

Comment Response Document for Maryland’s 2019 Triennial Review of Water Quality Standards

The Maryland Department of the Environment (MDE) has completed its review of comments received during the Triennial Review (TR) process. The TR includes:

- Notice of Triennial Review published in the August 16th 2019 edition of the Maryland Register
 - Public comment period (August 16, 2019 – March 25, 2022)
- Notice of Proposed Action published in the March 11, 2022 edition of the Maryland Register
 - Public comment period: March 11, 2022 – April 11, 2022
 - Public Hearing – held virtually on March 30th, 2022

Below is a list of commenters, their affiliation, the date comments were submitted, and the numbered reference to the comments submitted. In the pages that follow, comments are summarized and listed with MDE’s response.

List of Commenters

Author	Affiliation	Date	Comment Number
Doug R. Myers And Josh Kurtz	Chesapeake Bay Foundation - Mr. Myers submitted Scoping Comments on November 27, 2019, during the Notice of Triennial Review and Mr. Kurtz submitted comments on April 11, 2022 during the public comment period for the notice of proposed rulemaking. These sets of comments were addressed together in this document, blending where similar but responding to all unique comments.	November 27, 2019 and April 11, 2022	1-21
Christopher Heyn, P.E.	Carroll County Department of Land and Resource Management	March 30, 2022	22 – 26
Brent Walls	Upper Potomac Riverkeeper	April 4, 2022	27
Gregory Voigt	United States Environmental Protection Agency	April 7, 2022	28 - 48
Emily Mendenhall	No affiliation provided	April 8, 2022	49

Author	Affiliation	Date	Comment Number
JP Andrick	Maryland Coldwater Fisheries Advisory Committee	April 10, 2022	50 - 53
Art Senkel	Patapsco Valley and Mid-Atlantic Council Trout Unlimited	April 10, 2022	54 - 64
Christopher J. Phipps, P.E.	Maryland Association of Municipal Wastewater Agencies, Inc.	April 11, 2022	65 - 68
Trey Sherard	Anacostia Riverkeeper	April 11, 2022	69 - 73
Betsy Nicholas, Brent Walls, Trey Sherard, Phillip Musegaas	Waterkeepers Chesapeake	April 11, 2022	74 - 88
Laura Seidman	American Forest & Paper Association	April 11, 2022	89 - 92

Comments and Response

1. MDE must acknowledge the tardiness of this triennial review and any diminishment of water quality that may have resulted from the delay.

MDE Response: MDE acknowledges the fact that this triennial review took considerably longer to bring to public review. However, the Department feels that it was time well-spent so as to propose as many important revisions to water quality standards as it has and with the detailed background documentation to support them. It is not clear what water quality has been diminished as a result.

2. The commenter appreciates removal of restoration variances for deep channel refuge in Eastern Bay and Chester River mesohaline segments as these waters support ongoing commercial and recreational tidal fisheries. However, it is unclear what criteria were used to determine an increase in the restoration variance for deep channel refuge in CB-04 mesohaline which has similar uses. The commenter understands that CB-04 mesohaline is the most recalcitrant segment in its response to nutrient reductions from the upper bay watershed and that much of the loading to that segment can be attributed to Pennsylvania and New York. However, increasing the restoration variance only serves to reduce emphasis on restoration rather than underscore the need to accelerate efforts to reduce nutrients from adjacent segments, especially some of the most urbanized watersheds along Chesapeake Bay's western shore within Maryland. Holding the existing schedule for the restoration variance in CB-04 mesohaline sends the message to EPA that Maryland grows impatient with progress in the

Susquehanna watershed delaying the restoration of water quality standards in one of the most highly used segments of the Bay.

MDE Response: MDE would like to clarify that it is proposing the removal of the restoration variances for the deep channel subcategory designated use for the lower Chester River Mesohaline segment and for the deep water subcategory designated use for the Patapsco River Mesohaline segment. The Department is also proposing to lower, but not entirely remove, the restoration variance for the deep water subcategory designated use for the Chesapeake Mainstem Segment 4 Mesohaline. MDE is not proposing any changes to the restoration variance for the deep water subcategory designated use for the Eastern Bay Mesohaline segment. The commenter notes the increase in the restoration variance for the deep channel subcategory designated use for the Chesapeake Mainstem Segment 4 Mesohaline segment which was determined based on improvements in modeling, land cover datasets, water monitoring datasets, and a better understanding of nutrient and sediment dynamics. A more detailed explanation can be found in the Triennial Review supporting documentation named “Adjustment to the Main Bay Segment CB4MH Deep-Channel and Deep-Water Dissolved Oxygen Criterion for Persistent Nonattainment and Removal of Chester River Deep-Channel and Patapsco River Deep-Water Restoration Variances”. The commenter asserts that the Department should maintain the current restoration variance of 2% for the deep channel portion of Chesapeake Mainstem Segment 4 Mesohaline (CB4MH) segment so as to send a message to EPA that Maryland is impatient with the nutrient reduction progress occurring in the Susquehanna watershed. While the Department would like to see greater progress in the Susquehanna River watershed, the Department instead relies on the latest scientific information in setting and revising Maryland’s restoration variances and the best available science supports the change of the restoration variance to 6% in the deep channel portion of CB4MH.

3. The commenter questions the rationale for water clarity standards relative to submerged aquatic vegetation finding that certain Chesapeake Bay segments contain areas designated as shallow water use that are not suitable for growth of submerged aquatic vegetation due to natural conditions and permanent physical alterations. The commenter understands that certain areas contain hydrologic conditions that perpetuate the suspension of fine sediment particles or contain tannins from decaying vegetation that could create these kinds of exclusions zones for submerged aquatic vegetation. The commenter would prefer that sufficient and up to date justification for why these water bodies have been designated SAV No Grow Zones is incorporated into the body of the triennial review document rather than reference to a 2004 document. Considerable improvement of water clarity and expansion of SAV beds has occurred since 2004. Are the same areas incapable of supporting SAV in 2019 or indeed in 2021? What specific alterations or natural sedimentation processes exist in these

areas that precludes SAV establishment? All these water bodies are also located in areas of intense agricultural development suggesting that runoff from agricultural operations could also be contributing to this use non-attainment. Simply dismissing that reality as an SAV = “no grow zone” signifies that degradation has been allowed and changing the designation is aimed at preventing a violation of the anti-degradation policy. MDE should clarify and update this review.

MDE Response: The SAV No Grow Zones referenced by the commenter were established as part of a Use Attainability Analysis (UAA) for the Chesapeake Bay and its tidal tributaries for the shallow water submerged aquatic vegetation subcategory designated use. The waters identified as SAV No Grow Zones in Maryland’s water quality standards were designated as such based on the absence of any recorded SAV over the historical data record from the 1930’s to the early 2000s and the presence of one or more factors that prevent the establishment of SAV beds. The four factors cited include:

- Extreme physical wave energy, which prevents the plants from rooting in the bottom sediments (e.g., Calvert Cliffs on Maryland’s lower western shore and Willoughby Split to Cape Henry near the Chesapeake Bay mouth in Virginia);
- Permanent physical alterations to nearshore habitats, including dredging close to shore accompanied by hardening of the shoreline and installation of permanent structures (i.e., shipping terminals) as observed in the inner Baltimore Harbor and the Elizabeth River;
- Natural, extreme discoloration of the water from tidal-fresh wetlands (e.g., tidal-fresh ‘blackwater’ rivers on the Eastern Shore); or
- No functional shallow-water habitat due to natural river channeling (e.g., tidal headwaters of several lower Eastern Shore rivers) (Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability, October 2003, EPA 903-R-03-004).

Based on the extensive data reviewed by the Chesapeake Bay Program Partnership and the expert opinions of researchers from the Virginia Institute of Marine Science (VIMS) and University of Maryland Center for Environmental Science (among others), the Partnership identified waters where underwater bay grasses are never (underlined for emphasis) expected to grow as SAV No Grow Zones (Technical Support Document for Identification of Chesapeake Bay Designated Uses and Attainability, October 2003, EPA 903-R-03-004). While there has been considerable improvement of Baywide SAV coverage as noted by the commenter, none of the SAV No Grow Zone segments identified in Maryland’s water quality criteria at COMAR 26.08.02.03-3 (i.e., CHOTF, NANTF, POCTF, POCOH) have shown any SAV acreage in the annual surveys conducted by VIMS (per survey data up through the 2021 sampling year). The identification and designation of a water segment as a No Grow Zone was never intended to allow for continued degradation due to intense agricultural development or any other anthropogenic activities but did acknowledge locations where environmental conditions or permanent physical alterations preclude SAV growth.

Regardless, the UAA documentation agreed to by the Bay Program Partnership allows for reassessment should newer information demonstrate the suitability of these areas for SAV growth. However, to date, available data do not support a change in the designation of these Bay segments.

4. The proposed anti-degradation policy is inadequate to protect the State's high-quality waters. Any degradation in a Tier II watershed that is not accompanied by an alternatives analysis and a social and economic justification violates federal Antidegradation Policy's Tier II protections. 40 C.F.R. §131.12(a). Furthermore, there is no quantified relationship between many pollutants and their effect on IBI. Consequently, even if the requisite alternatives analysis and a social and economic justification have been completed and granted, Maryland Department of Environment does not know how the allowance of various pollutants in Tier II watersheds affect IBI and therefore tier designation.

MDE Response: When it comes to designating Tier II high quality waters, the Department has thus far used a water body by water body approach preferring to use the Department of Natural Resources' Maryland Biological Stream Survey Indices of Biotic Integrity (IBI). The IBIs for fish and benthic macroinvertebrate communities provide important insights on the health of the stream by using community level indicators. Since the biota living in these streams are affected by water quality in the stream on a continual basis, changes in their communities (and thus IBI) reflect ongoing water quality impacts, making them effective yardsticks for the health of these streams. Although the Department does not yet have a predictive model to determine the impacts to an IBI from a particular permitting action it does conduct ongoing sampling of Tier II streams throughout the State to determine whether assimilative capacity (AC) has changed and whether the Tier II stream has degraded, i.e., has no remaining AC. For more information on how AC is calculated please visit:

[https://mde.maryland.gov/programs/Water/TMDL/WaterQualityStandards/Pages/Tier-II-AC.aspx#:~:text=Assimilative%20capacity%20is%20defined%20in,Maryland%20Regulations%20\(COMAR\)%2026.08](https://mde.maryland.gov/programs/Water/TMDL/WaterQualityStandards/Pages/Tier-II-AC.aspx#:~:text=Assimilative%20capacity%20is%20defined%20in,Maryland%20Regulations%20(COMAR)%2026.08). MDE would also like to make a clarification for the commenter.

Once designated, MDE's policy is that Tier II streams remain Tier II, even if degradation has occurred, therefore maintaining the requirement for a Tier II review (including that for alternatives analysis and social and economic justification) for NPDES permits and water and sewerage plans in these watersheds. The only exception to this has been when the Department has found a data or assessment error in the original Tier II designation efforts.

5. **Condensed Comment:** Impervious surface is not a consideration in Tier II standards, despite the link between impervious surfaces and the index of biological integrity (IBI) used in regulations governing antidegradation. To address the gap between antidegradation policy

and pollution management, the commenter finds that impervious surface cover should be included in projecting and accounting for potential degradation in a high-quality watershed in addition to IBI. The commenter recommends that MDE use proposed changes in impervious surface cover to calculate the changes in IBI when there is a change in land use. The State closely monitors point source discharges and quantifies their associated parameters but does not quantify the impacts of nonpoint-source discharges. Nonpoint source pollution, however, is specifically referenced in federal Antidegradation policy. When MDE receives an application for a change in land use in a Tier II watershed (e.g., the construction of a residential subdivision), the Department should input the applicant's proposed change in impervious surface cover into the relationship between impervious surface cover and IBI use and records the project's impact on IBI scores. Future applications can be compared to this new quantification, effectively accounting for degradation in a Tier II watershed through the amount of impervious cover. This newly recommended approach of using changes in impervious surface to calculate changes in IBI allows for consideration of the individual site as well as the overall watershed.

MDE Response: Though not explicitly mentioned in the current regulations or the regulations as proposed, the Department does consider the addition of impervious surfaces when reviewing NPDES permit applications for impacts to Tier II waters. In fact, when permit applications for NPDES permits propose new impervious surface cover that is not treated with environmental site design stormwater treatment, this acreage of impervious surface cover is added to the impact minimization/mitigation needs for the project. The Department appreciates the commenter's idea of using a relationship between impervious surface cover and IBI values and will consider this further in the future. However, it should be noted that impervious surface addition is not the only important factor that can cause degradation of water quality and a reduction in IBI scores.

6. Maryland's antidegradation policy lacks a cumulative cap for *de minimis*, or insignificant, discharges. This is inconsistent with federal Antidegradation Policy. At what point do a cumulative series of insignificant discharges become significant? How does MDE know and track when enough *de minimis* discharges constitute a significant amount of pollutants? In 2013, the EPA commented on Oregon's antidegradation policy, stating that it was in violation of Federal Antidegradation Policy because of its absence of a cumulative cap. The EPA wrote, "Overlooking real but un-measurable and statistically insignificant degradation could result in allowing a significant cumulative lowering of water quality without Tier 2 review, which would be inconsistent with 40 CFR 131.12(a)(2)."

The Department needs to establish a cumulative cap for *de minimis* discharges to prevent degradation in Tier II watersheds. Other states and their cumulative caps can be used for

reference; however, many states, such as Washington, use a parameter-by-parameter approach for determining water quality and have clearly defined caps for each parameter, as well as clear delineations for what constitutes a *de minimis* discharge. In the interim, while Maryland continues to assess water quality through benthic macroinvertebrate and fish community scores, MDE should establish a cumulative cap on *de minimis* discharges until the shift to a parameter-by-parameter approach is made.

MDE Response: Both Maryland’s current (COMAR 26.08.02.04-1.F.3) and proposed Tier II regulations (26.08.02.04-2.F.3) provide a definition of a *de minimis* condition for which Tier II reviews are not needed. The proposed regulations refer to this as an “exemption” to needing a Tier II review with the proposed language stating: “*Exemptions. The requirement to perform a Tier II antidegradation review does not apply to individual discharges of treated sanitary wastewater of less than 5,000 gallons per day, if all of the existing and current uses continue to be met.*” MDE believes that the commenter’s idea of establishing a “cumulative cap for *de minimis*” impacts refers to a wider array of impacts than what is meant by the currently proposed regulation. The Department will take this idea under advisement as it strives to continually improve Tier II antidegradation implementation moving forward.

7. Maryland’s antidegradation policy states, “If there is a cost-effective alternative to direct discharge or water quality impacts, the applicant shall implement the alternative and it shall be a condition of the permit or authorization.” However, “cost-effective and reasonable” are subjective, potentially varying from project to project and perspective to perspective. Other states define “cost-effective” or “economically feasible.” For instance, West Virginia defines a “cost-effective alternative” as, “...costs that are less than 110% of the costs of the pollution control measures associated with the proposed activity.” Maryland should establish its own precise definition of what represents a “cost-effective and reasonable” alternative.

MDE Response: While it would seem advantageous to develop a one-size-fits-all definition for these terms, what is cost effective and reasonable for one permitted project may be very different than what is cost effective and reasonable for another project. Different project types, project configurations, land use constraints, etc., can affect these factors and it is necessary for the Department to exercise some discretion in determining what meets the intent of the regulation. In every case, the Department strives to make the Tier II review process as equitable as possible given the unique circumstances associated with each project.

8. **Paraphrased Comment:** Maryland’s Antidegradation Policy also refers to major modifications without definition. Maryland should elaborate on what the State deems as a “major modification” or an “expansion.” The terms “major modification” and “expansion” are subjective terms, open to various interpretations. Some states offer a trigger or threshold for

what they consider an expansion or a major modification. For instance, Washington uses 10% production increase as a trigger for defining an expanded facility. To avoid confusion and ensure compliance, MDE should precisely define “expansion” and “major modification.”

MDE Response: MDE considers a major modification or expansion to mean a “new or an increased, permitted annual discharge of pollutants” or a new or increased “potential impact to water quality” as is described in the proposed COMAR 26.08.02.04-2.E.

9. The proposed antidegradation policy broadens to consider the Tier II watershed, not just the waterbody and requires a review for both discharges and other regulated activities that may cause water quality impacts. The commenter construes this language to include deforestation and addition of impervious surfaces within that watershed. However, in the Department’s Review of a Social and Economic Justification to lower water quality standards triggered by that review, there have been no changes to the Department’s Responsibilities.

Instead of language encouraging the Department to balance the needs of water quality with development, the regulation leaves little room for review of any economic development or growth, even when that may be precisely what is needed to protect water quality standards. What good is a more comprehensive review if the Department can still make a determination that allowing continued growth and economic development are more important than protecting water quality standards? This situation telegraphs to us that an anti-degradation review can both consider additional factors known to affect water quality and dismiss them just as easily. It also fails to acknowledge federal regulation, that allows the State to proceed with development that will lower water quality standards, only when the State finds the economic or social development to be “important.”

MDE Response: Regarding the commenters statement that the Department is proposing to broaden antidegradation policy or have a “more comprehensive review”, MDE would like to clarify and state that it has always (since Tier II implementation began) considered discharges or water quality impacts within the Tier II watershed when implementing Tier II antidegradation policy. Therefore, this proposed language is not a “broadening” of Tier II antidegradation policy but merely making the regulations clearer for the reader. As a result, no changes were proposed to the Department’s responsibilities in 26.08.08.02.04-2.L. The Department continues to follow all federal statutes and regulations in implementing Maryland’s Tier II antidegradation policy.

10. **Condensed Comment:** The Construction General Permit (“General Permit”), in its current state, is not sufficient to guarantee the protection of Tier II waters in Maryland. While the General Permit incorporates best management practices (BMPs), these practices represent the bare minimum for a project applicant and bear little relationship to the actual amount of pollution created by a project. The only enhanced best management practice required in the

“Enhanced Best Management Practices for Tier II Waters” document is the 100-foot stream buffer. These BMPs are inadequate because, in most cases, they do not relate to or offset the pollution created during construction and from the land cover change that occurs post-construction.

Like federal Antidegradation Policy, the General Permit infracts State policy through a lack of an alternatives analysis and a social and economic justification, instead using scant BMPs in an attempt to account for “alternatives.” However, BMPs do not compensate for alternate site locations or lesser-degrading uses, densities, or layouts on a site. Thus, any construction project proposed in a Tier II watershed, with or without assimilative capacity, should be accompanied by an analysis of alternatives and, if no cost-effective alternative exists, a social and economic justification. Yet, Maryland reviewed its very first SEJ in 2017 for the Shugart Solar project. Meanwhile, the Department continues to extend coverage under the Construction General permit to projects without requiring either of these steps.

MDE Response: Regarding the comments speaking directly to the General Permit for Stormwater associated with Construction Activity (GP), the Department encourages the commenter to reach out to Paul Hlavinka, chief of the Industrial Stormwater Permits Division at paul.hlavinka@maryland.gov.

For the comments that relate specifically to the Tier II review, i.e., the evaluation of alternatives and the review of social and economic justification documentation, the Department has been reviewing such documentation since before 2017. When an application for coverage under the GP is received for a project located in a Tier II watershed, the applicant is required to provide their alternatives analysis documentation. Best management practices (BMPs) only serve as an alternative if the BMP allows the project to avoid discharging to the Tier II watershed completely. Otherwise, a BMP may only serve as a method for minimizing the project’s impact on the Tier II water.

11. The commenter proposes that an impervious cover threshold is established for each tier of water quality and is used as a screening tool for eligibility under the General Permit. The Department should use the Water Resources Element nonpoint-source analysis in local comprehensive plans to determine whether anti-degradation analysis and mitigation is necessary. Within the WRE, each county’s proposed land use map has been run through a water quality model (WRE) to determine the future changes in land cover and impervious surface at plan build-out. These changes can be overlain with Tier II watershed boundaries to determine which watersheds will ultimately cross a known impervious cover threshold for degradation. MDE should apply enhanced anti-degradation procedures and offsets to projects that, based on the WRE, will contribute to a future degraded condition. Projects located in watersheds forecast to remain below harmful thresholds could proceed under existing procedures, because substantial degradation is unlikely. Impervious surface cover should be considered in the General Permit through degrees of permissible impervious surface cover that

relate to higher quality watersheds, with Tier I, Tier II, and Tier III thresholds of 10%, 5%, and 2%, respectively. If an applicant with a new or expanding stormwater discharge proposes an amount of impervious surface cover that, when combined with other planned projects, will surpass the watershed's threshold, then the applicant should be required to undergo an individual permit to determine ways to mitigate impervious surface cover—possibly by a reduction in scale, increased BMPs, or another measure.

MDE Response: MDE appreciates the commenter sharing their ideas for improving antidegradation implementation in Maryland but questions the practicality of solely using impervious surface cover as a determinant for applying different antidegradation implementation procedures. Projects applying for coverage under the General Permit can have many other factors, such as deforestation and stream buffer impacts, that could lead to potential degradation. There can also be variability in the impact that impervious surfaces have (e.g., whether stormwater is treated with environmental site design practices or not). Maryland's Tier II antidegradation implementation uses a more holistic approach considering a range of potential water quality impacts from a project. MDE will take this comment under advisement in whether some aspect of the WRE may be useful for Tier II reviews.

12. **Condensed and Paraphrased Comment:** The commenter states that the regulatory requirement that a candidate Tier III water body or stream segment be wholly within a permanently protected area essentially prohibits the designation of Tier III waters in Maryland. The commenter made similar comments on the 2016 Triennial Review. MDE responded to these comments on the 2016 Triennial Review where the commenter made a plea to address the issues preventing Maryland from having any Tier III Outstanding National Resource Waters designations. The commenters were promised that MDE would “work with the commenters” to address this situation. In preparation, the commenter reviewed the Tier III designation criteria used by a number of other states and EPA guidance, but no such meeting to develop nominating criteria surfaced.

MDE Response: The Department agrees with the commenter that it would be worthwhile to re-examine the Tier III regulations and policy but has not been able to devote any significant resources to the subject since its recent water quality standards efforts were focused more fully on adoption of the updated ammonia criteria and developing improved existing use regulations and procedures to protect cold water resources. The Department will continue to keep these comments in mind as it considers Maryland's future water quality standards development priorities.

13. Lacking a workable Tier III designation or establishment procedure in Maryland continues to convince the commenter that degradation is inevitable. Alternatively, other states with Tier III waters have started with IBI scores above a certain exceptional threshold such as 4.50 (a very limited subset of Maryland streams) and built conservation portfolios through their

various land acquisition and conservation easement programs to protect them from degradation.

MDE Response: The Department acknowledges the difficulty in finding eligible waters for Tier III designation but does not believe it to be impossible nor does it believe that degradation is inevitable. The idea of driving land conservation proactively towards waters with potential Tier III designations may be worth exploring and the Department will keep this idea in mind for future Tier III implementation efforts.

14. **Condensed and Paraphrased Comment:** The commenter previously submitted nominations for Tier III waters for five waters in Charles County. However, the fully protected requirement for Eligible Nominations for Tier III status (in the unchanged 26.08.02.04-3) generally prohibits the designation of Tier III waters in Maryland because none of the waters nominated thus far exist within fully protected areas. Section F allows for designation based on the presence of a federally threatened or endangered wholly aquatic species. However, to date, no Tier III designations have been made based on this provision. Lacking Tier III designation, there also seems to be no driver for a recovery plan that targets acquisition or protective easements to create fully protected areas that could eventually lead to a Tier III designation under Section C. The commenter thinks it is incumbent upon Department of Natural Resources to work with MDE to explore the Endangered Species procedures under section F and nominate all waters containing fully aquatic listed species immediately.

MDE Response: The Department shares the commenter’s desire to designate appropriate waters as Tier III Outstanding National Resource Waters (ONRW). MDE will take the commenter’s points on Tier III eligibility under advisement in future reviews of these regulations. While the Department is certainly open to working with Maryland Department of Natural Resources to consider Tier III nominations based on the presence of endangered species (as in the proposed COMAR 26.08.02.04-3.F.), as noted by the commenter, the regulation acknowledges that the primary protection for these species “is provided by the Maryland Nongame and Endangered Species Conservation Act, Natural Resources Article, Subtitle 2A, Annotated Code of Maryland, and the Federal Endangered Species Act.” The geographic extent of these nominations will have to be carefully considered as some endangered species, like Atlantic Sturgeon, have particularly large home ranges that could prove difficult to preserve en masse.

15. **Condensed and paraphrased Comment:** In regard to Tier III designation, the commenter applied some resources to learn from other states how they designate Tier III waters which we think would be instructive for the Department to review (provided). The commenter notes that in Maryland, even certain streams with Fish and Invertebrate Indices of Biotic Integrity scores of 5.00 are not designated as Tier III waters because the entire watershed protecting

that segment is not in permanent protection. None of the surveyed states had such a disconnect.

MDE Response: The Department appreciates the commenter’s efforts and willingness to share this information. The Department will use this information to augment what it has gathered previously and to clarify any gaps in our understanding. With regard to the comparison with other states, Maryland has had discussions with Virginia about their Tier III designations and noted that Virginia’s designations appear to be limited to those waters whose watersheds are wholly within protected lands such as Shenandoah National Park. The Department will consider these comments and the submitted information in the future when it re-evaluates Tier III antidegradation standards.

16. Pertaining to the National Criteria for nutrients, MDE’s explanation of data gaps and confounding factors is insufficient to demonstrate why MDE cannot adopt federal nutrient standards, especially since many local Total Maximum Daily Loads (TMDLs) for nutrients exist throughout the state independent from the Bay Total Maximum Daily Load. Many of those segments directly load nutrients into tidal segments that are part of the Bay TMDL and for which measuring nutrient concentrations and fluxes is difficult because of their tidal nature. Combined with restoration variances, it appears MDE, by failing to adopt the national criteria for nutrients, is creating a loophole to not meet water quality criteria for nutrients, especially in deep water tidal segments as required by the Bay TMDL.

MDE Response: The Department has conducted research in the past to develop nutrient criteria but has always found that nutrient dynamics prevented the Department from establishing any generally applicable nutrient criteria. Variables such as site-specific temperatures, salinity, flow regimes, timing and fate, and monitoring complexities made developing nutrient criteria extremely difficult. And since nutrients often exhibit their greatest impacts on aquatic life through indirect effects on dissolved oxygen (DO), algal and phytoplankton growth, the Department has used the surrogates of DO and chlorophyll *a* readings to model loads of nutrients that would support healthy levels of these surrogates.

Worth mentioning, MDE is currently (as of summer and fall of 2022) reviewing the nationally recommended “Water Quality Criteria to Address Nutrient Pollution in Lakes and Reservoirs” to determine the applicability and feasibility of adopting these for Maryland’s impoundments. This criteria review effort started after the public comment period closed for Maryland’s 2019 Triennial Review so this effort was not mentioned in the draft Triennial Review information nor will it be described in great detail in the final draft.

Regarding the commenter’s assertion that MDE is using restoration variances to create loopholes to avoid meeting water quality criteria for nutrients, the Department would like to point out that as part of this Triennial Review, MDE has proposed reductions or elimination of 3 out of the 5 existing restoration variances, with only one (CB4MH – Deep Channel) being increased and the other (EASMH – Deep Channel) staying the same. These actions,

supported by the latest science, actually serve to better ensure that the required nutrient reductions are made for these water segments and that water quality is improved.

17. The commenter realizes that local nutrient TMDLs lack a specific timeframe like the Bay TMDL. This situation only serves to exacerbate reaching the Bay TMDL dissolved oxygen targets. MDE should establish completion dates for local nutrient TMDLs based on relative loading of nutrients by segment-shed available from the Bay Model.

MDE Response: Since this comment is not relevant to Maryland's Triennial Review of Water Quality Standards, we invite the commenter to contact Guido Yactayo, MDE's Water Quality Modeling Division Chief, at guido.yactayo@maryland.gov.

18. **Condensed Comment:** The commenter appreciates the Cold-Water Existing Use Determinations assessment and redesignation of several stream segments to Class III based on presence of obligate cold-water species and improved temperature data or both.

MDE Response: Thank you for your comment and support.

19. The commenter appreciates the evaluation of PFAS and source identification efforts as an emerging issue of concern. While we understand data may not be sufficient to create criteria at this point, we urge a precautionary approach to limit industrial NPDES and Industrial Stormwater discharges which may contain PFAS through rigorous analysis of discharge constituents including fish tissue analysis, ecotoxicological evaluations and human health risk analyses.

MDE Response: Thank you for your comment. For more information about MDE's current efforts at managing risks from PFAS, please visit: <https://mde.maryland.gov/PublicHealth/Pages/PFAS-Landing-Page.aspx>.

20. As suggested in the commenter's previous comments on the draft Industrial Stormwater General Permit, numeric criteria for toxic substances in surface waters assumes discharges are isolated from each other. The commenter states that certain industrialized water bodies such as Baltimore Harbor have multiple industrial stormwater discharges in close proximity to each other which may create an additive or cumulative effect on biota and human health. For this reason, the commenter suggests the numeric criteria in COMAR 28.08.02.03-2 be evaluated as mixtures using whole effluent toxicity protocols from ambient samples in those settings and a risk analysis for bioaccumulation and exposure pathways to subsistence fishers, especially in adjacent underserved communities.

MDE Response: For the comments regarding the use of whole effluent toxicity protocols for measuring permit compliance, we recommend that the commenter contact Ron Wicks, Administrator in the Compliance Program, at ron.wicks@maryland.gov and Michael Richardson, Deputy Program Manager of the Wastewater Pollution Prevention and Reclamation Program, at michael.richardson@maryland.gov. For the comments addressing risk analyses related to fish consumption from pollutants that bioaccumulate, we recommend that the commenter reach out to Kathy Brohawn, Public Health Section Head, at kathy.brohawn@maryland.gov.

21. The commenter appreciates extending the open water fish and shellfish use category to year-round. This change does acknowledge that seasons are lengthening as the climate warms. However, the Triennial Review lacks sufficient consideration of changing climate conditions both on how nutrient loads must be adjusted to account for warmer water which holds less oxygen and the episodic nature of load delivery because of more frequent and extreme rainfall events. How these realities may affect the attainment of water quality standards, especially in light of new science on how removal of riparian trees within urban stream valleys practiced under MS4 stormwater permits contributes to this condition.

MDE Response: The Department would like to clarify that the changes proposed to COMAR 26.08.02.02-1.F. and G. where the language “*the open water fish and shellfish subcategory designated use applies*” was added does not represent a change in when the open water fish and shellfish subcategory applies. This regulatory language change merely corrects an invalid regulatory cross-reference and makes this part of the regulation consistent with Section E. which states: “*From October 1 through May 31, the boundaries of the open-water designated use include all tidally influenced waters from the shoreline measured from the shoreline to the adjacent or opposite shoreline and down to the bottom.*”. While climate change considerations were not incorporated into the water quality standards initially adopted, there is a growing body of science that will be used in the future to account for these changes. In fact, the Chesapeake Bay Program Criteria Assessment Protocols workgroup is already discussing the potential need for adjusting water quality standards as a result of climate change. The Department looks forward to addressing this challenge as new data becomes available and methodologies are adapted to account for the expected higher air and water temperatures and more extreme weather events associated with climate change.

22. West Branch North Branch Patapsco River (Carroll County): This segment is currently Designated Use IV-P. MDE states that the existing use is different than its designated use, and that existing use is identified as “supporting cold water obligates”. This is concerning as temperature exceeded the 20°C Use III criteria of 33% at 37.5% in 2019, 35% in 2014 and greater than 50% the remaining monitoring years, with a single cold water obligate found in 2011 by a volunteer stream wader’s group. The Use III attainability “existing use” designation is based on Brown Trout populations, not the native cold water Brook Trout and

temperature thresholds that exceed the standards. The commenter recommends retaining the current Designated Use of IV-P for the West Branch North Branch Patapsco River as represented by the current temperature data and lack of cold water obligates.

MDE Response: MDE would like to clarify several points made by the commenter. The designated Use Class III is defined in Code of Maryland Regulations (COMAR) 26.08.02.02.B.(5) as “...waters which have the potential for or are suitable for the growth and propagation of self-sustaining trout populations and other coldwater obligate species including, but not limited to the stoneflies *tallaperla* and *sweltsa*.” This definition does not differentiate between the native brook trout or introduced but naturalized trout species such as brown and rainbow trout. Therefore, the Department has always interpreted this definition of Class III to include any cold water obligate trout species. Supporting this interpretation is that brown and rainbow trout, like brook trout, require cold water habitats to support their survival, growth, and reproduction. Class IV waters are defined in COMAR 26.08.02.02.B.(7) as “...waters that have the potential for or are: (a) capable of holding or supporting adult trout for put-and-take fishing; and (b) Managed as a special fishery by periodic stocking and seasonal catching.”

As the commenter notes, the temperature data for this stream does not meet the Class III water temperature criterion and, as a result, the Department did not describe the existing use for this water body as synonymous with a Class III designation. Instead, the Department described the existing use of the West Branch North Branch Patapsco River using specific temperature statistics developed from monitoring data available for this stream. The existing use for the West Branch North Branch Patapsco River is described as “The main stem of the West Branch North Branch Patapsco River from its confluence with the North Branch Patapsco River (39.537265° N, -76.893326° W), to the confluence with the unnamed tributary near Tannery Road (39.574643° N, -76.955119° W), supports naturalized self-sustaining brown trout (*Salmo trutta*) and has an average daily mean temperature below 21.62°C, a daily maximum of less than 27.2°C, and stays below 24°C for at least 87% of the time and below 20°C at least 22% of the time.” As of May of 2020, when data were last reviewed for the mainstem of the West Branch North Branch Patapsco River, this stretch of river alone (not including connected side tributaries) had 6 observations of brown trout including young-of-year (indicating successful reproduction) and multiple year classes (indicating multiple years of successful reproduction). Also worth noting is that, even though the cold water obligate benthic macroinvertebrate *Tallaperla* observation was not used for this existing use determination since it was sampled by the Stream Waders volunteer monitoring organization, the *Tallaperla* specimen was identified by certified State taxonomists. Regardless, based on the brown trout data alone, this water body demonstrated a self-sustaining trout population which was not stocked in at least the past 34 years. This existing use determination follows the rules for identifying existing uses established in the document named “Cold Water Existing Use Determinations: Policy and Procedures” as developed by MDE’s Cold Water Advisory Committee and to which the commenter’s organization was a contributor. For these reasons, the existing use description for the West Branch North Branch Patapsco River is well

justified, as are the protections afforded to these waters under Maryland's Tier I Antidegradation Policy.

23. Unnamed Tributary to North Branch Patapsco River (Carroll County): This segment is currently Designated Use I-P. MDE states that the existing use is different than its designated use, and that existing use is identified as "supporting cold water obligates". The commenter acknowledges that the temperatures are colder than the protection afforded by the Use I-P designation, however, the existing use rationale for this location is again in support of "cold water obligates", which is concerning, as Brown Trout were found to be present, but not Brook Trout, or cold water obligate benthic taxa Tallaperla or Sweltsa. Temperature thresholds for the percent of time below 20C were only below this threshold one instance in 2003 in the headwater monitoring location, where the 20C threshold was exceeded 31% of the thermal monitoring season. The commenter recommends retaining the current Designated Use of I-P until this segment can be re-evaluated due to the MDE committee work related to cool and cold water.

MDE Response: Much of MDE's response to Comment 22 applies to this comment as well. Regarding the commenters statement on the existing use description of the Unnamed Tributary to North Branch Patapsco River (Carroll County); the existing use is again not described synonymously with a Class III use but instead using specific water temperature statistics summarizing available water temperature data. The existing use for this stream is "The unnamed tributary to the North Branch Patapsco River (near Hollingsworth Road), from its confluence with the North Branch Patapsco River to the confluence with an unnamed tributary located at [39.526615° N, -76.846722° W], supports naturalized self-sustaining brown trout (*Salmo trutta*) and water temperatures that have an average daily mean below 20.8°C, daily maximum below 25.6°C, maintains a temperature below 24°C at least 90% of the time and maintains a temperature below 20°C at least 33% of the time." As described in detail in the Draft Existing Use Determination and Rationale document for this stream, multiple year classes of brown trout, including young-of-year, were found in this segment with no recent stocking efforts having occurred. As such, this existing use determination follows the rules for identifying existing uses as established in the "Cold Water Existing Use Determinations: Policy and Procedures" and therefore, the existing use description for the unnamed tributary to the North Branch Patapsco River is well justified.

24. North Branch Patapsco River (Carroll County): This segment is currently Designated Use IV-P. MDE states the existing use is different than its designated use, and that existing use is identified as "supporting cold water obligates". However, stream temperatures within the North Branch Patapsco River far exceeded the 20C threshold for Use III at 70% and 73% of the time over the past two monitoring seasons (2019, 2017), and 63% in 2013. No cold water obligates were found and the existing use designation of supporting cold water obligates is based solely on the presence of multiple classes of Brown Trout. The commenter recommends retaining the current Designated Use of IV-P for the North Branch Patapsco

River as represented by the current temperature data until this segment can be re-evaluated due to the MDE committee work related to cool and cold water.

MDE Response: Much of the previous responses (to comments 22 and 23) apply to this comment as well. The existing use of the North Branch Patapsco River was described based on the temperatures achieved (and not identical to a Class III water body) and the cold water obligate species found. Numerous sampling events documented the presence of a self-sustaining brown trout population throughout this stretch of the North Branch Patapsco and MDE appropriately applied the rules for identifying existing uses that were established in the “Cold Water Existing Use Determinations: Policy and Procedures”.

25. Deep Run (Carroll County): This segment is currently Designated Use I-P. MDE states that the existing use is different than its designated use, and that existing use is identified as "supporting cold water obligates". However, of the 11 temperature sensors deployed throughout the Deep Run Watershed by Carroll County and MDDNR MBSS, only one temperature sensor was within the temperature threshold, which was a Carroll County sensor located in the upper most headwater location near Dos Garland Ct. as part of the Hampstead WWTP upgrade monitoring. The Use III temperature criterion was only met at this location during one of the three thermal monitoring seasons. Designation is primarily based on existence of Brown Trout at the very bottom of the catchment. No other Trout, Brown or Brook were found throughout the remainder of the 4,153 acre watershed. Carroll County recommends retaining the current Designated Use of I-P until this segment can be re-evaluated due to the MDE committee work related to cool and cold water.

MDE Response: Similar as to the previous comments/responses, the existing use determination for Deep Run was conducted according to the procedures developed by the Cold Water Advisory Committee and captured in the document “Cold Water Existing Use Determinations: Policy and Procedures”, proposed to be incorporated by reference.

26. Board Run (Carroll County): This segment is currently Designated Use I-P. MDE states that the existing use is different than its designated use, and that existing use is identified as "supporting cold water obligates". However, no cold water obligates were present and temperature data exceeded 20C 24.9% of the time in the upper headwater monitoring location and 46% at the mouth. The existing use designation justification by MDE is based on the spatial relationship of the confluence of Board Run to the North Branch Patapsco mainstem, not the physical or biological properties of the Use Class evaluation segment that was performed for Board Run. Carroll County recommends retaining the current Designated Use of I-P until this segment can be re-evaluated due to the MDE committee work related to cool and cold water.

MDE Response: Multiple year classes of brown trout, a cold water obligate species, were found within Board Run. Additionally, the lack of thermal or physical barriers with the

mainstem North Branch Patapsco River demonstrates an interconnected and self-sustaining brown trout population between Board Run and the North Branch Patapsco River. The existing use determination for Board Run describes the temperature regime in Board Run as it has been documented by recent data. Again, the Department followed appropriate procedures in making this existing use determination.

27. There has been a lot of talk about PFAS in MD and I have followed what MDE has done and plans to do for PFAS assessments, but I am curious why the hold up on establishing DW standards for PFOS+PFOA? Our comments will strongly urge the State to adopt drinking water standards for PFAS and that there are several states that have standards that can be used as an example for MD to set their own standards. I am not keen on the state adopting EPA guidance standards at 70 ppt, so if the hold up is wanting to do better than EPA...that is great. But when will we see something proposed?

MDE Response: MDE continues to evaluate the different thresholds proposed by EPA and other states to determine if they have sufficient scientific justification for adoption as a standard. In the past, the Department has used EPA's 2016 Health Advisory Level for the sum of PFOA and PFOS to develop a response framework for community water systems. The Department expects that EPA will be proposing drinking water regulations for PFOA and PFOS by the end of this year with a final regulation anticipated by the end of 2023. MDE is closely monitoring these developments to make sure that Maryland's drinking water systems have the proper safeguards in place to protect Marylander's health. In the interim, MDE is conducting additional monitoring at select drinking water systems and depending on the concentrations found, the Department may recommend that the system conduct additional monitoring, notify their customers, or consider ways to reduce PFAS in their drinking water.

28. COMAR 26.08.02.08 Stream Segment Designations - MDE is making a number of revisions to the Stream Segment Designations at 26.08.02.08. EPA supports MDE's further clarification of the additional protection for public water supply in the Susquehanna River. MDE must be cautious that in the process of making these revisions it does not inadvertently change the designated use of any streams, especially if the change of the designated use is to a use that is less protective. In accordance with federal regulation at 40 CFR § 131.10(j)(2) a state must conduct a use attainability analysis (UAA) whenever a state wishes to remove a designated use that requires criteria less stringent than previously applicable. MDE should provide supporting documentation that indicates that the revisions to these tables does not result in a revision to designated uses.

MDE Response: The changes to specific water body designated use classes that the Department proposed for COMAR 26.08.02.08 can be described in two groups. The first group of changes were proposed only to waters in the Susquehanna River watershed and

sought to clarify the extent of tidal influence and where the public water supply use applied. This consisted of correcting/clarifying the extent of the mainstem Susquehanna that should be designated in tidal (Class II) versus nontidal (Class I) waters. In this case, the Department clarified that Class I should extend downstream and terminate at the head of tide near Spencer Island with Class II starting at Spencer Island and continuing downstream. Other corrections made to waters in the area of the Susquehanna River include adding the “-P” public water supply designated use to all nontidal tributaries that flow into the Susquehanna River upstream of the mouth. These proposed changes resulted after the Department reviewed this portion of the regulation with associated GIS resources. In this case, MDE realized that several tributaries upstream of other “-P” waters (and upstream of a surface water supply system intake) were not assigned the public water supply use. In order to be consistent with the public water supply designation elsewhere in the State and to provide upstream protections for a drinking water source, MDE added the “-P” designation to those waters. In no cases with the changes proposed to the designated uses around the Susquehanna River were any designated uses proposed to be removed from these waters.

The second group of changes proposed to the designated uses of Maryland waters was for waters that demonstrated a coldwater existing use that was consistent with the definition of a Class III or III-P water body and which demonstrated water temperatures that met the Class III (III-P) water temperature criterion. In all scenarios where the Department proposed changes to designated uses as a result of this finding, these waters would be assigned a designated use that has a more stringent set of water quality criteria (e.g., water temperatures, ammonia, dissolved oxygen) than they had previously. In all cases, these waters were previously Class I, I-P, IV, or IV-P waters that are now being proposed to be Class III or III-P (with no changes proposed to whether they had the “-P” public water supply use). Therefore, none of the changes proposed in COMAR 26.08.02.08 or any other part of this regulatory proposal requires a use attainability analysis.

29. **Condensed Comment:** In this triennial review proposal, EPA is pleased that Maryland is updating 69 of its current human health criteria to be consistent with EPA's recommendations, as well as adopting criteria for ammonia and cadmium for the protection of aquatic life. Maryland should consider the adoption of the 25 other updated human health criteria as well as other 304(a) nationally recommended criteria (e.g., *Ambient Water Quality Criteria to Address Nutrient Pollution in Lakes and Reservoirs, 2021*). Should MDE choose not to adopt these other nationally recommended criteria, pursuant to 40 CFR § 131.20(a), the State shall provide an explanation when it submits the results of its triennial review to the Regional Administrator consistent with CWA § 303(c)(1) and the requirements in 40 CFR § 131.20(c).

MDE Response: For those nationally recommended criteria that the Department does not plan to adopt with this Triennial Review, it has provided explanations in the main Triennial Review document within the section titled “Nationally Recommended Water Quality Criteria Considered with Maryland’s 2019 Triennial Review”. Please note that the Department added language discussing the latest 304(a) criteria for addressing nutrient pollution in lakes and reservoirs.

30. Please provide a rationale for the removal of language for the Human Health Ambient Water Quality Criteria: 2,4-Dinitrophenol (pg 24 of TR). This criterion was removed entirely from regulations. Please explain why.

MDE Response: The Department proposes to adopt 69 of the 94 human health criteria (HHC) that were recently updated and nationally recommended by EPA. The remaining 25 HHC will be further evaluated for potential adoption on the next Triennial Review. The chemical 2,4-Dinitrophenol is one of those 25 remaining chemicals to evaluate. The Department is proposing to adopt the 304(a) criteria for Dinitrophenols, a class of chemicals with 6 isomers that includes 2,4-Dinitrophenol. Since the criteria being proposed for Dinitrophenols includes 2,4-Dinitrophenol and because the newly proposed criteria for Dinitrophenols is more stringent than the Maryland’s current 2,4-Dinitrophenol criteria, the Department believes it is appropriate to remove the outdated 2,4-Dinitrophenol criteria since it could be replaced with the more stringent Dinitrophenols criteria. As a result of doing this, Maryland will be better able to protect water quality from impacts due to 2,4-Dinitrophenol and any other Dinitrophenol isomers. The table below illustrates the difference in magnitude of the two sets of criteria.

Chemical	Status	Drinking Water + Organism (µg/L)	Organism Only (µg/L)
2,4-Dinitrophenol	Currently in COMAR	69	5,300
Dinitrophenols	Being Proposed for Adoption	10	1000

31. Section 26.08.02.04. Antidegradation Policy. Maryland is proposing to adopt language at 26.08.02.04.B. to indicate “[c]onsistent with the Federal Act, existing uses and the level of water quality necessary to protect existing uses for any water body shall be maintained.” In order to be wholly consistent with federal regulation, EPA recommends that this provision should indicate that water quality will be “maintained and protected.” Maryland should also review its provision for Tier II protection so that those waters are “maintained and protected.”

The federal regulation uses the term “maintain” to indicate protection of baseline water quality, whether it maintains uses actually attained in the water body on or after November 28, 1975, or water quality that exceeds levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water. “Protect” indicates conservation of the margin of safety that affords the water body increased resilience to potential future stressors. Alternately, Maryland can indicate how its antidegradation regulations provides water quality resilience to stressors.

MDE Response: MDE notes that the “maintain and protect” language proposed by the commenter already exists in this regulation at 26.8.02.04.A. where it states, “Waters of this State shall be protected and maintained for existing uses and the basic uses of water contact recreation, ...”. The newly proposed section B. of this regulation is meant to emphasize the importance of maintaining the water quality (underlined for emphasis) that supports the existing use. This is especially important in Maryland’s efforts to protect cold water streams from degradation due to water temperature increases. With regards to the language for implementing Antidegradation Policy for Tier II waters, the Department will take EPA’s recommendations under advisement for the next Triennial Review but notes that the proposed regulations continue to use the concept of assimilative capacity to provide a margin of safety to water bodies designated as Tier II.

32. Maryland should consider revising 26.08.02.04.C(1) [unrevised citation: §B(1)] to read “The Department determines a change in quality is justifiable as a result of necessary economic or social development in the area in which the waters are located;”

MDE Response: MDE will consider this suggestion in the next Triennial Review but notes that the proposed COMAR 26.08.02.04-2 includes unrevised language from the current Tier II regulations which mentions the location in which the economic and social development must occur in order to determine that a change in quality is justifiable. See language below cited from the proposed COMAR 26.08.02.04-2.J(1)(c) and (d).

“(c) Physical development after the date of the Tier II listing is necessary to accommodate the projected growth within the watershed, and use of ...

(d) If the Department of Planning's growth projections for the watershed affecting the Tier II waters demonstrate that additional physical development of undeveloped land is required to ...”

33. In order to be transparent as to stakeholder participation when lowering water quality, EPA recommends that Maryland add a provision to 26.08.02.04.C (unrevised citation: §B) to

indicate that the intergovernmental coordination and public participation provisions of Maryland's continuing planning process will be fully satisfied.

MDE Response: MDE will consider these recommendations on the next Triennial Review but notes that the language in the proposed COMAR 26.08.02.04-2.M (mostly unrevised from COMAR 26.08.02.04-1.N.) includes several sentences describing the public participation process that is required for any Tier II review, and including those that would allow the lowering of water quality.

34. In order to be wholly consistent with federal regulation, Maryland should add to its antidegradation policy specific provisions to protect Outstanding National Resource Water consistent with 40 CFR § 131.12(a)(3). Consistent with 40 CFR § 131.12(a)(4), Maryland should also include provisions that specify, in cases where thermal discharges have the potential of lowering water quality, the state's antidegradation policy and implementation procedures are consistent with section 316 of the CWA.

MDE Response: Maryland's Tier III ONRW regulations specifically follow 40 CFR § 131.12(a)(3) and, in fact, use the exact language, word-for-word, provided in 40 CFR § 131.12(a)(3). This language is located (unrevised) in COMAR 26.08.02.04-3.A and states, "Where high quality waters constitute an outstanding national resource, such as waters of national and State parks and wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected." Regarding the commenter's assertion that Maryland should maintain consistency with 40 CFR § 131.12(a)(4), the Department notes that COMAR provides two regulations, 26.08.03.03 (Water Quality Impact Assessment for Thermal Discharges) and 26.08.03.05 (Cooling Water Intake Structures) that address section 316 of the CWA. MDE also notes that with this Triennial Review and proposed rulemaking effort, it is specifically proposing new antidegradation policy implementation regulations designed to protect previously undocumented cold or cool water streams. If the commenter still believes that the existing and proposed provisions are not adequate to address the impacts from thermal discharges, the Department would need additional clarification from the commenter to better understand their suggestion.

35. Maryland should take the opportunity during this triennial review to consider splitting out the designated use provisions from its antidegradation policy. Note that changes to use designations are changes to WQS regulations and are thus subject to EPA's public participation regulation at 40 CFR Part 25. Therefore, EPA strongly recommends that

26.08.02.04.F (unrevised citation: §E) be revised to indicate a public hearing will be held, not just that there is an opportunity for a public hearing.

MDE Response: MDE would like to better understand this suggestion by the commenter and will consider these recommendations on the next Triennial Review.

36. Under section 26.08.02.04.E (unrevised citation: §D), when changes in designated uses and associated criteria are undertaken, those changes can only be done based on the listed factors. Those factors in Maryland regulation are: (1) The designated use is not attainable because of natural causes; (2) The designated use is not attainable because of irretrievable man induced conditions; or (3) Controls more stringent than the effluent limitation and national performance standards mandated by the Federal Act [CWA], and required by the Department, would result in substantial and widespread economic and social impact. EPA notes that those factors are not wholly consistent with the six factors specified in federal regulation at 40 CFR §131.10(g)(1-6). Maryland should consider revising its factors to be consistent with federal regulation.

MDE Response: The Department appreciates these suggestions and will take them under advisement on the next Triennial Review.

37. MDE should consider modifying the first step of the flowchart to reflect all activities that trigger an antidegradation review, perhaps by referring to 26.08.02.04-2.E.

MDE Response: While the commenter's suggestion may provide more detail in the flowchart, it will make the flowchart harder to read and more cluttered. The flowchart's purpose is to provide a general overview of the antidegradation procedure and not a detailed description of the process. And, as described by the commenter, the activities that trigger an antidegradation review are described in 26.08.02.04-2.E.

38. Under 26.08.02.04-2.A(a), Maryland considers water quality to be significantly better if “(m)asured water quality characteristics for which numeric criteria have been promulgated are significantly better than the water quality specified in” 26.08.02.03, 26.08.02.03-1, 26.08.02.03-2 and 26.08.02.03-3 of Maryland regulation. This would be consistent with federal regulation at 40 CFR § 131.12(a)(2)(i) for identifying Tier II waters using a parameter-by-parameter approach. However, Maryland's antidegradation policy implementation procedures do not specify how an antidegradation review would be triggered on a Tier II water identified through 26.08.02.04-2.A(a) as Maryland regulation at 26.08.02.04-2.F(1) indicates that a discharger shall determine whether the receiving water body is a Tier II

watershed by consulting the list of Tier II waters. The list of Tier II waters currently in Maryland regulation is based on waters identified as Tier II through 26.08.02.04.A(b), which uses the Maryland Biological Stream Survey (MBSS) and would be consistent with a water body-by-water body basis. MDE should consider adding specific direction on how an antidegradation review would be triggered on a parameter-by-parameter basis.

MDE Response: To date, the Department has not yet designated any waters as Tier II using the parameter-by-parameter approach. However, as stated in the proposed regulations, if the Department does identify Tier II waters for a specific parameter, a list of those waters (and the specific parameter) will be provided in the regulation 26.08.02.04-2. In other words, applicants for a new or major modification of an existing discharge permit or Notice of Intent for authorization under a general permit, wetlands and waterways permit, water quality certification, or water and sewerage plan amendment would consult this list to determine which water body-parameter combinations are listed as Tier II.

39. Maryland regulation at 26.08.02.04-2.D indicates that water bodies included in the list of impaired waters (303(d) List) are not Tier II waters for the impairing substance. Maryland should clarify how this provision will be implemented on a parameter-by-parameter basis and for designated uses that are not identified as impaired.

MDE Response: This provision of 26.08.02.04-2 means that in the case of designating Tier II waters using the parameter-by-parameter approach, MDE will not designate a water body-parameter combination as Tier II-high quality if that water body is already identified as impaired (on the 303(d) List) for that specific parameter. For example, MDE would not designate Mill Creek as Tier II for dissolved oxygen if that same section of Mill Creek is impaired for having low dissolved oxygen. Similarly, in the case of designating Tier II waters using the water body-by-water body approach, the Department will not designate a water body as Tier II-high quality for its benthic macroinvertebrate and fish communities if its benthic and/or fish communities are already identified as impaired.

40. 26.08.02.04-2.H(2), Maryland indicates that if the minimization of the use of assimilative capacity is adequate, then no social and economic justification (SEJ) is required as part of an antidegradation analysis. Please confirm how this provision is implemented. The commenter notes that if the implication is that by minimizing the impacts of a new or increased discharge, even if it results in water quality impacts, that SEJ is not required, that is not entirely consistent with EPA's antidegradation policy. If adequate minimization implies *de minimis*, then this provision would be consistent with EPA's antidegradation policy.

MDE Response: MDE interprets the phrase, “minimization of the use of assimilative capacity is adequate”, to mean that impacts have either been completely eliminated or offset (through mitigation) or that only *de minimis* impacts remain. The Department’s interpretation is thus consistent with EPA’s antidegradation policy.

41. 26.08.02.04-2.I(1)(a) should indicate that an SEJ shall be submitted if no cost effective alternative to the discharge or water quality impacts is available. The commenter recommends that this provision be explicit to indicate that an SEJ shall be submitted if minimization of the use of assimilative capacity is not adequate to address all water quality impacts.

MDE Response: MDE already implements it’s Tier II implementation policy consistent with the commenter’s recommendation. The Department will consider making this language revision on Maryland’s next triennial review of water quality standards.

42. 26.08.02.04-2.I(2) indicates that to allow for natural variability, water quality shall be considered diminished only if the assimilative capacity is cumulatively reduced by more than 25 percent from the baseline water quality of either benthic or fish IBI value used to make the Tier II stream designation. EPA understands the need to allow for natural variability, but recommends MDE provide the rationale for 25 percent reduction in assimilative capacity being considered natural variability. EPA also recommends MDE explain what method(s) a discharger can use to calculate how a new or increased discharge will impact/reduce fish and benthic IBIs. Also please note the reference to §O needs to be revised to §N.

MDE Response: In reference to the commenter’s assimilative capacity question, in 2011, the Department conducted an analysis of DNR’s Maryland Biological Stream Survey (MBSS) Sentinel Sites throughout the State that had a benthic or fish index of biotic integrity (IBI) equal to or greater than 4.00. MBSS Sentinel sites are particularly useful for this analysis because they represent streams with few anthropogenic influences and are sampled every year by Maryland DNR. Analyzing IBI changes at these sites provides an approximation of the interannual variability of IBI scores due to natural variation. MDE analyzed the changes in IBIs at these sentinel sites to determine whether the 25% assimilative capacity (AC) threshold (or coefficient of variation (CV)) was an appropriate threshold for determining when a Tier II stream had degraded. Though this analysis did not have a large sample size, the 25% AC/CV threshold fit within an acceptable confidence interval for the sentinel site CVs and the Department believes it to be a reasonable threshold for determining if degradation has occurred at a Tier II stream.

Regarding the commenter's recommendation for calculating impacts on IBIs due to a new or increased discharge, the Department agrees that this would be a useful model to develop and would welcome any assistance that the commenter could provide to this end. The Department made the necessary edits to the reference for §O which should be §N.

43. Please confirm if the public participation required under 26.08.02.04-2.M would include the determination that the requirement for SEJ is met if any of the demonstrations are made under 26.08.02.04-2J(1).

MDE Response: Yes, any information that the Department receives as part of the social and economic justification (SEJ) will be provided for public review at the time that the permit or other authorization is made available for public review.

44. Please indicate where Maryland maintains, or would maintain, a list of Tier III waters.

MDE Response: Maryland currently does not have any designated Tier III waters. In the future, if waters receive the Tier III designation, they will likely be listed in 26.08.02.04-3 in a manner similar to that of Tier II waters.

45. Under 26.08.02.04-3.F Maryland uses the term "protected status." How does Maryland define that term?

MDE Response: The term "protected status" refers to an area with existing protection and which is defined earlier in this regulation at 26.08.02.04-3.B.(2) that defines "protected area".

46. The commenter commends MDE in its efforts to revise the state's Chesapeake Bay water quality standards at COMAR 26.08.02.03-3 to be consistent with the updated Chesapeake Bay criteria technical addendums.

MDE Response: The Department appreciates the commenter's support.

47. The commenter recommends that MDE consider strengthening the language supporting the use of the Biotic Ligand Model (BLM) as a means for calculating site-specific criteria for copper. The BLM is identified in Maryland regulations at COMAR 26.08.02.03-2D(4). Currently in regulation at 26.08.04.02-3 (Discharge Permit Limits Based on Biological Translator), Maryland allows for the use of the 1994 Interim Guidance on Determination and

Use of Water-Effect Ratios for Metals (EPA-823-B-94-001) or the 2001 Streamlined Water-Effect Ratio Procedure for Discharges of Copper (EPA-822-R-01-005) for developing site-specific metals criteria. EPA no longer supports the use of the Streamlined WER Procedure, and its reference should be deleted from Maryland regulation. The 1994 WER guidance is still valid for use for other metals, but the BLM represents the best current and available science, and EPA's scientific judgment is that application of this model is the best way to ensure that the resulting site-specific copper criteria will be protective of aquatic life designated uses.

MDE Response: The Department will take these recommendations under advisement when proposing revisions as part of the next Triennial Review of Water Quality Standards.

48. As a general comment, the 2015 revisions to EPA's Water Quality Standards Regulation at 40 CFR § 131 adopted a specific definition and procedures for variances. Water quality standards variances under 40 CFR § 131.14 are to be used for developing alternative § 402 permit limits. In contrast to the limited scope of WQS variances under the current Part 131 regulations, Maryland's restoration variances actually represent modified designated uses. As such, EPA will review changes to these under 40 CFR § 131.10 and 12. To avoid confusion, we recommend that Maryland adopt an alternate term such as 'restoration allowance' or "restoration use" to substitute for the term 'restoration variance.' The EPA encourages Maryland to incorporate the new "restoration" term and the revisions warranted by the modeling in the upcoming Triennial Review.

MDE Response: The Department appreciates the clarification and will consider substituting a new "restoration" term for "restoration variance" in the next Triennial Review.

49. Per the Coldwater Existing Use Determinations Policies and Procedures, I would like to understand why, rather than considering the connected watersheds and extended watersheds the decision is being made to segment areas out as if these segmented areas are not directly affected by connected waterways and upstream use designations? This decision will only lead to local permitting agencies and organizations NOT considering and accounting for their affects on downstream higher level protected areas and degradation of our waterways and the areas we are segmenting to protect. Knowing that these higher level protected areas are not isolated; they are not lakes. They are interconnected watersheds and are and will continue to be influenced by the connected and surrounding waterways. If this regulation does not approach the designation with this watershed approach, ecosystem approach, rather than this unscientific segmented, isolated resource approach, we are condemning our waterways.

MDE Response: The Department understands and appreciates the commenter’s concerns. MDE is currently drafting a fact sheet to help better explain the Department’s current practices to screen and protect cold water existing use streams whether they are located near a permitting activity or located downstream of that permitting activity (thus using a watershed approach). As part of this work, MDE will look for potential protection gaps in permitting activities and identify ways to improve protections where possible. Regarding the commenter’s concern on the geographic scale of the proposed existing use determinations, the Department will be re-evaluating this with its colleagues at MD DNR and will take the commenter’s recommendations under advisement.

50. **Condensed and Paraphrased Comment:** The commenter is concerned that as part of the existing use determinations, MDE is retaining non-protective water quality criteria in waters directly upstream of cold water existing use waters. Using stream segments rather than sub-basins to delineate known existing use waters does not guarantee their protection from degradation from upstream pollution. COMAR acknowledges that Maryland's waters are generally organized by sub-basin. For most Class I, I-P, III, III-P, IV, or IV-P waters, the limits indicate the most downstream boundary point or line for the segment. With the water quality criteria applied throughout the sub-basin, the prevention of degradation required in COMAR is attainable. Pursuant to sections 303 and 101(a) of the Clean Water Act (CWA), the federal regulation at 40 CFR 131.10(b) requires that “In designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.”

MDE Response: Please see the response to comment 49.

51. **Paraphrased Comment:** MDE provides little information on how existing uses will be handled with respect to MDE’s permitting programs. Various State, federal, and local government agencies receive applications for review and must decide on permits that may directly impact coldwater resources. These permits include those that involve erosion and sediment control, grading, stormwater management, dam and pond construction, waterway and wetland projects, NPDES permits, and surface and groundwater appropriations. How will MDE’s permitting programs handle permit applications for projects near or in the upstream watershed to an existing use stream? By not providing this information this could cause increased regulatory uncertainty in the submission, review, and final decision relative to land-use, in-stream work, and discharge permit applications.

MDE Response: The Department appreciates the commenter’s concern and, as a result, is in the process of drafting a fact sheet to help better explain the Department’s current practices to screen and protect cold water existing use streams. As part of this work, MDE will look for potential protection gaps in permitting activities and identify ways to improve protections where possible.

52. **Paraphrased and Condensed Comment:** In the 2019 TR Proposal, MDE fails to provide water quality standards with temperature criteria to newly determined existing uses. Therefore, the 2019 TR Proposal as written can potentially result in the violation of the antidegradation regulations in COMAR and CFR. The lack of applicable water quality standards for existing use waters is incongruous with MDE’s regulatory change to clarify that degrading an existing use is unlawful.

MDE Response: The Department would like to clarify that with each existing use determination proposed as part of this Triennial Review, that the existing use description includes not only a description of the cold water obligate species that use these streams but also a description of the temperature regime found in these streams. The temperature regime is specifically described in terms of summary temperature statistics, and it is these temperature conditions which must be maintained in these streams to protect the existing use found therein. Though these temperature statistics were not proposed for adoption as water quality criteria in Code of Maryland Regulations, they do serve as conditions that must be maintained and thus are taken into account during the Department’s permitting activities.

53. **Paraphrased Comment:** MDE fails to include a “coldwater” existing use determination to protect streams with cold water temperatures (<10% exceedance of 20 degrees Centigrade) but do not contain regulatory obligate species. Streams with Maryland Biological Stream Survey Summer Index Period temperatures that meet the criteria for Use Class III waters, but from which coldwater obligates have not been captured, are being retained in Use Class I and Use Class IV designations. Coldwater represents an important and scarce resource especially in Central Maryland. Allowing these streams to legally receive thermal discharges of up to 90 degrees Fahrenheit is antithetical to the intent of the Clean Water Act. The commenter urges MDE to assign an existing use determination to coldwater streams pending a use attainability assessment to examine suitability for the introduction of cold water obligates. The reintroduction of native brook trout that require cold water is a goal of the Chesapeake Bay Agreement to which Maryland is a signatory. The Maryland Department of Natural Resources (MD DNR) is actively seeking and evaluating streams that may be suitable for brook trout introductions.

MDE Response: The Department acknowledges the commenter's concerns and will take these recommendations under advisement as it looks into this matter further with its colleagues at MD DNR.

54. The commenters believe that the 2019 TR Proposal addresses many important issues. We commend the Department for their work to:
- Recognize certain natural trout and coldwater obligate existing use waters that are not protected by current water quality standards.
 - Incorporate anti-degradation language which clearly states that existing use waters must be protected.
 - Develop an existing use policy.
 - Assign a Use Class III designation to certain streams that were previously designated Use Class I or IV.

MDE Response: The Department appreciates the commenter's acknowledgement and support.

55. **Condensed and Paraphrased Comment:** The commenter expresses similar concerns, as were expressed in comments 49 and 50, with the geographic scale of the proposed existing use determinations and the lack of new upstream water quality criteria.

MDE Response: Please see the response to comment 49.

56. **Condensed and Paraphrased Comment:** The commenter expresses similar concerns, as were expressed in comment 52, with having water quality criteria for existing use waters.

MDE Response: Please see the response to comment 52.

57. **Condensed and Paraphrased Comment:** The commenter expresses similar concerns, as were expressed in comment 51, with how MDE will handle permitting activities near or upstream of cold water existing use waters.

MDE Response: Please see the response to comment 51.

58. **Condensed and Paraphrased Comment:** The commenter expresses similar concerns, as were expressed in comment 53, with the fact that MDE did not propose new existing uses for those waters that achieve the Class III water temperature criteria (20°C) but for which no cold water obligates have been observed.

MDE Response: Please see the response to comment 53.

59. The 2019 TR Proposal has apparently omitted streams that were submitted to MDE by either MD DNR or Trout Unlimited or both for potential inclusion. The commenter requests that MDE address the status of Falls Creek in Washington County and UT Michaels Run in Harford County.

MDE Response: Inadvertently, the Department did not include the draft Falls Creek (Washington County) existing use determination or the UT to Michaels Run in the documentation provided to the public as part of the public review period for Maryland's Triennial Review of Water Quality Standards. These draft existing use determinations will be posted for public review and comment after the completion of this Triennial Review.

60. Either by omission or by decision making, two tributaries to the West Branch North Branch Patapsco which are natural trout existing use waters are not listed for an existing use determination. An unnamed tributary (UT) at Tannery Hill Rd from the northerly direction and a UT between Gorsuch and Reese Rd. from the southerly direction are not in the 2019 TR Proposal.

MDE Response: To clarify, the stream segment that the commenter refers to as the "unnamed tributary (UT) at Tannery Hill Road from the northerly direction", was referred to by MDE as "UT West of Carriage Hill Drive" in the existing use determination document named "Draft Existing Use Determination and Rationale: West Branch North Branch Patapsco River and Three Unnamed Tributaries (Carroll County)". The segment referred to by the commenter as "UT between Gorsuch and Reese Rd" was called, by MDE in that same document, as "UT near Hemlock Lane". In the case for both stream segments, MDE was consistent in how it handled the scale of cold water existing uses for all waters evaluated. However, as noted in MDE's responses to other related comments above, in collaboration with MD DNR, the Department will be re-evaluating the scale of its existing use determinations in the future.

61. **Condensed Comment:** We urge MDE to reclassify the tributaries to the North Branch Patapsco and West Branch North Branch Patapsco that meet Use Class III criteria to that designation and assign a natural trout existing use or some other properly representative existing use to all other tributaries of the mainstem North Branch Patapsco and West Branch North Branch Patapsco. Since when surveyed, nearly all streams within these two watersheds were found to support trout, doing otherwise is unprotective, unscientific, and contrary to the intent of the Clean Water Act.

MDE Response: MDE was consistent in how it handled the scale of cold water existing uses for all waters evaluated. However, as noted in MDE's responses to other related comments

above; in collaboration with MD DNR, the Department will be re-evaluating the scale of its existing use determinations in the future.

62. The commenter argues that the delineation of the existing use for Deep Run in Carroll County and Talbot Run in Frederick County greatly underrepresents the extent of stream occupied by trout (Deep Run) or that can support trout (Talbot Run). For Deep Run, the commenters have submitted additional data and information to MDE. We expect that the limits for the existing use determination will be extended to properly protect the existing use within Deep Run. For Talbot Run, the commenters urge MDE to consider the location and extent of previously identified Use Class III waters and to extend the existing use determination downstream to below Use Class III tributaries.

MDE Response: MDE appreciates the additional information and will work with the commenter and MD DNR to refine the existing use determinations with the newer data that is now available.

63. Maryland's current stream use designation system is inadequately protective of the State's trout waters in part because it does not account for the wide range of environmental conditions in which trout live and reproduce. To address this issue, the commenter urges MDE to reconvene the Coldwater Advisory Committee as soon as possible to begin the important work of providing proper water quality standards to all trout waters.

MDE Response: MDE, in collaboration with MD DNR and other partners such as the commenter, continues to work to improve the maintenance and protection of cold/cool waters and their dependent aquatic life. Due to current staffing shortages, the Department does not yet have a defined timeline as to when the Cold Water Advisory Committee will reconvene. However, MDE remains committed to achieving the objectives laid out by the Cold Water Advisory Committee and, in the meantime, continues to make progress on issues related to cold water maintenance and protection.

64. **Condensed and Paraphrased Comment:** The commenter offers the following recommendations to the Maryland Department of the Environment (MDE) and Maryland Department of Natural Resources (MD DNR) for their consideration during the development of the 2019 Triennial Review (TR) and an anti-degradation existing use policy.

- MDE must either re-classify the mainstems to Class III or assign them a "natural trout water" or some other properly representative existing use and water quality criteria. The temperature limit(s) for existing use waters should not exceed the average daily temperature during a representative Summer Index Period.
- MDE must re-classify Cranberry Branch UT; West Branch North Branch Patapsco UT below Carrollton Rd.; and the North Branch Patapsco UT at Wesley Rd. to Use Class III "Non-tidal Cold Water". For all other blue-line tributaries between Liberty Reservoir and

Cranberry Run, MDE must either re-classify them to Use Class III or assign them a “natural trout water” or some other properly representative existing use and associated water quality criteria. The temperature limit(s) for existing use waters should not exceed the average daily temperature during a representative Summer Index Period.

MDE Response: MDE followed the “Existing Use Determinations: Policy and Procedures”, developed by the Cold Water Advisory Committee, in making existing use determinations with data available to the Department at the time. The Department will continue to review the latest data to update existing uses as necessary and encourages the commenter to reach out to Matt Stover (Water Quality Standards and Analysis Division Chief, matthew.stover@maryland.gov) with any data that is not yet included in the Department’s existing use determinations.

65. EPA’s revised ammonia criteria could have significant impacts on the State’s Wastewater Treatment Plants (WWTPs). The commenter appreciates the work MDE has done to understand and address Publicly Owned Treatment Works (POTW) concerns on this point. MAMWA supports MDE’s Mussel-Absent Procedures. However, MAMWA recommends that MDE develop guidance to explain the factors MDE will consider when determining that more stringent ammonia criteria cannot be met. This guidance should also provide an implementation schedule for incorporating the new criteria into permits and should include needed flexibility for plants that cannot reasonably comply with the new criteria.

MDE Response: The Department appreciates the commenter’s support and collaboration in preparing the ammonia criteria for this Notice of Proposed Action. The timing for setting the compliance schedule to meet the effluent limitations based on the new ammonia criteria will be when the discharge permit for the facility is due for renewal. The compliance schedule will likely be determined on a case-by-case basis with many factors involved (e.g. ambient/receiving water condition, current facility performance/effluent quality, the resources available for treatment upgrade, etc.). Similarly, determining when the more stringent ammonia criteria cannot be reasonably met by a WWTP will be evaluated on a case-by-case basis. For more details on the implementation of the proposed new ammonia criteria in NPDES permits for POTWs, please contact Yen-Der Cheng, Chief of the Municipal Surface Wastewater Discharge Permit Division at yen-der.cheng@maryland.gov.

66. The commenter supports and recommends adoption of the restoration variances described in the Triennial Review Overview.

MDE Response: MDE appreciate the commenter’s support.

67. With regards to the proposed incorporation by reference of the document “Cold Water Existing Use Determinations: Policy and Procedures”, what will happen if an existing use is established but the waterbody cannot be redesignated because it does not comply with existing temperature criteria? The commenter believes that MDE would like to avoid streams from being *de facto* permanently identified under a document that is only meant to bridge the gap in time between triennial reviews. For this reason, MAMWA urges MDE to move forward with adopting a new coolwater class as soon as is practicable. Until adoption of a new use class, MDE should consider how long it is reasonable to continue to keep streams “in limbo” without a proper use class redesignation.

MDE Response: MDE acknowledges this recommendation and remains committed to achieving all of the objectives laid out by the Committee including the adoption of a new “coolwater” use classification. However, due to staffing shortages, the Department does not yet have a defined timeline as to when the committee will reconvene. MDE’s top cold water priority for now is to complete the Triennial Review and its associated regulation changes, including those that were the result of the great work of the Committee. Then, after completing this important first set of objectives for the cold water work (i.e., Existing Use Policy and Procedures, existing use IDs, use redesignations, and clarifications to the antidegradation protections for Tier I waters), MDE hopes to fill the staffing gaps and restart work with the Committee on those other objectives. The Department agrees with the commenter in that it seeks to avoid having waters with existing uses that are not included in the designated uses specified for these waters. In fact, it is required to do so by 40 CFR § 131.10(i) which states that “*Where existing water quality standards specify designated uses less than those which are presently being attained, the State shall revise its standards to reflect the uses actually being attained.*” However, given the work still required by the Cold Water Advisory Committee to properly develop and describe a new designated use class (i.e., coolwater), it may be some time before waters with the existing uses have new designations proposed in regulation. Regardless, consistent with the antidegradation protections in 40 CFR § 131.12(a) that state “*Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected*”, the existing uses shall be maintained and protected in perpetuity.

68. The commenter supports MDE’s decision to continue to use EPA’s PFAS guidance for protection of public health. PFAS should not be addressed in the State’s Water Quality Standards until additional scientific work on this issue is completed.

MDE Response: The Department remains actively engaged in monitoring for PFAS, taking regulatory actions to protect public health when necessary, and in reviewing the latest scientific developments on PFAS water quality criteria including but not limited to EPA’s

recently released Draft Aquatic Life Criteria for PFOA and PFOS. As nationally recommended PFAS criteria are finalized, MDE will make them a high priority for State evaluation and adoption where appropriate.

69. Human Health Criteria - MDE plans to adopt 69 of the 94 nationally recommended human health criteria during this regulatory revision while waiting to adopt the remaining 25 criteria after further evaluation with the next Triennial Review. At the very least, MDE should rely on EPA's analysis for adopting more stringent criteria for the remaining 25 criteria or explain why they cannot at present adopt them.

MDE Response: Leading up to finalizing the work that goes into the 2019 Triennial Review, MDE staff were able to fully evaluate 69 of the 94 nationally recommended human health criteria. In an effort to move forward with the Notice of Proposed Action without further delay, the Department decided to evaluate the remaining 25 human health criteria in preparation for the next Triennial Review of Water Quality Standards.

70. MDE's proposal to adopt many of the EPA's Nationally Recommended Water Quality criteria are not stringent enough to protect subsistence fishing communities. EPA's national recommended fish consumption rate of 22.0 g/d may be sufficient for the general population but it is insufficient to protect communities which practice subsistence fishing. Subsistence fishing in the Anacostia has been practiced for generations and is an important aspect of many people's fight against food insecurity in the DMV area, including much of the watershed in Maryland. It is estimated that at least 17,000 people in the lower Anacostia eat fish from the river each year and that these fish are not only consumed by the anglers, who may receive some messaging on fish consumption advisories, but that there is "widespread sharing of fish in extended social networks." For this reason, the EPA recommends the use of a default fish consumption rate of 142.4 g/d for subsistence fishers rather than the 22.0 g/d used for the general public. Furthermore, fish consumption rates may vary substantially among subsistence fishing communities and MDE should conduct local studies to identify an appropriate consumption rate. In the absence of these studies, MDE should immediately establish more stringent criteria between 130-142.4 g/d based on the consumption rates of the subsistence fishing communities within the state.

MDE Response: At this time, MDE does not have any empirical data verifying the fish consumption rates suggested by the commenter. Using EPA's higher fish consumption rate would result in advisories to avoid or only consume one meal per month for the most popular species. If subsistence fishers heeded this advisory, which is unlikely if they are experiencing food insecurity, it would result in the same fishers from not obtaining an inexpensive source

of protein. In any case, the current advisories for the Anacostia River are very conservative and do not include limited evidence that removing the lateral line and belly fat significantly reduces PCB contamination. The Department would be happy to work with the commenter to provide outreach materials and information for the commenter to share with its constituents and the larger local community.

71. The 2019 Triennial Review fails to implement water quality standards such as criteria for nutrients citing “confounding factors as well as extensive data gaps preclude the development of scientifically defensible nutrient criteria.” Many organizations across the state have been collecting nutrient data for years, and it seems improbable that there is insufficient data to support a nutrient standard. A search of the Chesapeake Monitoring Cooperative database alone returns 40,000+ results for the state of Maryland when searched for nutrients. As part of larger restoration efforts for the Chesapeake Bay, extensive review of the nutrients has been conducted throughout the watershed for the use of TMDL. Numeric nutrient criteria are a critical tool for protecting and restoring a waterbody's designated uses related to nitrogen and phosphorus pollution. The Anacostia River has seen great improvements in water quality in the last decade which leads to improved habitat and recreational quality. Robust water quality standards for nutrients are an important part of continuing to protect the improvements that have been made and ensure that the further development in the watershed does not lead to a regression in water quality.

MDE Response: While MDE agrees with the commenter that nutrient data has been collected throughout Maryland, many factors affect it’s utility in deriving nutrient criteria. For additional information on Maryland’s nutrient criteria development efforts please see the response to comment 16.

72. **Condensed Comment:** PFAS- Per- and polyfluoroalkyl substances (PFAS) are widely used and persistent chemicals which break down slowly over time. There are thousands of PFAS chemicals which are used across a wide array of consumer products. Scientific studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects in humans and animals. We acknowledge that this is a new and growing field of research, but early studies in the state of Maryland suggest that this is a highly present threat in our waterways. Maryland should strive to develop numeric standards for PFAS in freshwater as this is an important strategy to ensure that these chemicals do not get into drinking water supply or food supply.

MDE Response: Please see the response to comments 27 and 68.

73. The commenter commends MDE on adopting revised criteria for ammonia which are more stringent than the current standards. In addition to these criteria, MDE should ensure that the ammonia criteria account for all current, historical and potential mussel habitat. Mussels have been observed throughout the state of Maryland and they provide important ecosystem services. The proposed criteria are appropriately more protective of waterbodies with known mussels, but it is unclear how protective these criteria are of waters which may not presently have a strong presence of mussels but for which there is a potential for mussel restoration.

MDE Response: As specified in the document, *Procedures for Applying the Mussels-Absent Ammonia Criteria to Maryland Surface Waters*, being proposed for incorporation by reference into Maryland's water quality standards, "the Department will use the default assumption that freshwater mussels are present in all surface waters". "However...the presence of freshwater mussel habitat and freshwater mussels themselves can be limited by natural stream characteristics." To capture these situations, the Department (with assistance and review from the Maryland Department of Natural Resources' resident authority on freshwater mussels) developed a scientifically derived decision method for determining if a water body, under natural conditions, would be extremely unlikely to support freshwater mussels. Since this method uses natural stream characteristics based on the life histories of freshwater mussels (including their generally sessile nature and dependence on fish for glochidia dispersal), it effectively protects waters that may have historically contained mussels, waters currently supporting mussels, and waters that have the potential to support mussels. The Department believes that this decision-making method, detailed in the aforementioned document, provides a robust and conservative tool for protecting waters that could potentially support mussels while at the same time not applying an inappropriately stringent criteria where it isn't needed.

74. **Condensed and Paraphrased Comment:** MDE should explain why it has not adopted more stringent nationally recommended criteria for numerous pollutants that adversely impact water quality and achievement of designated uses. Throughout the 2019 Triennial Review, MDE indicates it is continuing to review criteria for adoption but provides no explanation for its delay in adopting the criteria or what issues remain for consideration. The commenter cites MDE's failure to adopt the remaining 25 human health criteria (2015), the 2016 selenium criteria to protect aquatic life, the 2018 aluminum criteria to protect aquatic life, the 2019 recreational human health criteria for microcystin and cylindrospermopsin, and nutrient criteria including the 2021 criteria to address nutrient pollution in lakes and reservoirs.

MDE Response: MDE, being responsible for adopting water quality standards for the State of Maryland, is compelled to be well-versed in any proposed water quality standards changes prior to proposing them for adoption. Given the large number of water quality criteria that

have been recommended by EPA over the past several years and the Department's numerous goals for revising, updating, and improving Maryland's water quality standards (e.g., recognizing cold water existing uses, clarifications to Tier I antidegradation protections, ammonia criteria methods, etc.), the Department cannot always properly review and evaluate every criterion in preparation for the Triennial Review. Simply adopting nationally recommended criteria without prior review runs the risk of putting a criterion into regulation that may be inappropriate for Maryland's waters and which may have unintended consequences. As a result, the Department must necessarily prioritize those water quality standards that it will address on each Triennial Review. This prioritization allows the Department to keep the Triennial Review progressing so that some water quality standards changes can move forward to promulgation while others can be further evaluated in future Triennial Reviews to ensure that they are applicable to Maryland's waters.

75. **Condensed and Paraphrased Comment:** While we appreciate MDE's efforts regarding PFAS, PFAS presents a current danger to state waters. One of the commenter's member organizations investigated PFAS levels in the Antietam Creek watershed by analyzing effluent data from the Hagerstown and Smithsburg Wastewater Treatment Plants (WWTP), reviewing USGS' blood plasma data from smallmouth bass caught in Antietam Creek, and analyzing ambient water samples from Antietam Creek. The discharge PFAS levels, fish PFAS plasma levels, and the background PFAS level in the Antietam are a cause for concern. A report prepared by the Upper Potomac Riverkeepers showing these results is attached to this letter. We appreciate MDE's efforts to expand testing of WWTPs and urge comprehensive testing of all WWTPs, as well as sludge from WWTPs that may be used as biosolids for fertilizers. We also urge additional testing of PFAS levels in other aquatic species that are considered a food source, such as blue crabs, beyond MDE's 2020 pilot project for oysters, including the additional analysis recommended by its PFAS Scientific Roundtable in 2020.

MDE Response: MDE appreciates the commenter providing this information and has shared it along with these recommendations with the Department staff responsible for fish tissue consumption advisories (Kathy Brohawn, kathy.brohawn@maryland.gov), Municipal Wastewater Permits (Yen-Der Cheng, yen-der.cheng@maryland.gov), and water quality assessments/Integrated Report (Becky Monahan, becky.monahan@maryland.gov).

76. **Condensed Comment:** In light of the dangers of PFAS, other states have developed—or are in the process of developing—numeric standards for various PFAS. Maryland should follow them. Establishing water quality standards for PFAS compounds in freshwater is an important strategy to prevent these chemicals from getting into drinking water supplies.

MDE Response: Please see the response to comments 27 and 68.

77. While MDE's 2019 Triennial Review proposes to adopt new or updated criteria for numerous pollutants, it does not appear to account for higher fish consumption rates among subsistence fishing communities. MDE must not uncritically adopt EPA's recommended criteria, but rather establish more stringent criteria—between 130-142.4 g/day—based on the consumption rates of subsistence fishing communities within the state.

MDE Response: Please see the response to comment 70.

78. **Condensed Comment:** EPA's recommended criteria allows states to have some flexibility to adjust the standards based on the presence of species sensitive to the pollutant, such as mussels with respect to ammonia. However, it is not entirely clear how MDE's ammonia procedures (*Procedure for Applying the Mussels-Absent Ammonia Criteria to Maryland Surface Waters*) considers the circumstances of seasonal or intermittent presence of mussels, historical presence of mussels, or the presence of mussels in nearby waterbodies.

MDE Response: Please see the Department's response to comment 73.

79. **Condensed Comment:** MDE should clarify that a review of historical information regarding the presence of mussels should also be weighed and count against the use of less stringent mussel absent criteria. Where water pollution has contributed to the decline of these species, MDE should be restoring these habitat and species, not merely seek to maintain already reduced populations.

MDE Response: In the development of the model and document, *Procedure for Applying the Mussels-Absent Ammonia Criteria to Maryland Surface Waters*, MDE worked closely with the Maryland Department of Natural Resources (DNR) freshwater mussel authority as well as with US Fish and Wildlife staff responsible for reviewing impacts to rare, threatened, or endangered species. As part of this collaborative effort, MDE used the mussel data record from DNR's Maryland Biological Stream Survey. Additionally, DNR staff used other sampling data and historical information to ensure that the model appropriately protected all waters that historically supported freshwater mussels. The Department shares the commenter's goals of restoring and protecting historical, current and potential future mussel habitat.

80. MDE indicates that the decision regarding which criteria to use to develop ammonia limits will be made on a case-by-case basis, allowing the MDE permit writer to consider a number of factors including but not limited to the past performance of a facility, and options for managing various characteristics of the effluent. MDE does not provide sufficient information on these factors or how the permit writer would weigh them. A history of non-compliance should count against use of less stringent criteria. The only example provided, however, is that “[i]n most cases, the mussel absent criteria will only be made available when the MDE Wastewater Permits Program determines that the more stringent mussel present criteria *cannot be met*, even when considering the localized pH and the temperature post-mixing with the discharge.” MDE Mussel-Absent Ammonia Criteria Procedure at 16 (emphasis added). While we agree that the mussel absent criteria should be the rare exception, MDE should make clear that the difficulty in meeting the more stringent standards is not sufficient reason to apply the less stringent criteria.

MDE Response: As described in the document, *Procedure for Applying the Mussel-Absent Ammonia Criteria to Maryland Surface Waters*, in order to make use of the mussel absent criteria, not only must a discharger have difficulty meeting the mussel present criteria (as determined by the Department), but there must be a demonstration that mussels are highly unlikely to exist in the receiving stream. To determine the likelihood of mussel presence, the Department will require information on the abiotic factors that best predict the presence of viable mussel habitat. Only when these abiotic factors, when used in the mussel habitat model, demonstrate an extremely low likelihood of mussel presence in that stream, will the mussel-absent ammonia criteria be permitted. For more details on the implementation of the proposed new ammonia criteria in NPDES permits for publicly-owned treatment works, please contact Yen-Der Cheng, Chief of the Municipal Surface Wastewater Discharge Permit Division at yen-der.cheng@maryland.gov.

81. **Condensed and Paraphrased Comment:** It is unclear whether there will be any public participation during the consideration of the application of the mussel absent criteria or even an explanation to the public of the factors considered by the permit writer in making the case-by-case determination on the eligibility of the discharge to use the mussel absent criteria. MDE should make clear that the public will be able to review and comment on the data and rationale supporting the use of the less stringent criteria, allowing the submission of data regarding the presence of mussels or their habitat.

MDE Response: When the mussel-absent ammonia criteria are being proposed for use in developing an effluent limit for an NPDES permit, all information, data, and rationale associated with the proposed effluent limit for the draft discharge permit will be made available for public review and comment during the public participation process.

82. **Condensed and Paraphrased Comment:** The commenter supports MDE’s proposal to remove the dissolved oxygen restoration variances for the lower Chester River Mesohaline deep-channel (CHSMH) segment (16 percent) and the Patapsco River Mesohaline deep-water (PATMH) segment (7 percent). The commenter supports these actions and urges MDE to finalize them.

MDE Response: The Department appreciates the commenter’s support.

83. MDE also proposes to decrease the CB4MH deep-water restoration variance from 7 percent to 5 percent. Under EPA regulations, however, the requirements in the variance must “represent the highest attainable condition of the water body or waterbody segment applicable.” 40 C.F.R. §131.14(b)(1)(ii). Although we believe MDE should seek to assure attainment of the criteria, the data presented by MDE shows that a lower variance may be appropriate (4.4%). See EPA Chesapeake Bay Program Office, Adjustment to the Main Bay Segment CB4MH Deep-Channel and Deep-Water Dissolved Oxygen Criterion for Persistent Nonattainment and Removal of Chester River Deep-Channel and Patapsco River Deep-Water Restoration Variances, at 8, Fig. 3 (2020). While lowering the restoration variance for deep-water, MDE proposes to increase the CB4MH deep-channel restoration variance from 2 percent to 6 percent. The data presented would appear to show a lower variance could be attained (3.4%). See *id.* at 7, Fig. 2. Moreover, MDE indicates that EPA considers Maryland’s restoration variances to actually represent modified designated uses, which are reviewed under 40 C.F.R. §§131.10 and 12. *Id.* at 1 n.1. There would not appear to be an explanation as to how this increase would meet Maryland’s antidegradation policy. MDE should explain how this change complies with EPA regulations.

MDE Response: In suggesting that the Department adopt lower restoration variances for these two subcategory designated uses of CB4MH, the commenter cites the percent dissolved oxygen exceedance rates for the “WIP – 5%” scenario. It should be noted that this WIP scenario was provided for sensitivity analysis purposes only and has been determined to be unattainable by the Chesapeake Bay Program partnership. Instead, the partnership agreed to, and MDE is appropriately proposing, to adjust the restoration variances to be consistent with the Midpoint Assessment WIP targets which the Partnership believes are attainable and which are supported by the latest monitoring data and modeling updates. The proposed revisions to the restoration variances have been determined to be protective and will maintain the existing uses in CB4MH. As a result, these variances are consistent with all applicable federal and state regulations. Worth noting is that restoration variances are temporary and will be re-

evaluated in the future as new data and modeling improve our understanding of dissolved oxygen dynamics in CB4MH.

84. **Condensed and Paraphrased Comment:** The commenter is pleased with many of the proposed changes that clarify protections for cold or cool water existing uses under the Tier I level of protection. While the commenter supports provisions making clear that existing uses that require more stringent protections receive those protections, they feel that MDE does not provide an explanation as to how these protections will be implemented and enforced.

MDE Response: The *Cold Water Existing Use Determinations: Policy and Procedures* document, that is proposed to be incorporated by reference, provided a broad overview of how the Department will screen and review permit applications for projects in areas with cold water existing uses. In response to the commenter and other's requests, MDE is in the process of drafting a more detailed fact sheet to help better explain the Department's current practices to screen and protect not only cold water existing use streams but current Class III (and III-P) waters. As part of this work, MDE will look for potential protection gaps in permitting activities and identify ways to improve protections where possible.

85. MDE indicates it will compile and maintain, on its website, a public list of waters with an existing use that is not protected by the currently designated use and associated water quality criteria. However, MDE does not explain how these waters will be identified and whether the public will have an opportunity to seek modifications.

MDE Response: The Department refers the commenter to the document *Cold Water Existing Use Determinations: Policy and Procedures*, that is proposed for incorporation by reference. This document describes how such waters will be identified using all available data and how the public will be able to contribute to this process. This document can be accessed at: <https://mde.maryland.gov/programs/water/TMDL/WaterQualityStandards/Documents/Cold%20Water%20Existing%20Use%20Determinations%20Policy%20and%20Procedures.pdf>. Additionally, during the public review period for this Triennial Review, MDE also made available for public review and comment, the draft existing use determination documents for each water body that potentially had an existing use for which it's designated use may not be protective.

86. **Condensed Comment:** Although Maryland has recognized the adverse impacts of climate change on state waters, it is unclear whether it has accounted for such impacts in assessing

protections for existing uses. MDE should explain how it plans to do so as part of its triennial review.

MDE Response: In EPA’s regulations existing uses are defined as “those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.” (40 CFR §131.3(e)) Existing uses therefore serve as the baseline or floor of uses and water quality that must be maintained for a water body. In determining what the existing uses are for water bodies in Maryland, the Department assessed available data as to the presence of a particular use and the water quality achieved that was necessary to protect that existing use. These existing uses, as described both by the use occurring in the water body and the water quality to protect it, must be protected regardless of current and future impacts due to climate change.

87. The commenter reiterated comments, made in reference to TMDL development, that were previously submitted during the public comment period for Maryland’s 2012, 2014, 2016, 2018 Integrated Reports.

MDE Response: Since these comments do not pertain to Maryland’s Triennial Review of Water Quality Standards (they are only relevant to the Integrated Report and Maryland’s TMDL Development and Implementation efforts), they were not included in this document. The Department encourages the commenter to refer to the Department’s previous responses in those reports for the Department’s position on this subject.

88. According to MDE’s draft 2020-2022 Integrated Report (at 14), there were 284 total Category 5 listings in 2018. Since the 2018 Integrated Report, only 16 TMDLs were implemented for Category 5 waters. Figure 1 of MDE’s draft report indicates that no TMDLs have been established for PCBs, chlorides, or sulfates. While MDE is delisting 10 waterways as Category 5, MDE is listing an additional 101 waters to its list of Category 5 impaired waters. But Maryland indicates it plans to have 25 submissions to address Category 5 listings in FY2022 and 29 in FY2023. This remains well below the number of Category 5 waterways that require TMDLs. It is important that MDE assign TMDLs to these waterways to ensure that water quality standards are being attained.

MDE Response: Since these comments do not pertain to Maryland’s Triennial Review of Water Quality Standards, the Department recommends that the commenter reach out to Guido Yactayo, Chief of the Water Quality Modeling Division, at guido.yactayo@maryland.gov.

89. **Condensed and Paraphrased Comment:** States, such as Maryland are not required to adopt EPA’s Nationally Recommended Human Health Water Quality Criteria. The EPA criteria are merely recommendations; they do not apply automatically. Therefore, states are not required to adopt the national criteria or use the identical default values that EPA included in the equations to derive those national criteria. The states’ criteria must protect the designated use and be based on “sound scientific rationale” (40 C.F.R. § 131.11(a)). This provides states the opportunity to work with key stakeholders and to undertake the analysis needed to appropriately adapt national criteria to the state.

MDE Response: The Department is aware of the intent of EPA’s nationally recommended water quality criteria and understands states’ rights and flexibilities in deciding whether or not to adopt them. The Department will not propose the adoption of a water quality criterion that it feels is inappropriate for Maryland’s waters or designated uses.

90. MDE has the discretion to consider the costs of meeting the criteria and other social costs and benefits of their adoption, as well as other relevant factors.

MDE Response: Certain parts of the Clean Water Act (CWA) allow states to consider economic consequences of proposed regulations. Some examples of such CWA tools include compliance schedules, variances, and use attainability analyses. However, the CWA and its implementing regulations do not allow states to consider costs in the development of water quality criteria to protect applicable designated uses and provide downstream protection.

91. **Condensed and Paraphrased Comment:** The National human health water quality criteria are unnecessarily conservative and based on unrealistic default values including those used for drinking water intake level, level of treatment, and fish consumption quantity. These criteria are not necessarily applicable to Maryland’s waters.

MDE Response: In proposing the 69 human health criteria for adoption, MDE reviewed the nationally recommended criteria and the assumptions used to derive these criteria. The Department believes that the nationally recommended criteria used reasonable assumptions for protecting Marylanders’ health through the different exposure routes mentioned by the commenter. For a more detailed explanation of why EPA used these assumptions (and which MDE agreed with), the Department directs the commenter to the document named “EPA Response to Scientific Views from the Public on Draft Updated National Recommended Water Quality Criteria for the Protection of Human Health” (Docket ID No. EPA-HQ-OW-2014-0135).

92. **Condensed and Paraphrased Comment:** The commenter believes that using the probabilistic risk assessment (PRA) method is a more scientifically advanced way to calculate human health criteria and cites EPA's 2014 release of a risk assessment forum white paper as supporting rationale.

MDE Response: MDE believes that EPA's current publicly reviewed methodology (EPA's Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health, 2000) for deriving human health water quality criteria provides a strong scientific and policy rationale for the human health criteria that the Department is proposing. Though the PRA method presents a novel and perhaps viable alternative method, it has not been fully vetted by the scientific community for use in criteria derivation. The Department will continue to evaluate the state of the science and newer methodologies for deriving water quality criteria and may consider using PRA methods in the future.