



MEMORANDUM

TO: DONOVAN GRAY, DEPARTMENT OF
ECOLOGY
CC: JIM DOTY, CITY OF BUCKLEY
DAVE SCHMIDT, CITY OF BUCKLEY
FROM: JAY SWIFT, P.E.
DATE: JULY 29, 2022
SUBJECT: REVIEW OF LOWER WHITE RIVER PH
TOTAL MAXIMUM DAILY LOAD –
TECHNICAL ANALYSIS AND TMDL
ALLOCATIONS

This memo is provided to summarize the City of Buckley's comments regarding the draft *Lower White River pH Total Maximum Daily Load – Technical Analysis and TMDL Allocations* ("TMDL Analysis").

Thank you for the opportunity to provide comments on the draft TMDL Analysis, and for your consideration of our comments. It is evident from the amount of data that the effort that went into completing the TMDL Analysis was significant. In our view, the TMDL Analysis would benefit from a more in-depth articulation of the water quality issues the TMDL is trying to address (i.e., "why are we doing this?"), the inclusion of more current data, some improvements in organization, and reductions in City monitoring requirements. Those are the focus areas for our comments.

1. GENERAL COMMENT

The TMDL Analysis would benefit from the inclusion of more recent data showing pH excursions above the 8.5 threshold; doing so could make a stronger case that high pH excursions are currently occurring and are a problem worth committing significant local resources to fix. The majority of the tables and figures show data well below pH 8.5 for diurnal maxima. In some instances, this is because the pH data were not taken at critical periods or locations. In the figures that do show excursions above pH 8.5 (such as Figure F-33), the data is from many years ago and/or the excursions are so rare and brief that they could be considered spurious outliers. Figure D-8, the most current data, does show a couple of pH excursions between 8.5 and 8.6. However, those are from 2015, and the rest of the data is from 2012 (10 years back) or earlier. Appendix J shows data that were collected 20 to 40 years ago.

All of this old data may still be representative of current conditions; however, the TMDL Analysis does not address whether that is the case, and the reader is left wondering if it is. Tables and graphs clearly showing that pH is a current problem (exceeding pH 8.5), including some data from the last few years if available, should be included, in an expanded “Problem Statement” section near the beginning of the document. This would be particularly useful in justifying the effort to comply with the WLAs, because of the inherent uncertainty in the modeling that supports the other claim that water quality standards are being exceeded, and WLAs are necessary (the 0.2 pH unit human-caused increase).

2. GENERAL COMMENT

Similar to the above comment, in an expanded “Problem Statement” in the beginning of the document, the modeling that shows that the 0.2 pH unit human-caused increase should be clearly summarized, with a graph and table. The data showing the magnitude and locations of the modeled exceedances of the 0.2 pH unit criterion are buried in the current draft TMDL Analysis.

3. WATER QUALITY CRITERIA, PAGE 26, 2ND PARAGRAPH

This paragraph does provide a good basic description of the negative impacts of extreme levels of pH on aquatic biota. However, it then cites an example of toxic effects caused by **low** pH, instead of **high** pH. Since this TMDL is primarily focused on preventing high pH excursions, it would seem that a better example would be to cite the impacts of pH excursions that are higher than the range specified in the water quality standards. For example, the section could elaborate on increasing ammonia toxicity at increasing pH, if that were considered significant in these types of river environments, generally, or specifically in the White River.

If there are, in fact, no data on deleterious impacts from diurnal pH excursions in the 8.5 to 9.0 range, it is suggested that Ecology and EPA consider further evaluating potential impacts (or lack thereof) in future water quality standard revisions, and consider adjusting water quality standards accordingly if appropriate. A slightly higher upper range for pH water quality criteria for rivers could have minor localized benefits where the rivers discharge into Puget Sound, neutralizing some of the acidification that is occurring in embayments due to climate change.

4. GENERAL COMMENT

The numbering of figures and tables in the document is confusing and should be fixed. For instance, in Appendix A, the first figure is A-4. In Appendix E, the first figure is E-11. Some of the figures are out of order. Similar issues exist for the tables.

5. APPENDIX E. TMDL ANALYSIS. LOADING CAPACITY

On Page 98, there appears to be a typo, or broken link, on this page (*Error! Reference source not found*).

6. PRELIMINARY RECOMMENDATIONS FOR IMPLEMENTING WLAS IN THE MUNICIPAL WASTEWATER NPDES PERMITS, SRP SAMPLING SCHEDULE

The first paragraph on page 111 of this section states that “the expected sampling frequency will likely be within the range of 1 to 3 samples per week”. It is recommended that the monitoring frequency be changed to weekly or monthly, as more frequent monitoring puts an undue burden on the City, which is already facing significant increased costs due to compliance with the TMDL WLAs as well as other new requirements proposed in the City’s draft NPDES permit.