UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

September 17, 2019

John R. Yagecic, P.E.
Manager, Water Quality Assessment
Delaware River Basin Commission
25 State Police Drive
P.O. Box 7360
West Trenton, NJ 08628-0360

Dear Mr. Yagecic:

The U.S. Environmental Protection Agency (EPA), Regions II & III have reviewed the Delaware River Basin Commission's (DRBC) response to comments on the draft November 2017, "Delaware River & Bay Nutrient Criteria Plan: Updated Approach, Tasks and Timeline (NCP)." EPA appreciates DRBC's willingness to accept additional comments on this plan as well as DRBC's ongoing efforts to address nutrient issues in the basin. EPA offers the following suggestions for improving the draft NCP.

1) Regarding Task E8, DRBC suggests that the development of the DO criteria will incorporate a "Technical and Economic Cost Evaluation from Task E7 to determine what levels of higher DO are attainable and the corresponding levels of protection to aquatic species from Task E3." Regarding Task E11, DRBC states "DRBC will utilize the existing eutrophication model to determine ambient TN and TP concentrations consistent with the new DO criteria and the wasteload and load allocations from Task E9. These TN and TP concentrations, when achieved in the estuary, will be supportive of the DO criteria determined from Task E8. Since these new TN and TP concentrations already reflect the wasteload and load allocations from previous steps, they are not expected to mandate additional nutrient controls beyond those already identified for achievement of DO. Rather, these TN and TP concentrations will be another expression of the required condition needed to achieve the new DO criteria. Since the new TN and TP concentrations are supportive of the new DO criteria and the new aquatic life use dependent on the DO, they are effects-based."

   EPA regulations at 40 CFR § 131.11(a) state: "States must adopt those water quality criteria that protect the designated use. Such criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use." EPA notes that the development of water quality criteria does not include a consideration of attainability of that criteria. Attainability and/or economic consideration can be made through several CWA tools or flexibilities, such as use attainability analyses, compliance schedules, or variances. The development of any of these CWA tools is a separate process from criteria development. EPA recommends that DRBC first determine the highest attainable use (which at a minimum would

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protect existing uses) in the appropriate sections of the river, and then develop criteria to protect those uses.

2) DRBC refers to "new aquatic life uses" in the descriptions of several tasks, such as Tasks E10, E11. This idea of "new aquatic life uses" seems to derive from Task E8 which states "DRBC will use the eutrophication model from Task E6 in conjunction with the Technical and Economic Cost Evaluation from Task E7 to determine what levels of higher DO are attainable and the corresponding levels of protection to aquatic species from Task E3." This implies that DRBC will be developing a new aquatic life use and DO criteria based on (1) a Technical and Economic Cost Evaluation and (2) the DO requirements of aquatic species identified in Task E3.

   EPA has two observations on these assumptions. First, as explained in comment 1 above, the development of criteria under the CWA as described at 40 CFR § 131 does not include attainability or cost considerations. Second, it is not clear what DRBC means by "new aquatic life uses". DRBC incorporates into the revised nutrient criteria plan by reference their 2013 nutrient criteria plan. The reader is referred to the previous 2013 plan for "broader discussions of history, concepts, and overview." The 2013 plan states:

   "An important consideration for the estuary in this evaluation is the possibility that full attainment of the Clean Water Act 101(a)(2) goals may be possible within the near future. Indeed, recent data suggest some degree of reproduction and juvenile rearing for some fish species within these degraded zones of the estuary, and DRBC is engaged in a process to reconcile the designated uses for these zones with the expanded existing uses (see footnote above). Page 7."

   Footnote: "Propagation by some estuarine species may be occurring in these zones where the designated use does not include propagation; separate efforts are underway to reconcile the designated uses within the estuary to the existing uses that may be higher than the designated uses. Page 6."

   DRBC seems to understand that existing uses may be higher (more stringent) than current designated uses, and that existing uses should be protected. Based on this information, EPA recommends that, as a first step, DRBC evaluate the existing uses in the applicable sections of the river and consider conducting a use attainability analysis, or otherwise submitting documentation, to redesignate those sections to, at a minimum, protect existing uses consistent with EPA regulations at 40 CFR 131.10(i), which states: "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." EPA notes that a water quality criterion for aquatic life use should protect the most sensitive aquatic life use which would protect all aquatic life uses. Further, EPA recommends that DRBC should ensure the existing uses are adequately reflected in their eutrophication model.

3) EPA notes that water quality standards consist of designated uses, criteria, and antidegradation. EPA regulations at 40 CFR § 131.2 state "A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria that protect the designated uses." Designated uses are defined at 40 CFR 131.3(f) as "those uses specified in water quality standards for each water body or segment whether or not they are being attained." Existing uses are defined at 40 CFR 131.3(e) 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." EPA further notes that EPA regulations at 40 CFR § 131.10(i) states: "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."

It is unclear how DRBC is separating out the processes of use attainability analysis and criteria development. It appears that the two processes may be being combined and simultaneously determined through the eutrophication model. This makes it difficult for the public and EPA to understand how DRBC is determining the use and developing criteria. EPA asks DRBC to explain how the process is being conducted if this interpretation is incorrect.

If this interpretation is correct, then EPA makes the following recommendation. Given the information provided in comments 1 and 2 and above, EPA recommends that as a first step, DRBC evaluate the existing uses in the applicable sections of the river and consider conducting a use attainability analysis to determine the highest attainable use (which at a minimum would protect existing uses) in the appropriate sections of the river. As a second step, EPA recommends DRBC develop criteria to protect those uses. (Refer to comments 1 and 2). EPA regulations at 40 CFR 131.3(m) define highest attainable use as "Highest attainable use is the modified aquatic life, wildlife, or recreation use that is both closest to the uses specified in section 101(a)(2) of the Act and attainable, based on the evaluation of the factor(s) in §131.10(g) that preclude(s) attainment of the use and any other information or analyses that were used to evaluate attainability. There is no required highest attainable use where the State demonstrates the relevant use specified in section 101(a)(2) of the Act and sub-categories of such a use are not attainable."

4) Task E11 states TN/TP criteria will be developed "utilizing the existing eutrophication model to determine ambient TN and TP concentrations consistent with the new DO criteria and the wasteload and load allocations from Task E9." Refer also to comments on criteria above. There is no further description of how these criteria will be developed, nor are any timelines provided. Please clarify how these tasks will lead to the development of numeric nutrient criteria (NNC) and include a timeline of NNC development and adoption. A more thorough description of the model is needed here to document the development of NNC. With the information currently available in this plan, it is difficult to determine whether or not this method could lead to derivation of NNC that are protective of designated uses.

5) EPA previously made a comment stating:
Protection of all designated uses which may [be] affected by elevated levels of nutrients is not addressed (only the aquatic life use is mentioned as the basis for DO criterion derivation). DRBC should elaborate on why only aquatic life use is being addressed.

DRBC replied:

In the absence of observed harmful algal blooms in the Delaware Estuary, aquatic life use is the primary driver for DO criteria development and subsequent numeric nutrient criteria.

EPA recommends that DRBC provide their justification for this decision, as well as a commitment to consider the need for additional or revised numeric nutrient criteria for all designated uses in the future as new information is presented.

6) EPA previously made a comment regarding DRBC's choice to base the development of NNC for total nitrogen and total phosphorus on the DO criteria produced from the eutrophication model. EPA asked:

   Is the assumption that DO is the critical limiting parameter and meeting the DO would drive the Total Nitrogen (TN) and Total Phosphorus (TP) criteria? Are there studies being done showing that DO is the critical limiting parameter for these waters and addressing only DO will result in protective [numeric nutrient criteria] NNC?

   DRBC replied:

   Concentrations of certain nutrient species are likely contributing to the current DO sag. The modelling will establish ambient nutrient concentrations necessary to support a revised DO criteria concentration which may then be used as a basis for establishing ambient NNC in the estuary.

   EPA recommends that at a minimum DRBC identify whether or not addressing only DO will result in protective NNC, and provide a justification supporting that determination.

7) EPA previously made a comment noting that total nitrogen (TN) is not included in the draft November 2017 "Delaware River and Bay Nutrient Criteria Plan: Updated Approach, Tasks and Timeline (NCP)" document as one of the non-tidal Existing Water Quality (EWQ) parameters. DRBC responded that TN is one of the EWQ parameters cited this weblink https://www.nj.gov/drbc/library/documents/WQregs.pdf to DRBC's "Administrative Manual – Part III Water Quality Regulations With Amendments through December 4, 2013, 18 CFR Part 410." The nutrient criteria plan cited above should be revised to reflect that TN is one of the non-tidal EWQ parameters.

In summary, EPA is requesting that DRBC revise the 2017 NCP to incorporate revisions reflecting the above-mentioned concerns. We appreciate your commitment towards protecting water quality and look forward to continuing to work collaboratively with you on this issue. EPA recognizes that DRBC has made significant strides in understanding the role of nutrients in the Delaware River basin, and expects that the NNC development effort will remain a high priority within the Commission. If you have any questions, please do not hesitate to contact me or have your staff contact Katherine Bentley at (215) 814-5762 in EPA RIII, or Brent Gaylord at (212) 637-3868 in EPA RII.

Sincerely,

Greg Voigt, Chief
Standards and TMDLs Section
EPA Region III

cc: Namsoo Suk (DRBC)
Wayne Jackson (EPA)