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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

AUG 26 2011

REPLY TO THE ATTENTION OF:

WW-16J

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SEP - 2 2011

Bureau of Watershed Mgmt

Kenneth G. Johnson, Administrator
Division of Water
Wisconsin Department of Natural Resources
P.O. Box 7921
Madison, Wisconsin 53707-7921

Dear Mr. Johnson:

The U.S. Environmental Protection Agency has completed a review of the 2012 Draft Wisconsin Consolidated Assessment and Listing Methodology (Draft WisCALM). Please find our comments enclosed with this letter. It is important that sound monitoring and assessment inform 303(d) list submittals to help assure these lists can be approved by EPA. We thank you for the chance to review this document in draft form.

After a review of the Draft WisCALM, Region 5 concluded that the assessment methodology may not provide sufficient data in order to meet 305(b) requirements. In addition, it appears that Wis. Admin. Code NR § 102.06 may not be implemented as written when making listing determinations based on total phosphorus impairments. These primary concerns are detailed further in the enclosed comments.

Once you have had the chance to review our comments, we would like to schedule a call to discuss questions you may have, or to provide further information. In order to support a timely submittal of the 303(d) list, we suggest holding the call the week of September 12. Please contact Marcy Kamerath at 312-353-5784 to schedule, or to request an alternate date if needed. We look forward to continued coordination with WDNR on this effort.

Sincerely,

Tinka G. Hyde
Director, Water Division

Enclosure

cc: Bob Masnado, WDNR
Aaron Larson, WDNR
Kristi Minahan, WDNR

U.S. Environmental Protection Agency Comments on
Wisconsin's 2012 Draft Consolidated Assessment and Listing Methodology
August 25, 2011

1. Primary Comments

- a. **Concerns about monitoring and attainment decisions.** Under the Clean Water Act (CWA) § 305(b), States must describe water quality and assess whether waterbodies are meeting designated uses. Region 5 is concerned that under the current monitoring approach presented in the Draft 2012 Wisconsin Consolidated Assessment and Listing Methodology document ("Draft WisCALM" or "Draft Methodology"), Wisconsin Department of Natural Resources (WDNR) will not collect sufficient data to meet minimum data requirements outlined in the Draft WisCALM. Region 5 is concerned that the Draft Methodology will not fully capture impaired waters that should properly be included on the 303(d) list.
- i. **Tiered data collection approach is unlikely to collect sufficient data to assess waters and identify impairments.** Based on our understanding of the current monitoring approach, the Tier 1 data collection effort will not collect sufficient data to make an attainment determination. The Tier 2 data collection and analysis process is not designed to systematically collect data across all waterbodies, and in general only targets waters previously identified as "poor." Waters identified as "poor" will only be assessed as resources and regional priorities allow. Furthermore, the Trophic Status Index (TSI) thresholds associated with "poor" waters may fail to identify some waters that are not attaining designated uses. For example the TSI score for shallow lakes in "poor" condition is linked to a "major ecosystem change and once it occurs, it is very difficult to restore the aquatic plant dominated state," (at p. 23). Thus, waters in the "fair" category may be marginally impaired (i.e., given that "poor" waters are certainly impaired and 'difficult to restore'), but based on their TSI score, these waters would be considered as meeting their designated uses.
- ii. **Minimum data requirements in the Draft WisCALM appear to be difficult to meet.** For basic water quality parameters such as pH, for example, the State's minimum data requirement is to have 10 discrete samples collected on separate calendar days; for temperature, 20 discrete samples are required (Table 12, "Impairment Thresholds for Rivers and Streams"). Also, the Draft Methodology requires replicate fish and macroinvertebrate samples before attainment decisions are made (e.g., Minimum Data Requirements in Table 12). The Draft Methodology does not demonstrate how these data will be routinely collected across State waters in order to assess attainment and produce an informative and accurate 303(d) list. Region 5 is concerned that a 303(d) list produced by way of the Draft Methodology could include a consistently high number of Category 3 waters due to insufficient data. Such a list may be perceived by EPA as an incomplete assessment on the condition of State waters.

In order to address these concerns WDNR should consider an alternative monitoring and assessment structure to replace the tiered approach. An example of an alternative assessment method is a probability-based approach which utilizes fewer sites but with strong indicators

suitable to making attainment decisions on a statewide basis. This could be done in conjunction with a rotating basin approach, such as the WDNR pilot projects co-sponsored by Region 5 in the Upper Yellow River and Pecatonica watersheds that sought to develop better information for water quality management decisions. EPA would be interested in working with WDNR to explore alternative monitoring approaches that would allow routine assessment and impairment decisions.

WDNR should reevaluate its minimum data requirements in light of resources available for data collection. WDNR will likely need to adjust its minimum data requirements, devote more resources to data collection, or both, in order to assure that routine assessment and impairment decisions can be made.

- b. **Concerns About Use of Multiple Lines of Evidence.** Wisconsin's water quality standards for phosphorus contain numeric criteria to be met in surface waters (Wis. Admin. Code NR § 102.06). However, because the Draft WisCALM requires multiple lines of evidence before an attainment decision can be made, the Draft Methodology appears to be inconsistent with the water quality standards. For example, according to the Draft Methodology, chlorophyll-a data will be used to assess lakes for impairment status when phosphorus exceedences have already been demonstrated. For rivers to be listed as impaired, at least one IBI score of 'poor' is required, in addition to a phosphorus exceedence. EPA is concerned that this approach does not implement the water quality standards as they are written and will result in a 303(d) list that excludes some waters not attaining water quality standards for phosphorus.

The Draft WisCALM at page 47 indicates that a water may not be listed based on phosphorus impairments unless both total phosphorus and biological data exceed impairment thresholds. Section 303(d)(1)(A) of the CWA requires states to list waters as impaired where "any water quality standard applicable to such waters" is not attained. A decision by Wisconsin to not list a water as impaired in which the approved phosphorus criterion is exceeded would be inconsistent with Section 303(d)(1)(A) of the CWA.

- c. **Concerns about Impairment Thresholds.**

- i. Table 4 includes phosphorus impairment threshold values for lakes which are higher than the phosphorus criteria set forth in Wis. Admin. Code NR§ 102.06. Wisconsin's approved numeric criteria for phosphorus were developed to be protective of water quality, and concentrations above these criteria indicate a declining condition. However, WDNR's phosphorus impairment thresholds for lakes are indicative of waters that are already in need of restoration.

As stated in comment 1.b above, the CWA requires states to list waters as impaired where "any water quality standard applicable to such waters" is not attained. A decision by WDNR to not list a water as impaired where the approved phosphorus criterion is exceeded would be inconsistent with the CWA. Table 4 of the Draft WisCALM must therefore be revised to reflect Wisconsin's phosphorus criteria.

- ii. Region 5 is concerned about the biological thresholds proposed by WDNR for determining the attainment status of rivers and streams. It is our understanding that in developing the fish IBI thresholds, WDNR set the attainment threshold between poor and fair at the approximate median score of sites that were identified as most degraded based on non-fish measures (Table 9). It is assumed that the macroinvertebrate thresholds were set at a similar level, although threshold derivation was not detailed in the Draft Methodology. While setting the biological attainment thresholds at this level provides a high degree of confidence that aquatic life use is impaired, the cost of such high confidence is that a larger number of sites with less dramatic impairments are mischaracterized as attaining the aquatic life use. EPA is concerned that these thresholds may not protect designated uses, particularly for Fish and Aquatic Life, and therefore would not ensure meeting the CWA minimum goal of protection and propagation of fish, shellfish and wildlife, or be protective of waters that are not already disturbed.

The Draft Methodology should be revised to ensure that biological attainment thresholds for rivers and streams are set at protective levels rather than levels reflective of a degraded condition.

WDNR may wish to consider the use of the biological condition gradient model such as the one developed in conjunction with WDNR staff for cool and coldwater streams in the northern forested ecoregions of the upper Midwest. This may be helpful in evaluating the condition of the biological communities that are found in the current biological threshold condition categories (<http://www.epa.gov/bioiweb1/html/bcg.html>).

2. Other Comments

a. Chlorophyll-a thresholds

- i. WDNR can use chlorophyll *a* thresholds to determine aquatic life use impairment where total phosphorus criteria are not exceeded through implementation of Wisconsin's narrative water quality standards. We note, however, that the chlorophyll *a* thresholds in Table 4 have limited justification and appear to correlate to total phosphorus values that are higher than the numeric total phosphorus criteria.
- ii. Section 4.5 Lake Impairment Assessment: Recreational Uses. We recommend that Wisconsin either revise its chlorophyll *a* thresholds so that they are linked with total phosphorus concentrations consistent with the phosphorus numeric criteria, or provide more explanation on how chlorophyll *a* thresholds are protective of recreational uses for its various lakes categories.

b. Fish Consumption

- i. The Draft WisCALM document indicates that waters would be proposed for delisting when only the statewide *general* advisory is necessary (p. 54). In our meeting with WDNR on June 29, 2011, WDNR indicated that waters would only be removed from the 303(d) list after fish from that waterbody have been analyzed. The Draft WisCALM should be revised to reflect the procedure that WDNR plans to use and should explain how

fish tissue samples will be analyzed and what results are necessary to justify removal of the waterbody from the impaired waters list.

- ii. This section does not include assessment procedures. The Draft WisCALM should include details regarding how the impairment decisions are made. These details would include how many samples would be needed and during what time frame, and what contaminant levels would be considered. In addition the Draft WisCALM should explain how these factors correlate with a specific source of impairment, and how this would lead to a 303(d) listing decision.
 - iii. In the discussion of fish consumption use assessments for mercury, the Draft WisCALM provides a new listing criterion for mercury in gamefish. The Draft WisCALM should include a justification for having a less restrictive listing criterion for mercury in gamefish than that for panfish (at p. 54). Waters are listed as impaired where consumption advice for panfish is limited to one meal per month; waters are listed as impaired where consumption advice for gamefish is 'do not eat.' The Draft WisCALM should explain whether the different listing thresholds are the result of different biomagnification rates for game and panfish, or some other rationale.
- c. **Public Water Supply/ Public Health and Welfare**
- i. WDNR standards include language to protect public drinking water supply. The standards specifically state: "All surface waters shall be suitable for supporting public health and welfare. . . . The criteria developed pursuant to ss. NR 105.08 and 105.09 shall be met regardless of whether the surface water is used for public drinking water supply or the applicable fish and aquatic life subcategory. . . . All surface waters providing public drinking water supplies or classified as cold water or warm water sport fish communities as described in sub. (3) shall meet the taste and odor criteria specified or developed pursuant to s. NR 102.14. . . . To protect humans from being scalded, the water temperature of a discharge may not exceed 120 degrees F unless specifically authorized under provisions in subchs. V or VI of ch. NR 106." Wis. Admin. Code NR §§ 102.04(7) and 102.04(8). The Draft WisCALM should provide a discussion about how the State intends to implement the language of NR §§ 102.04(7)(a) and 102.04(8) in relation to impairment decisions. If the public health and welfare use is not currently assessed, WDNR should begin investigating, with the assistance of the Region, development of an appropriate methodology for assessing attainment of public water supply use.
 - ii. Section 6.0 of the Draft WisCALM states "WDNR hopes to create an impairment category for Public Health and Welfare Uses for the 2014 listing cycle. This category would house impairments due to Fish Consumption Advisories and Contaminated Sediments, as well as impairments due to Blue Green Algal Toxins (see Lakes Assessment chapter)" (at p. 53). WDNR should also create an impairment category for public water supply use in 2014.

d. Other topics

- i. The Draft WisCALM states that “Data from the most recent 10-year period are to be used when assessing waters” (at p. 14). However, in Section 4.2 Lake General Condition Assessment, WDNR states only the most recent 5 years of data are used when conducting assessments to make impairment determinations.
 - Please revise the Draft WisCALM to clarify for which parameters the State would seek 10 years of data and where 5 years (or other duration) would be used.
 - Where there are not 5 years of data within the recent 10 year period to assess the status of the water, EPA is concerned that a 10 year period constraint on eligible data, in conjunction with the lack of an apparent monitoring schedule for waters, may result in a consistently high number of waters being listed under Category 3 due to insufficient data.
- ii. Table 12. Impairment thresholds related to flow existed in the 2010 Draft WisCALM, but not in the 2012 version. Please explain why flow related impairments were removed, specifically, explaining if this removal weakens the assessment methodology, or protection of waters.
- iii. Please provide the rationale for the requirement that eutrophication standards for lakes need to be exceeded 2 out of 5 years before the aquatic life and recreational uses are impaired (for chlorophyll *a*, if the threshold is exceeded in 3 out of the most recent 5 years, the lake is a candidate for impairment). EPA’s nutrient criteria for Florida identify that aquatic life uses are impaired if the eutrophication criteria are exceeded more frequently than 1 out of every 3 years on average.
- iv. Table 4 (at p. 31) and Table 13 (at p. 49). The column for “Minimum Data Requirement” does not indicate how many samples are required to assess attainment using aquatic toxicity-based indicators. Instead the instructions refer to the number of taxa (8) required for toxicity testing to develop criteria. Please indicate the appropriate number of samples to evaluate attainment of the standards.
- v. The discussion of Aquatic Macrophyte Community Index and related plant metrics describes steps WDNR is taking to determine the role of plant metrics in defining impairment indicators. The Draft WisCALM states that WDNR is developing guidance in 2012 (at p. 30). Should this read 2014?
- vi. Please explain how WDNR will determine if excessive plant growth is impairing recreational use (at p. 35, third bullet)?
- vii. The Draft WisCALM defines limited aquatic life community waterbodies as requiring a DO level of 1 mg/l (at p. 39). Please clarify if this means that DO should be at least a minimum of 1 mg/l.
- viii. The discussion of contaminated sediments lacks an explanation of the methodology that will be used to make impairment determinations (See Section 6.2, at p. 55). For example, what are the minimum data requirements for listing based on contaminated sediments?

What criteria will be used to compare monitoring data to the water quality criteria identified at Wis. Admin. Code NR § 105? The Draft WisCALM should be revised to clarify how such assessments will be conducted.

- ix. Chapter 7.1 provides that “Where natural background levels of a chemical are higher than impairment thresholds (due to soil types, geology or other local factors), the water may not necessarily be considered impaired” (at p. 57). Before the State could make a determination not to list a water as impaired on the basis of site-specific factors, EPA would require a revision to the federally approved WQS, which would require EPA approval. See 40 C.F.R. § 131.21(e).
- x. The discussion of “Watch Waters” (Section 7.4, at p. 59) should be revised to include how WDNR plans to address issues such as monitoring schedules, data collection efforts, or other methods necessary to determine impairment status. Please clarify if Watch Waters are intended to be listed separately, for example, as Category 3 waters? Helpful EPA guidance on Category 3 includes the Memorandum from Suzanne Schwartz, EPA to Water Division Directors, “Information Concerning 2010 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions,” May 5, 2009, at pp. 5-6. (See <http://www.epa.gov/owow/tmdl/guidance/final52009.pdf>.)
- xi. The discussion of de-listing impaired waters (Section 7.6 at p. 60) should be revised to clarify that impairments/pollutants may also be delisted.
- xii. Section 8.0, Integrated Report Listing Categories (at p. 62). Should the reference made to Integrated Report Listing Categories be to Table 13, not Table 15?
- xiii. Section 8.0 (at p. 63). In the discussion of assessment units with multiple pollutant/impairment listings, the State should explain how it intends to track those waters where some, but not all causes of impairment have been remediated (i.e. effect of one pollutant removed but not another). This section should also explain how the State intends to address de-listing for portions of waterbodies that were listed but are no longer impaired, when remaining portions are still impaired.
- xiv. The process outlined in Appendix B for assessing streams and rivers is not clear as written. It appears there are missing or mislabeled steps and parts. It is not clear what the sequential process is for running the ‘package’ in order to analyze data for assessment and attainment decisions. It is also unclear how chemistry alone is evaluated using this assessment package. The Draft WisCALM should be revised to clarify the parts, steps and subparts of the decision making process.