STATE OF WISCONSIN
DEPARTMENT OF ADMINISTRATION
DOA-2049 (R09/2016)

DIVISION OF EXECUTIVE BUDGET AND FINANCE
101 EAST WILSON STREET, 10TH FLOOR
P.O. BOX 7864
MADISON, WI 53707-7864
FAX: (608) 267-0372

ADMINISTRATIVE RULES
Fiscal Estimate & Economic Impact Analysis

1. Type of Estimate and Analysis	2. Date
☒ Original ☐ Updated ☐ Corrected	October 11, 2022

3. Administrative Rule Chapter, Title and Number (and Clearinghouse Number if applicable)
NR 102 – Water Quality Standards For Wisconsin Surface Waters

4. Subject
Site-specific phosphorus criteria for Lac Courte Oreilles
WY-21-20

5. Fund Sources Affected	6. Chapter 20, Stats. Appropriations Affected
☐ GPR ☐ FED ☐ PRO ☐ PRS ☐ SEG ☐ SEG-S	None

7. Fiscal Effect of Implementing the Rule
☒ No Fiscal Effect ☐ Increase Existing Revenues ☐ Increase Costs ☐ Decrease Costs
☐ Indeterminate ☐ Decrease Existing Revenues ☐ Could Absorb Within Agency's Budget

8. The Rule Will Impact the Following (Check All That Apply)
☐ State's Economy ☐ Specific Businesses/Sectors
☐ Local Government Units ☐ Public Utility Rate Payers
☐ Small Businesses **(if checked, complete Attachment A)**

9. Estimate of Implementation and Compliance to Businesses, Local Governmental Units and Individuals, per s. 227.137(3)(b)(1).
$ 0

10. Would Implementation and Compliance Costs Businesses, Local Governmental Units and Individuals Be $10 Million or more Over Any 2-year Period, per s. 227.137(3)(b)(2)?
☐ Yes ☒ No

11. Policy Problem Addressed by the Rule
This rule proposes a site-specific criterion of 10 µg/L total phosphorus for Lac Courte Oreilles (LCO), a lake in Sawyer County. The lake straddles both state land and Tribal lands of the Lac Courte Oreilles Band of Lake Superior Chippewa. LCO is a state-classified Outstanding Resource Water and one of a small number of "two-story fishery" lakes in Wisconsin that support a coldwater fishery within its deep basins. Cisco and whitefish, both members of the coldwater community, are present in the three main basins of LCO. Of these two species, whitefish are the most sensitive to low oxygen levels and warm temperature.

Coldwater fish require a cold, oxygenated layer of water to survive, referred to as the oxythermal layer. Cisco and whitefish kills have occurred in the main basins of the lake due to the combination of low dissolved oxygen and warmer water temperatures, which have reduced the size of the oxythermal layer during the late summer. LCO is currently listed on the state's impaired waters list as impaired for dissolved oxygen. The department's analysis confirmed that phosphorus is one of the factors contributing to low dissolved oxygen levels. Phosphorus fuels the growth of algae and aquatic plants, and when these die their decomposition process consumes oxygen. The department quantified how phosphorus concentrations ranging from low to high affect the available oxythermal layer.

Pursuant to s. NR 102.06(7), Wis. Adm. Code, and s. 281.15, Stats., the department has the authority to develop a site-specific criterion in place of the generally applicable phosphorus criteria in s. NR 102.06, Wis. Adm. Code, if site-specific, scientifically defensible data and analysis demonstrate a different criterion is protective of the designated use of the specific surface waterbody and the site-specific criterion is no more stringent than reasonably necessary to protect the designated use. The applicable statewide phosphorus criterion for two-story fishery lakes is 15 µg/L under s. NR 102.06(4)(b)1., Wis. Adm. Code.

The department first determined the site-specific characteristics of LCO and the set of stressors that underly the need for

DIVISION OF EXECUTIVE BUDGET AND FINANCE
101 EAST WILSON STREET, 10TH FLOOR
P.O. BOX 7864
MADISON, WI 53707-7864
FAX: (608) 267-0372

ADMINISTRATIVE RULES
Fiscal Estimate & Economic Impact Analysis

a site-specific phosphorus criterion. The department then developed a model based on over thirty years of extensive data from LCO to predict how oxythermal habitat would respond to reduced phosphorus concentrations in the lake. The department's analysis demonstrated that the statewide phosphorus criterion of 15 µg/L is not sufficient to protect whitefish in LCO—a lower criterion is necessary to enable whitefish survival. After modeling how oxythermal habitat conditions are expected to respond to varying levels of phosphorus in the lake, the department's analysis confirmed that a phosphorus criterion of 10 µg/L is appropriate and necessary to increase survival during the most stressful warm periods. Further, it demonstrated that a criterion of 10 µg/L is not more stringent than reasonably necessary for attaining that protection, as concentrations above this point would not provide sufficient habitat. Achieving a criterion of 10 µg/L would also improve conditions for cisco.

12. Summary of the Businesses, Business Sectors, Associations Representing Business, Local Governmental Units, and Individuals that may be Affected by the Proposed Rule that were Contacted for Comments.

The department is pursuing this rule in response to a petition from the Courte Oreilles Lakes Association and the Lac Courte Oreilles Band of Lake Superior Chippewa. This rule may also be of interest to cranberry operators along the lake, homeowners or business owners within the watershed, and others who recreate on the lake. There will be no direct economic cost or regulatory impact on current landowners or facility operators within the watershed; however, interested businesses, organizations, local governmental units and individuals were contacted for comment on this EIA. Two general comments were received in support of the rule, though neither commented specifically on economic impact.

13. Identify the Local Governmental Units that Participated in the Development of this EIA.

Local governments were contacted to provide the opportunity to comment on this EIA as part of the EIA comment period. No comments from local governments were received.

14. Summary of Rule's Economic and Fiscal Impact on Specific Businesses, Business Sectors, Public Utility Rate Payers, Local Governmental Units and the State's Economy as a Whole (Include Implementation and Compliance Costs Expected to be Incurred)

The department does not anticipate any compliance costs related to this rule, because there are currently no point source dischargers within the lake's watershed. The phosphorus loads in the LCO watershed are all from nonpoint sources (forested or agricultural lands, cranberry bogs and septic systems at private residences), which are not under the department's regulatory authority. Because the department's authority does not extend to these sources, there will be no regulatorily required reductions of phosphorus discharges and consequently no fiscal impacts from promulgating a site-specific criterion. However, any future point source discharger to LCO would be permitted to discharge based on an effluent limit that is calculated to achieve the site-specific phosphorus criteria.

If the proposed site-specific criterion is promulgated, follow-up phosphorus reduction efforts within the watershed would continue to be voluntary on the part of any nonpoint sources. The community has been proactive in seeking voluntary reductions; however, phosphorus levels continue to increase.

The lake is already on the impaired waters list for dissolved oxygen impacts. If a criterion of 10 µg/L total phosphorus is promulgated, the lake will also be listed as impaired for phosphorus until such time the criterion of 10 µg/L is attained. Listing status does not have a direct economic effect on stakeholders. Even if a TMDL analysis or other pollutant reduction plan is developed based on a more stringent phosphorus site-specific criterion of 10 µg/L, there will be no regulatorily required reductions of phosphorus for current sources of phosphorus under such a plan because all of the current phosphorus sources are nonpoint sources.

Although an impairment listing will not result in regulatory requirements or costs, it increases the potential for local entities to secure grant funding from the department or other sources. The department provides $2.3-3.3 million annually to local communities to address lake and watershed issues through its Surface Water Grants program. These grants can

DIVISION OF EXECUTIVE BUDGET AND FINANCE
101 EAST WILSON STREET, 10TH FLOOR
P.O. BOX 7864
MADISON, WI 53707-7864
FAX: (608) 267-0372

fund a wide variety of water quality and restoration activities which can be used to enable further voluntary efforts to address this issue.

15. Benefits of Implementing the Rule and Alternative(s) to Implementing the Rule

Setting a criterion of 10 ug/L establishes a more appropriate standard than the current statewide criteria. If the criterion is attained through voluntary actions, improvements to the survival rate of whitefish are expected, although addressing phosphorus alone cannot result in optimal whitefish habitat as fish kills are still expected to occur periodically during very warm years. Reductions in phosphorus are also expected to improve habitat for cisco, another coldwater species in the lake that is more resilient. Greater stability of the coldwater fishery would provide a benefit environmentally and to the communities surrounding the lake, which depend on high-quality natural resources as an important part of their economic livelihood (e.g. tourism and real estate values).

An alternative is to retain the statewide criterion of 15 ug/L, but analyses show that 15 ug/L does not support the whitefish population. Other alternatives include proposing a different criterion value than 10 ug/L. The department's analysis found that a criterion of 10 ug/L total phosphorus is necessary to enable survival of whitefish within the lake and is no more stringent than necessary to support the designated use.

16. Long Range Implications of Implementing the Rule

Long-range implications depend in part upon whether voluntary actions are taken to achieve a lower phosphorus concentration. In turn, they also depend on the level of habitat improvement that is experienced with lower phosphorus concentrations. In the long term, a more stable two-story fishery would be of benefit to the local community and regional resource-based economic interests.

17. Compare With Approaches Being Used by Federal Government

The Federal water quality standards regulation at 40 CFR 131.11(b)(1)(ii) provides states with the opportunity to adopt water quality criteria that are "modified to reflect site-specific conditions." Wisconsin has used this authority, as well as the authority under s. 281.15, Stats., to promulgate existing numeric phosphorus site-specific criteria and related narrative language in s. NR 102.06(7), Wis. Adm. Code. The portions of 40 CFR 131 related to establishing water quality standards include:

- 40 CFR 131 Subparts A-C: Requirements for establishing state water quality standards.
- 40 CFR 131.4: States are responsible for establishing and revising water quality standards. The U.S. Environmental Protection Agency (U.S. EPA) approves or disapproves standards under 40 CFR s. 131.5.
- 40 CFR 131.6: Water quality standards consist of designated uses and criteria to protect the designated uses.
- 40 CFR 131.11: States must adopt water quality criteria that protect designated uses. For waters with multiple uses, the criteria must protect the most sensitive use. 40 CFR 131.11(b)(1)(ii) authorizes states to adopt numeric water quality criteria that are "modified to reflect site-specific conditions."
- 40 CFR 131.20: Revision of state water quality standards is subject to public participation procedures and U.S. EPA review and approval under 40 CFR 131.20.

18. Compare With Approaches Being Used by Neighboring States (Illinois, Iowa, Michigan and Minnesota)

Wisconsin has numeric phosphorus criteria for lakes, reservoirs, rivers, streams, and impounded flowing waters. Wisconsin's phosphorus criteria for lakes and reservoirs vary by lake type with values ranging from 15 to 40 µg/L. Wisconsin statutes provide authority to develop site-specific criteria, and s. NR 102.06(7), Wis. Adm. Code, recognizes that site-specific criteria may be developed for phosphorus.

Similarly, Minnesota has adopted phosphorus criteria for lakes, reservoirs, rivers and streams. Minnesota's phosphorus criteria for lakes and reservoirs vary by ecoregion with values ranging from 12 to 90 µg/L. Minnesota allows specific

DIVISION OF EXECUTIVE BUDGET AND FINANCE
101 EAST WILSON STREET, 10TH FLOOR
P.O. BOX 7864
MADISON, WI 53707-7864
FAX: (608) 267-0372

ADMINISTRATIVE RULES
Fiscal Estimate & Economic Impact Analysis

water quality standards, referred to as site-specific criteria in Wisconsin, to be adopted if information is available to derive standards based on a waterbody's specific characteristics. This process is outlined in Minn. R. 7050.0220, 7050.0222, and 7052.0270. Site-specific standards must maintain and protect a waterbody's beneficial uses. Several site-specific phosphorus criteria have been approved in Minnesota.

Illinois has adopted partial phosphorus criteria for lakes and reservoirs. Illinois' phosphorus criteria for any lake or reservoir greater than 20 acres is set at 50 µg/L. Illinois does not have provisions for site-specific criteria.

Iowa and Michigan do not have statewide numeric phosphorus criteria. However, Michigan widely applies a method to derive appropriate site-specific phosphorus targets for waterbodies in the state. The targets set by Michigan and Ohio are applied in permits and Total Maximum Daily Load (TMDL) analyses.

Wisconsin, Minnesota, and Michigan are the main states in U.S. EPA Region 5 that have two-story fishery lakes supporting coldwater fish. Wisconsin's phosphorus criterion for two-story fishery lakes with cisco, whitefish, or lake or stream trout is 15 µg/L. Minnesota has a specified criterion for lakes with lake trout (the most sensitive species) of 12 µg/L, and for lakes with stream trout of 20 µg/L. Minnesota does not specify separate criteria for lakes with cisco or whitefish, although it is considering doing so in the future. Under current Minnesota standards, a lake such as Lac Courte Oreilles, which does not have lake or stream trout, would have a phosphorus criterion of either 30 or 40 µg/L under Minn. R. 7050.0222 (3) and (4). Therefore, Wisconsin's statewide phosphorus criterion of 15 µg/L for two-story fishery lakes and the proposed site-specific criterion of 10 ug/L for LCO are both more stringent than Minnesota's comparable criteria of 30-40 µg/L for non-trout lakes. Michigan does not have phosphorus targets specific to lakes with coldwater fish.

19. Contact Name	20. Contact Phone Number
Kristi Minahan	(608) 266-7055

This document can be made available in alternate formats to individuals with disabilities upon request.