Community Science Institute, Inc.
NYSDOH ELAP #11790 www.communityscience.org EPA Lab Code NY01518

Gwendolyn Temple
625 Broadway, 4th floor
Albany, NY 12233-3500
AWQVinformation@dec.ny.gov

March 6, 2025

Dear Gwendolyn,

I'm writing on behalf of the Community Science Institute, a nonprofit organization based in Ithaca, NY, whose mission is to inspire and empower communities to safeguard water resources by cultivating scientific literacy through volunteer water quality monitoring, certified laboratory analyses, and education. Our volunteer groups have been collecting stream and lake samples and testing them through our ELAP accredited lab (Lab ID# 11790) for over twenty years. Results can be viewed by the public, via our database. As a long-standing monitor of total phosphorus, chlorophyll a, and benthic macroinvertebrates, CSI welcomes the opportunity to contribute to this public commentary period for NYSDEC's proposed changes to the TOGS 1.1.1 Nutrient Criteria. Our organization had the following questions and comments:

1) Could you please clarify the methods used to derive the biological response variables? The ponded waters values seem to use a taxa specific method that considers specific responses to phosphorus enrichment, following Threshold Indicator Taxa Analysis (TITAN). However, this does not seem to be the case for flowing waters. Could you further describe how the procedures in "*Technical support document: Development of numeric nutrient criteria for Florida lakes, spring vents and streams, in: Florida Department of Environmental Protection*" (2012) were used to account for uncertainty between TP and the BAP score?

2) For clarity, the wording for how the BAP score relates to the total phosphorus values could be more consistent. The "NYSDEC Releases DRAFT Guidance Values to Advance New York State's Regulation of Phosphorus" page states "BAP shall not be less than or equal to 5"; however, the Phosphorus Aquatic Life Fact Sheet for Flowing Waters states "≤5 Biological Assessment Profile Score (BAP) for All NYS Nutrient Ecoregions." These seem to be conflicting statements, but it is understood that if a waterbody is determined to be impaired via BMI (BAP<5), this is considered alongside the TP values.

3) For flowing waters, the need for implementing a biological response variable that is linked to phosphorus seems sensible, but the BAP is a multi-metric index. The BAP score is informed by other inputs aside from unacceptable levels of phosphorus to make a statement about whether a waterbody is said to be impaired. NYSDEC SOP-208_V21-1 describes the Nutrient Biotic Index-Phosphorus (NBI-P) as one of the community metrics that can inform a BAP. NBI-P seems to most appropriately be applied to riffle habitats,

which I suppose doesn't encompass all relevant waterbodies for the sake of the AWQV but why not use it? If use of the NBI-P is not advised for low gradient streams (e.g. ≤ 1% slope of stream reach), which tend to lack riffles, why not use a different metric for low gradient streams? Essentially, this might indicate the need for different BMI community metrics based on different flow regimes: e.g. high vs. low gradient flowing waters, and thus using different criteria for the biotic index that will be associated with TP.

4) SOP-208_V21-1 mentions that NBI-P supposedly shows strong correlations to stream nutrient concentrations and diatom communities. Why not use this guidance to apply NBI-P to track diatom communities and nutrients in streams where it seems most appropriate? This also begs the question, aside from BMI, should streams be assessed on the basis of other biological components, such as periphyton or microscopic organisms such as diatoms, so long as they relate to proposed phosphorus guidance values?

5) The table of guidance values includes a footnote of "values apply as mean concentrations" for TP ambient water quality values. How is TP determined for assessing guidance value exceedances? Please clarify the sampling protocol and conditions (e.g. baseflow) used to assess both flowing and ponded waters.

6) Please clarify the timescale considered to evaluate these criteria in context. How do the proposed criteria consider how quickly/slowly a waterbody responds to a change in TP and/or the biological response variables?

7) How will the impairment status of waterbodies be affected by these new guidance values? For a given waterbody, if either TP or the biological response variable exceed the stated threshold, but *both* do not exceed the threshold, does this mean the waterbody is not considered impaired? Must a waterbody meet both the TP *and* biological response variable criteria to be considered impaired?

8) NYSDEC Stream Biomonitoring results for two streams, Reeder Creek and Yawger Creek, in the Seneca Lake and Cayuga Lake watersheds respectively have differed in terms of their overall Biological Assessment Profiles (BAP) with Reeder Creek rated as only slightly impacted (BAP score >5.0) and Yawger Creek rated as moderately impacted (BAP score ≤5.0). This more or less aligns with CSI Biomonitoring results for the two creeks as well. Both of these creeks have shown total phosphorus results well in exceedance of the proposed NYSDEC quantitative limit (https://www.database.communityscience.org/surfacewater), however only Yawger Creek meets the response variable criteria of BAP ≤5. Does this mean that Reeder Creek would not be seen as in exceedance of phosphorus limits despite this creek having already been flagged for high phosphorus? Below is supporting data.

   NYSDEC Stream Biomonitoring results below as accessed 2/24/25 from New York State GIS Data Clearinghouse website:
   https://data.gis.ny.gov/datasets/2b6891bb1d834b82ae18ebbacdd18bdd/explore

a) Reeder Creek, upstream of E. Lake Rd (42.78619, -76.927)
7/17/19 Slightly Impacted (BAP >5)
b) Reeder Creek, Access Rd (42.78817946, -76.88694749)
8/1/18 Slightly Impacted (BAP >5)
c) Yawger Creek, Cross Rd (42.87860143, -76.68360755)
7/21/21 Moderately Impacted (BAP ≤5)

We appreciate the opportunity to comment on these proposed changes to NYSDEC's phosphorus guidelines, and for extending the public comment period. We look forward to hearing responses to our questions.

Respectfully submitted,

Noah Mark
Laboratory Director
--
Community Science Institute
Water Quality Testing Lab
NYSDOH-ELAP #11790
http://communityscience.org
607-257-6606