do this 'trading in time' nor any plans for real projects that will actually improve water quality in the future to replace these trades. The flagrant disregard for the spirit and intent of the trading program as well as their commitment to the county's permit is egregious and must be stoppedThis amendment damages the validity of a trading market and of the MS4 permit itself."	§2, pp. 3
	"It is inappropriate to trade with another waste water treatment plant for credits that were upgraded with state funding (such as for BRF funding). Doing so finances no new projects and represents zero new investment by counties." <sup>2</sup>	§1, pp. 2
	"Using 'trading' in this way rewards bad behavior and sets a dangerous signal that there will be no consequence for severely underfunding stormwater programs, ignoring permit requirements, or not taking pollution reduction permits seriously as other counties like Carrol [sic] County have." <sup>2</sup>	§2, pp. 3-4
	<sup>1</sup> Comments provided at public hearing, 8/22/2019 <sup>2</sup> Written comments received, 10/3/2019	
Audubon Naturalist Society  (oral & written comments)	"I would like to make a request to the Department of the Environment that it prepare an information sheet of some sort that lets us know the status of the permittees who, in 2018, requested modifications to the permits and those permit modifications were granted. And we would like to know the status of each of those in terms ofwhere they are in securing trading or not. As to the four that we've been hearing this summer, we	§2, pp. 4

Comments Submitted by:	Comment(s) or Question(s)	Relevant Response
Audubon Naturalist Society (cont.)	would like also the same kind of list of your design and composure composition that has that same information." <sup>1</sup>	
	"[I]t must be of great concern about how any permittee can achieve the ultimate goal of nutrient and sediment pollution reduction for Chesapeake Bay and local waters if the current permit impervious surface restoration goals are being missed."	§2, pp. 3-4
	"As set forth in its latest Annual Report, Harford County has an ISR 20 percent goal of 2,218 acres[T]he County anticipates completing 897.8 acresUnless Harford County is prepared this evening to state what the means to proceed with the required nutrient trading are, we are left to guess between now and December 30 <sup>th</sup> , 2019, the expiration date of the current Permit, as to whether the full 1,320.2 acres will be met. If Harford County cannot complete the required 20 percent ISR, very real consequences loom. These consequences include that the County will not meet its pollutant reductions and then it will fall further behind in its obligation to participate in the 2025 goal of meeting the Chesapeake Bay TMDL"	§2, pp. 3-4
	"The history of these [TMDL restoration] plans, which would give a good indication of how pollutant loads were being reduced, is that the first two are incomplete and that MDE has given a date of January 31, 2019, as a deadline for updates to the plans and addressing issues related to spreadsheet development and use. What we don't know is whether that deadline was met. For the second two plans, MDE prepared comments on them on May 31 <sup>st</sup> , 2018, and the County has sent its responses back. We do not know if those plans were approved or what their more precise status is[W]e are left with unaddressed issues for a permit ending in a little over four months."	§4, pp. 5
	"In terms of TMDL pollutant load removal, information provided in the Harford County 2018 annual report is most unhelpful. At appendix E-4, the County displays a table for ISR projects and the supposed pollution removals. However, there is no information for baseline loads and so it is impossible to determine what reductions actually occurred. The failure of Harford County to provide basic information about baseline loads and percentage reductions gives rise to the question of whether the reductions for 2025 will be met even if the total ISR acres are achieved. If MDE decides that the County can invoke nutrient trading to meet the ISR acres for the current permit, and the County moves ahead with that option, it will be even further behind for the 2025 finish line."	§4, pp. 5
	"The larger issue raised by the Harford County permit implementation experience and raised as well by all the Maryland Phase I permittees is whether the ISR metric is still	§4, pp. 5-6

Comments Submitted by:	Comment(s) or Question(s)	Relevant Response
Audubon Naturalist Society (cont.)	useful for achieving TMDL nutrient reduction goals. In this respect, we urge MDE to review carefully this issue as it begins preparation of the new permit for the next five years. We have joined in presenting to MDE ideas for a metric relating to actual pollutant reductions being achieved: an outcome-based goal measuring overall nutrient and sediment reduction which could also contain some level of ISR and paired with a substantial (i.e. 40%) green infrastructure implementation requirement." <sup>2</sup> 1 Comments provided at public hearing, 8/22/2019	
	<sup>2</sup> Written comments received, 10/2/2019	
Harford County Department of Public Works  (oral comments)	"Harford County has requested a permit modification in order to allow the County to use Maryland's newly authorized nutrient trading program. Nutrient trading is an option the County could use to meet its 20 percent impervious surface restoration requirement within the permit. We appreciate MDE's support of nutrient trading and the efforts necessary to develop and receive approval for this program. Harford County wants to be successful in its stormwater management program, with a goal of full compliance with our permit."	Noted
	"In March 2019, the County Council adopted a resolution to allocation [sic] a portion of the recordation tax into a dedicated fund for watershed protection and restoration projects. This equates to approximately \$2 million per year, a portion used towards debt services, approximately \$6 million annually that allows approximately \$6 million annually in bonds. This dedicated fund has allowed the County to significantly increase the number of restoration projects completed, increase project size, to lower project cost through economies of scale, and to begin developing long-term plans and priorities."	Noted
	"While Harford County has taken steps to accelerate the pace of restoration, there are factors outside of our control that influence scheduling, most notably the lack of experienced contractors to accommodate the pace of restoration within Central Maryland."	Noted