BUREAU OF WATER QUALITY
WATER EVALUATION SECTION

2025-2027 TRIENNIAL STANDARDS REVIEW (TSR) PRIORITIES FOR THE WATER QUALITY STANDARDS PROGRAM

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Date

Triennial Standards Review:
Priorities for the Water Quality Standards Program List for 2025-2027 Cycle

Background

Every three years, the Department of Natural Resources (DNR) reviews Wisconsin's water quality standards or related guidance to determine which standards need development or revision, as required by the federal Clean Water Act. This comprehensive evaluation, called the Triennial Standards Review (TSR), is an essential process to keep Wisconsin's surface waters swimmable, fishable, and drinkable.

TSR Purpose

This review helps DNR staff focus efforts to integrate the latest science, technology, and federal requirements into how the state regulates water quality. In addition, the review assists the staff with work-planning and identifying needed actions for moving projects forward.

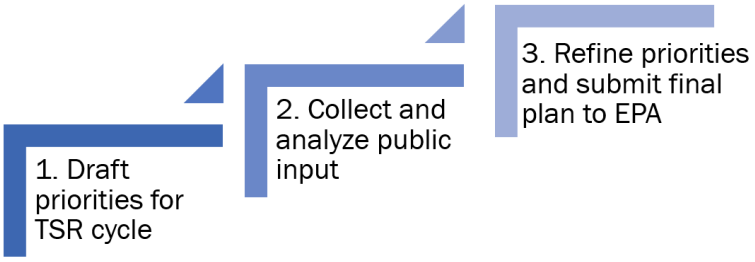
Water quality standards (WQS) set the appropriate level of protection for Wisconsin's lakes, rivers, and streams. Components of water quality standards reviewed as part of the Triennial Standards Review include the following:

- designated uses – goals and expectations established for each waterbody
- water quality criteria – narrative and numeric benchmarks established to protect the designated uses
- antidegradation – policy or procedure established to protect high-quality waters
- water quality variances – short-term changes to permit limits or water quality standards when criteria are unattainable.

The State of Wisconsin’s TSR helps DNR to identify what will be worked on. It is not possible to review, develop, or revise all WQS and related guidance due to the large number of WQS and limited staff and funding.

TSR Process

<u>Streamlined process this cycle</u>
This cycle, the DNR is employing a more streamlined process than in the past few cycles. Comments were sought using the more traditional approach via a standard public comment period and public hearing, consistent with state and federal law. In previous TSR cycles, program staff used a multi-step process that included an online survey for the public to rank topics. The water quality program evaluated the value this additional step added to the process and determined that to make the best use of limited staff resources this step was not feasible for this cycle. The graphic below illustrates the main steps of this cycles TSR process.



The graphic below depicts the overlap of water quality standards work between TSR cycles over time. The process for any given topic potentially includes an Advisory Committee, coordination with the United States Environmental Protection Agency (EPA), and legal and administrative approval. Any changes to water quality standards include public hearings. If rulemaking is needed, all requirements for the administrative rulemaking process will be followed.

TSR and the Tribal Reserved Rights Rule

Wisconsin DNR solicited and considered information from Tribes about reserved rights held by Tribes in Wisconsin consistent with the Tribal Reserved Rights Rule (40 CFR 131.9). As defined in the rule, "tribal reserved rights" are any rights to Clean Water Act-protected aquatic and/or aquatic-dependent resources reserved by right holders, either expressly or implicitly, through Federal treaties, statutes, or Executive Orders. This review includes evaluation of whether there is any new information available about Tribal reserved rights applicable to State waters that needs to be considered to establish water quality standards consistent with 40 CFR 131.9.

An assertion of rights was made by 11 Ojibwe Tribes, facilitated by the Great Lakes Indian Fish and Wildlife Commission (GLIFWC). Although the assertion emphasizes the consideration of all treaty reserved rights in the ceded territories of 1837 and 1842, the Tribes have identified unsuppressed fish consumption and wild rice protection as the highest priority issues for this TSR cycle. DNR met with GLIFWC, Tribal staff, and EPA to consider the implications of the assertion and adjusted two TSR work plan topics to reflect these discussions. The first change is a wording adjustment to indicate the consideration of fish consumption rates reflective of tribal consumers before initiating rulemaking for the human health criteria revisions/development. The second change elevated work on sulfate to a category B priority for the exploration of existing data and evaluating data needs for possible criteria development. Discussions are ongoing and DNR intends to continue working with GLIFWC and Tribal staff on these two topics.

It is important to reiterate that Wisconsin's TSR is solely a work plan regarding water quality standards revisions. Reprioritization of topics may happen over time due to factors such as staff capacity, available data, emerging needs, or legislative/administrative directives. The actual

process of adopting standards will include consultation with Tribes along with the engagement of all stakeholders. Tribal rights will be considered throughout the stages of standards development/revisions, rulemaking, and implementation.

Public comment period

The DNR's Water Quality Standards program compiled a draft list of topics for consideration for the 2025-2027 TSR cycle. A 52-day public comment period occurred from May 29, 2024, to July 26, 2024 to receive feedback from the public and partners on the draft list of topics and the categories the topics were initially assigned to. A brief description of each topic was provided. A public hearing was held on July 17, 2024 in order to provide additional information on the topics and to receive verbal comments. Separate, formal notification was sent to Tribes on July 11, 2024 granting additional time to submit comments until August 9, 2024.

In addition to the statutorily required public notices and posting of materials, email notification was sent to the following distribution lists:

- Water Quality Standards & Assessments GovDelivery List (7043 subscribers)
- DNR and U.S. EPA staff

The hearing had a total of 46 attendees (not counting DNR hearing staff); 6 of these registered as a representative of an organization. Three individuals provided verbal comments at the hearing. The DNR received 22 emails and/or comment letters, representing a total of 3 Tribes or Tribal agencies, 6 individuals, 12 environmental organizations, and 2 industry groups.

After considering all comments, the DNR made two changes to the prioritized list. *Antidegradation implementation guidance* was moved from Category B to Category A because it is tied so closely to the Antidegradation rulemaking that is in Category A. In the draft list *Sulfate criteria development* was listed in Category C, but upon discussion with Tribal representatives, it was moved to Category B and renamed *Sulfate data exploration.* See the 'Response to Comments' document included in the appendix for responses to all comments.

<u>Efforts on Variances and Designated Uses for this cycle</u>
The DNR received a few comments related to individual variances or the phosphorus multi-discharger variance (MDV). DNR staff reviewed these comments and concluded that they did not contain new technical information that would lead to a review of individual variances or the phosphorus MDV, although the person commenting on the MDV was invited to share any more detailed information with the DNR's MDV staff. The MDV is under review at this time and if any revisions are determined to be necessary, the program will work on that effort during this TSR cycle.

A few comments were also received related to designated uses for certain individual waterbodies. All but one of these waters were already on the DNR's list of waters to update when the ch. NR 104, Adm. Code, is opened for revision. One of the waters was not previously under consideration and was added to the list for consideration.

Prioritization Categories for 2025-2027

Topics for work during 2025-2027 have been categorized into the prioritization categories A through C, as follows. Descriptions of each topic are below the bulleted list.

Category A: Priorities for upcoming cycle - Preliminary work is in progress

- Antidegradation Rule Revisions and Implementation Guidance
- Human Health Criteria Revision/Development
- Biological Thresholds for Streams & Rivers
- Designated Uses Structure/Process Revisions

Category B: Priorities for further exploratory work as time/resources allow

- Cyanobacteria (Harmful Algal Blooms) Guidance
- Nitrogen-related topics (any of the following)
    - Total Nitrogen Criteria Development
    - Nitrate (Aquatic Life Toxicity) Criteria Development
    - Ammonia Criteria Revision
- PFAS Compounds (other than PFOS and PFOA) Criteria Development
- Neonicotinoid Insecticides Criteria Development
- Sulfate Criteria Data Exploration

Category C: Not priorities for this cycle

- Aluminum Criteria Development
- Aquatic Life Water Quality Criteria Revision/Development
- Bifenthrin Criteria Development
- Chlorantraniliprole Criteria Development
- Copper Criteria Revision
- Outstanding/Exceptional Resource Waters Process Revision (guidance)
- Microplastics Criteria Development
- Pharmaceuticals Criteria Development
- Total Suspended Solids Criteria Development

CATEGORY A: PRIORITIES FOR UPCOMING CYCLE – PRELIMINARY WORK IS IN PROGRESS

Antidegradation Rule Revisions

Updates to the state's antidegradation policy and associated procedures have been needed to clarify when antidegradation review is required and to make Wisconsin's rules consistent with federal antidegradation requirements. A Scope Statement was approved by the Governor's office in May 2021 to begin work on this rule. From 2021-2023, an internal workgroup was convened, and the following steps were completed: draft rule development, external Advisory Committee meetings, Economic Impact Analysis development, public hearing and comment period, and final rule development. The Natural Resources Board adopted the rule package in September 2023, and it was submitted to the Legislature for their consideration in late 2023. As part of the Legislative review process, germane modifications were requested and the DNR is currently working on making final revisions before resubmitting the final rule to the Natural Resources Board and the Legislature.

Antidegradation Implementation Guidance

After the Antidegradation Rule is promulgated, implementation guidance will likely be necessary. This is time-sensitive and should be completed in the near-term. With the rule's 6-month delay in the effective date following promulgation, it is roughly estimated that the rule would become effective by the end of 2025. Guidance may be needed for both the wastewater and storm water programs. Furthermore, the DNR recognizes the need for implementation guidance for the existing antidegradation rule and work is underway to draft initial guidance that may be tailored to the proposed rule when promulgated.

Human Health Criteria Revision/Development

DNR has reviewed EPA's 2015 recommendations on how states should calculate human health criteria (HHC) – i.e., water quality standards that protect human health while swimming or eating locally-caught fish. DNR identified multiple efforts that were/are needed to update our standards, including: 1) making updates to Wisconsin's existing HHC based on the latest toxicological information, 2) adopting HHC for chemicals for which EPA has surface water or drinking water criteria and Wisconsin does not, 3) evaluating the most appropriate fish consumption rates to be protective of all state and tribal fish consumers, and 4) updating the water consumption rate and average body weight used in criteria derivation to be representative of Wisconsin residents' demographics and behaviors

DNR has completed background work on efforts 1) and 2) above. In pursuit of effort 3), DNR is collaborating with staff from other Great Lakes states, the Great Lakes Indian Fish and Wildlife Commission (GLIFWC), and EPA to review fish consumption rate information as it relates to tribal populations and is working towards compiling a white paper detailing this data for potential use in future criteria. DNR also recognizes that there may be updated information related to non-tribal consumers and will take that into consideration if updates are proposed for this exposure factor. For item 4), DNR will work with the Department of Health Services (DHS) to gather water consumption rate information and body weight data. Rulemaking for some human health criteria revisions and/or development is anticipated during this TSR cycle.

Biological Thresholds for Streams & Rivers

DNR is updating its biological assessment tools for streams and rivers. This work began as part of the Waterbody Assessment rule package promulgated in 2022, which initially covered both flowing waters and lakes. However, although that rule promulgated bioassessment metrics for lakes, the process identified a need for further revisions to the stream fish assessment tools. DNR is nearing completion of its revisions to its fish indices of biotic integrity (IBIs), and once complete, expects to initiate rulemaking to codify the Fish IBIs as well as existing Macroinvertebrate IBIs (for aquatic insect) for streams and rivers. The fish IBI updates were needed because over the past several decades, the DNR has developed several Fish IBIs for use in different stream types; however, these were developed using different methods and different scoring scales. These revisions better align the IBIs with one another, using consistent, EPA-recommended methods and a much larger dataset for the IBI development and testing.

Designated Uses Structure/Process Revision

Under the Clean Water Act, DNR assigns all waterbodies a set of designated uses to establish the appropriate water quality goals for the waterbody. DNR is considering developing a new

Scope Statement to re-start work on updating the state's designated use classification system for aquatic life and the list of waters assigned "limited" uses. This rule package would revise the categories to better capture the various types of waterbodies and aquatic communities found in Wisconsin. The work could include consideration of a designated use for waters supporting wild rice. The package may also update designated uses for certain individual waterbodies. Significant progress was made on this rule during earlier rulemaking efforts (put on hold when the Scope Statement expired in 2019), including preparation of draft rule language and discussion with an Advisory Committee. Further exploratory work was done during the 2021-2023 cycle but DNR has not yet developed a new Scope Statement for this project.

CATEGORY B: PRIORITIES FOR FURTHER EXPLORATORY WORK AS TIME/RESOURCES ALLOW

Cyanobacterial (Harmful Algal Blooms) Guidance

EPA released human health recreational ambient water quality criteria or swimming advisory values for microcystin and cylindrospermopsin in May 2019. The criteria are for use as the basis for swimming advisories for notification purposes and are designed to protect children from the harmful effects of chronic exposure to microcystin and cylindrospermopsin. States may apply the recommendations as advisory levels or may adopt them as state water quality standards.

DNR previously completed a review of EPA's recommendations and determined to apply the values as swimming advisories rather than as statewide criteria. This decision was made because cyanobacterial harmful algal blooms that produce cyanobacterial toxins are often a response to or correlated with other water quality impairments/issues for which criteria already exist or are potentially forthcoming (i.e., phosphorus, nitrogen, chlorophyll). DNR recommends that local and tribal public health agencies use these swimming advisories for notification purposes in recreational waters to protect the public. In the upcoming cycle, DNR plans to develop guidance to assist with implementation of these recommendations.

Nitrate/Nitrogen Criteria Development

The EPA water quality criteria guidance requires all states to develop nitrogen criteria as well as phosphorus criteria. Nitrogen/nitrate criteria development was ranked as the highest priority topic in the 2021-2023 TSR. In 2022, DNR convened an internal workgroup to review the status of existing data in Wisconsin for various forms of nitrogen and related biological endpoints. The workgroups identified current gaps in DNR's monitoring program for various waterbody types and other next steps that would be needed to move the state closer to readiness for nitrogen criteria development. It also conducted a review of nitrogen criteria established by other states. Following these recommendations, in summer 2023, DNR and EPA Region 5 staff developed two projects for EPA's N-STEPS program, which provides technical assistance to states for exploring nutrient data. These projects focus on inland lakes and large rivers (described further below). Work on these projects began in 2024 and will continue into 2025.

During the 2025-2027 cycle, DNR expects to continue background exploratory work on some of the following nitrogen-related topics. The DNR will also explore best practices for implementation of water quality criteria, while taking a holistic approach in evaluating how treating for one form of nitrogen may affect concentrations of other forms.

- **Total Nitrogen (TN) criteria development for eutrophication (Aquatic Life criteria)**
  The main concern with excess bioavailable nitrogen in aquatic systems is nitrogen's role in eutrophication. The ecological effects of eutrophication often manifest as low dissolved oxygen (DO) levels and excessive algal growth.
    - ***TN for Lakes:*** Staff have done preliminary data review and currently have a project proposal submitted to EPA's N-STEPS program to explore TN criteria for inland lakes. This project will explore how EPA's national nutrient model for lakes (2021) may work with Wisconsin's lake data and existing lake type categories.
    - ***TN for Mississippi River:*** There have been several studies on effects of TN and biological endpoints like aquatic plants, duckweed, and fish, which could provide the basis for recommended TN values for the Mississippi River.
    - ***TN for Other Large Rivers:*** Staff have done preliminary work gathering data and currently have a project proposal submitted to EPA's N-STEPS program to explore correlations between TN, chl-a, and other biological endpoints, and explore levels of TN that would be protective for large rivers.
    - ***TN for Wadeable Streams:*** More stream monitoring will be done to fill data gaps on TN and relevant biological endpoints in streams.
- **Nitrate criteria development-Aquatic Toxicity (Aquatic Life criteria)**
  Nitrate causes toxicity to aquatic life by reducing oxygen transport by an organism's blood. Data review indicates that sufficient data are available to consider criteria development.
- **Ammonia criteria revision (Aquatic Life)**
  EPA has proposed revised criteria for ammonia based on protection of mussels. This is an important environmental issue, and mussels are in most waters in the state. Technical information is largely available, but work may need to be done to determine if there are some non-mussel waters where a revised criteria would not apply. Furthermore, criteria have not been actively pursued due to potential implementation challenges.

Per- and polyfluoroalkyl Substances (PFAS, other than PFOS and PFOA) Criteria Development:

In 2022 DNR promulgated water quality criteria for two compounds within the broad category of PFAS—PFOS and PFOA—to protect human health. The toxicity and occurrence of other PFAS compounds are under active evaluation by EPA, DHS, and other divisions within DNR. These manmade substances have been used to repel oil and water in a variety of industrial and consumer products, such as carpet and clothing treatments, food packaging, and cookware. They are also contained in firefighting foams. They are extremely persistent in the environment and bioaccumulate in humans and wildlife. Health-based advisories, criteria, and screening levels for other PFAS compounds have been developed by other states. Addressing potential public health risks from sites contaminated with PFAS is an ongoing priority for DNR, and criteria for other PFAS compounds would be helpful in assessing risk to human health. If sufficient data are available to develop criteria for other PFAS compounds, criteria development may be undertaken as resources allow.

Neonicotinoid Insecticides

Agricultural use of neonicotinoid insecticides like clothianidin, imidacloprid, and thiamethoxam has been implicated in global reductions in pollinator populations and they are known to be similarly toxic to aquatic invertebrates. EPA's Office of Pesticide Programs (OPP) released revised aquatic life benchmarks for aquatic invertebrates for clothianidin and

imidacloprid in 2016 and thiamethoxam in 2017. Although aquatic life benchmarks are not water quality criteria, the data contained within OPP's risk assessments undergo rigorous peer-review and can be used to develop water quality criteria for the protection of aquatic life. In the previous TSR cycle, staff began reviewing OPP's aquatic life benchmark data and other available toxicity data to determine whether developing surface water thresholds or criteria to protect aquatic life would be beneficial. Work on this topic is expected to continue, as neonicotinoids are used extensively in Wisconsin agriculture and have been detected with increasing frequency in groundwater and surface water, particularly in the Central Sands region of the state. It is deemed to be a priority for further exploratory work because of its widespread use and pervasiveness in the environment, impacts to aquatic insects, and availability of national and local research.

Sulfate Data Investigation

Wild rice (Zizania sp.) is a critically important natural resource, particularly to Native American Tribes who depend on it for subsistence and whose lifeway and history are inseparable from the traditions of harvesting and consuming this food. It is also a key food source for wildlife. Wild rice seedling emergence, seedling survival, biomass, growth, viable seed production, and seed mass have been shown to be negatively correlated with sulfate concentrations in water. Development of water quality criteria for sulfates may support the preservation and restoration of wild rice in Wisconsin. In 2021, DNR completed a multi-year Strategic Analysis of Wild Rice Management, which outlines considerations related to development of a Wild Rice Designated Use and/or sulfate criteria in section 7.2.6. These topics may also be considered as part of the ongoing development of the Wild Rice Management Plan, which will "establish specific goals, objectives, and strategies for northern and southern wild rice management throughout all of Wisconsin." In addition to the longstanding Joint State/Tribal Wild Rice Management Committee and DNR's Wild Rice Advisory Committee, the DNR has now hired a Wild Rice and Habitat Coordinator for the St. Louis Estuary. The Water Quality Standards program plans to continue to participate in discussions around these topics as needed to determine the best course forward.

DNR and Tribal partners have identified opportunities for data sharing regarding sulfate discharges, surface water monitoring, and research on the effects of sulfate on wild rice. The investigation of these data is a necessary first step to better understand the interrelationships between sulfate concentrations and wild rice population dynamics that are specific to Wisconsin wild rice waterbodies. This also includes exploratory work to distinguish between anthropogenic and natural sources of sulfate in wild rice waterbodies, which could impact decisions about management and possible future sulfate criteria.

CATEGORY C: NOT PRIORITIES FOR THIS CYCLE

Aluminum Criteria Development

In December 2018, EPA published national recommended ambient water quality criteria for the protection of aquatic life from the toxic effects of aluminum. The 2018 criteria incorporate more recent toxicity studies conducted since the previous recommended criteria published in 1988. EPA's 2018 recommended criteria for total recoverable aluminum are equation-based and account for the effects of pH, hardness and dissolved organic carbon on aluminum toxicity. EPA has also developed a draft technical support document on

implementation of these criteria. Wisconsin's water quality standards currently do not include aluminum criteria to protect aquatic life. This has been ranked as a low priority in the past, as it is not a pollutant of particular concern for DNR's permit program.

Aquatic Life Water Quality Criteria Revision/Development

This topic could have two separate components: A) Develop water quality criteria for the protection of aquatic life for substances for which EPA has developed or revised criteria based on new toxicological data but for which there is currently no Wisconsin standard. Topics that could be considered include acrolein, carbaryl, diazinon, nonylphenol, and tributyltin. B) Revise existing Wisconsin water quality criteria for the protection of aquatic life for substances for which EPA has new toxicological data. Topics that could be considered include cadmium and selenium. [Note: Individual substances that are listed as stand-alone topics (i.e., aluminum, ammonia, copper) could also fall under this category.] DNR has prioritized development/updating of Human Health Criteria (for which background work has already been completed) before undertaking the Aquatic Life Criteria process.

Bifenthrin Criteria Development

Recent research has suggested that the pesticide bifenthrin is contributing to reduced macroinvertebrate numbers and species richness in Midwestern waters. For example, the Mississippi River is experiencing a decline in the population of burrowing mayflies, which has important implications for ecosystem health due to their importance as a food source for fish and wildlife. Bifenthrin use continues to increase in Wisconsin and the Midwest. DNR plans to first focus efforts on development of criteria for neonicotinoid insecticides before considering whether there is enough available data to develop criteria for other insecticides like bifenthrin and chlorantraniliprole (below).

Chlorantraniliprole Criteria Development

Chlorantraniliprole is an insecticide used on agricultural crops, turf grass and in lawn and landscape products and applications. In EPA's Office of Pesticide Programs' ecological risk assessment for chlorantraniliprole, risks to freshwater invertebrates from chronic exposure were identified. Chlorantraniliprole has been detected in numerous groundwater samples in sandy irrigated agricultural areas and in stream water samples collected by the Department of Agriculture, Trade, and Consumer Protection. DNR plans to first focus efforts on development of criteria for neonicotinoid insecticides before considering whether there is enough available data to develop criteria for other insecticides like bifenthrin (above) and chlorantraniliprole.

Copper Criteria Revision

EPA recommends that states use the Biotic Ligand Model (BLM) for calculating site-specific criteria for copper. The BLM characterizes the impacts of local water conditions on copper bioavailability by incorporating additional water conditions (e.g., temperature, pH, DOC, alkalinity) as inputs within the model and mechanistically modeling their impacts on bioavailability. A limited pilot study of this model has been done using Wisconsin data, but further study would likely be needed to determine the feasibility of using this model to calculate criteria, given its extensive data requirements. New methods for combining multiple linear regressions with the BLM (similar to regressions used with aluminum) have recently become available and may warrant further investigation. This topic has been a low priority due to the substantial data needs required to apply the BLM, coupled with the small

number of facilities whose Wisconsin Pollutant Discharge Elimination System permits contain copper limits.

Outstanding/Exceptional Resource Waters Process Revision

Federal law requires states to identify and protect "High Quality Waters." In Wisconsin, these waters are referred to as Outstanding or Exceptional Resource Waters (ORW/ERWs) and are enumerated in ss. NR 102.10 and NR 102.11, Wis. Adm. Code, respectively. The DNR's existing guidance on classifying waters as ORW/ERW is outdated, and these methods should be updated so that the process is clear and based on current scientific understanding. Although DNR had expected to address this topic during previous TSR cycles, staff time has been prioritized toward other rulemaking needs, such as the Antidegradation rule and Bioassessments rule. Continued vacancies limit the staff time expected to be available to work on this project in the upcoming cycle.

Microplastics Criteria Development

Microplastics are pieces of synthetic materials or small manufactured plastic particles comprised of polyethylene, polypropylene, polyvinyl chloride, polystyrene, and polyethylene terephthalate that are <5 mm in size. Microplastics have been studied in the Great Lakes and some Wisconsin rivers, and likely occur in waterbodies throughout the state. Research from entities outside of the DNR cites evidence of ingestion of microplastics by wildlife with implications for physical harm and possible food chain transport. If additional data on microplastics for Wisconsin waterbodies and information about harmful levels for organisms become available, exploratory work toward potential criteria development for protection of human health, aquatic life, or wildlife may be included for work plans in future TSR cycles.

Pharmaceuticals Criteria Development

Pharmaceutical byproducts and personal care products (PPCPs) have been found throughout the Great Lakes. Existing research illustrates that these products are a cause for concern as they have been linked to several problems such as intersex fish. Developing water quality standards for pharmaceuticals and their byproducts would be proactive and protective of humans and wildlife. Although DNR recognizes that PPCPs in Wisconsin waters is of potential concern, this is a very broad topic and there is not yet enough information available on the toxic effects and/or prevalence of individual PPCPs or classes of PPCPs to begin work. DNR now has an Office of Emerging Contaminants, which stays abreast of scientific literature around such topics. If more information about individual PPCPs or classes of PPCPs becomes available, this topic may become a higher priority in future TSR cycles.

Total Suspended Solids (TSS) Criteria Development

In 2022, DNR convened an internal workgroup to review existing data in Wisconsin for total suspended solids and related parameters. The workgroup identified the level of data available for various waterbody types and began exploring topics around data, criteria, and implementation. It also conducted a review of criteria for TSS and related parameters established by other states. This project was put on hold in late 2022 due to program vacancies that led to Water Quality Standards staff time being redirected to other topic items (primarily, completing the Antidegradation rule). Due to ongoing vacancies and prioritizing nitrogen exploration, further work on TSS is not a high priority at this time but some work may continue as resources allow.

APPENDIX

Comments and DNR Responses
Triennial Standards Review 2025-2027
January 22, 2025

This document presents a summary of public comments received on the State of Wisconsin's Triennial Standards Review for years 2025-2027. Responses from the Department of Natural Resources (DNR, sometimes referred to by commenters as WDNR or department) are provided below.

OVERVIEW

Every three years, the DNR reviews Wisconsin's water quality standards or related guidance to determine which standards need development or revision, as required by the federal Clean Water Act. This comprehensive evaluation, called the Triennial Standards Review (TSR), is an essential process to keep Wisconsin's surface waters swimmable, fishable and drinkable.

This review helps DNR staff focus efforts to integrate the latest science, technology and federal requirements into how the state regulates water quality. In addition, the review assists the staff with work-planning and identifying needed actions for moving projects forward. Water quality standards act as guidelines for setting an appropriate level of protection for Wisconsin's lakes, rivers and streams

DIRECT OUTREACH TO TRIBES REGARDING TRIBAL RESERVED RIGHTS

Individual letters were mailed electronically to Tribal leaders of the eleven federally recognized tribes in Wisconsin on July 11, 2024. These notifications cited 40 CFR 131.20, that discusses "tribal reserved rights" defined as any rights to Clean Water Act- protected aquatic and/or aquatic-dependent resources reserved by right holders, either expressly or implicitly, through Federal treaties, statutes, or Executive Orders. The letters encouraged tribes to share information related to these rights applicable to Wisconsin waters for consideration during the proposed TSR cycle.

PUBLIC COMMENTS ON THE TRIENNIAL STANDARDS REVIEW

A 52-day public comment period occurred from May 29, 2024, to July 26, 2024, with a public hearing on July 17, 2024. Separate, formal notification was sent to Tribes on July 11, 2024 granting additional time to submit comments until August 9, 2024. The DNR received 22 emails and/or comment letters, representing a total of 3 Tribes or Tribal agencies, 6 individuals, 12 environmental organizations, and 2 industry groups.

The hearing had a total of 46 attendees (not counting DNR hearing staff); 6 of these registered as a representative of an organization.

The public was asked for comments on whether they agreed with the Department's draft prioritization of topics into categories A, B, and C, and whether updates/revisions were needed for any of the following:

- The phosphorus multi-discharger variance
- Any other variances for individual substances or facilities
- Designated uses for individual waterbodies.

COMMENTS ABOUT THE TRIENNIAL STANDARDS REVIEW PROCESS

DNR received some comments about the way it conducts its TSR. One commenter discussed Tribal Reserved Rights and DNR's obligation to formally engage with Tribes when developing or revising water quality standards that impact waters in ceded territories. DNR conducted direct outreach to Tribes during the TSR cycle and has followed up based on comments from Tribes that were received.

Another commenter indicated that DNR should revert to a higher level of stakeholder engagement during the next TSR cycle in contrast to how this cycle's comment period was conducted.

REVIEW OF CATEGORIES AND PRIORITIZATION

The table below is a review of the topics and prioritization categories that were included in the draft work plan. *Italicized text* indicates topics that have been moved to a different category as a response to comments received.

Category A: Priorities	**Category B: Exploratory**	**Category C: Not priorities**
Antidegradation rule revision	*Sulfate Data Exploration***	Aluminum criteria development
*Antidegradation Implementation Guidance**	Cyanobacterial (Harmful Algal Blooms) Guidance	Copper criteria revision
Human health criteria	Nitrate/Nitrogen Criteria Development	Aquatic life water quality criteria revision/development
Biological thresholds for streams and rivers	Additional PFAS Criteria Development	Bifenthrin and Chlorantraniliprole criteria development
Designated Uses/ Structure/Process Revision	Neonicotinoid Insecticides	Pharmaceuticals criteria development
		Microplastics criteria development
		Outstanding/Exceptional Resources Waters Process Revision
		Total suspended solids (TSS) criteria development

*****moved from Category B to Category A*

***moved from Category C to Category B and renamed*

RESPONSES TO COMMENTS

Responses to comments are organized in the order that they are listed in the table above. If no comments were received about a topic, then no additional information will be included below. Comments outside of the scope of the TSR are discussed in the next section.

Category A: Priorities

Antidegradation Rule Revision and *Implementation Guidance*

DNR received one comment indicating that Antidegradation implementation guidance should be moved to a Category A priority as the Antidegradation Rule process continues and will likely be promulgated soon. DNR agrees and has adjusted the work plan to reflect the prioritization of implementation guidance to work in tandem with rule revision. Even if a new rule is not promulgated, guidance is needed to improve understanding of implementation of the existing antidegradation rule.

Human Health Criteria Revisions/Development

Multiple comments were received about this topic from agencies and Tribes. The common thread between the comments was to update fish consumption rates as part of the rule-making package, although the suggested approaches varied widely. DNR is considering whether to include updating the fish consumption rate exposure factor, and updates to other exposure factors like drinking water intake and body weight and is evaluating the best path forward for rule-making efforts during this TSR cycle.

Additionally, comments were received regarding the use of alternative risk assessment methods that differ from those used by EPA in its 2015 criteria updates. Exploratory work about these methods will occur.

Designated Uses/Structure/Process Revision

This topic will remain in category A as efforts are ongoing to update classifications within the fish and aquatic life use category. However, many comments were received from agencies and Tribes encouraging DNR to establish a designated use for wild rice. The recent passage of the Tribal Reserved Rights Rule by EPA in April of 2024 (link to rule) was referenced by all Tribes that submitted comments and planning efforts in collaboration with the Tribes regarding wild rice and fish consumption protection is underway.

Category B: Exploratory

Sulfate Data Exploration

Several comments were received about sulfate criteria development in conjunction with a wild rice designated use, as sulfate levels are a known factor impacting the health of wild rice. Tribes recommended establishing a criterion of 10 ug/L sulfate, which would be consistent with many Tribes' water quality criteria. DNR has responded to the comments and a Tribal Reserved Rights assertion regarding sulfate criteria development, by elevating it from Category C: *Not Prioritized* to Category B: *Exploratory* and renaming the topic "Sulfate Data Exploration."

Cyanobacterial (Harmful Algal Blooms) Guidance

Although DNR's work plan indicated intentions to provide guidance for Cyanobacteria, also known as harmful algal blooms (HABs), one comment indicated criteria should be developed in place of swimming advisories to ensure additional monitoring.

As reported in the 2020 Triennial Standards Review Status Report, "The DNR completed a review of the EPA's recommendations and determined to apply the values as swimming advisories rather than as statewide criteria. This decision was made because harmful algal blooms that result in algal toxins are

often a response to other water quality impairments/issues for which criteria already exist or are potentially forthcoming (i.e., phosphorus, chlorophyll, nitrogen). The DNR recommends that local and tribal public health agencies use these swimming advisories for notification purposes in recreational waters to protect the public." It further notes that the DNR plans to develop guidance to assist with implementation of these recommendations, which we expect to do this cycle.

Monitoring at beaches for swimming advisories falls under the jurisdiction of local health departments. However, even if DNR established an ambient water quality criterion for cyanotoxins, this is not likely to be effective for increasing public health monitoring for the following reasons:

- The frequency and timeframe that DNR would use for ambient water quality monitoring to assess attainment of a criterion (say, once per month, with delays due to batched analysis at the lab) is different from that used for beach monitoring (where sampling might occur weekly to daily), so ambient water quality monitoring for criterion assessment would not be timely enough to protect public health.
- A criterion would not necessarily equate to more monitoring by DNR or at the local level. Only a small subset of the parameters with criteria are regularly monitored for by DNR. DNR doesn't currently have funding sufficient to do additional monitoring and analysis. Monitoring for cyanobacteria is conducted by local municipalities and can be increased (or decreased) whether or not a water quality criterion is in place.

The commenter's desire to expand this type of monitoring would require local funding to the county or municipal health department to expand their beach monitoring to include cyanobacteria or cyanobacterial toxins.

Nitrate/Nitrogen Criteria Development:

Multiple comments were received in support of criteria development for nitrate/nitrogen. Some of the comments indicated that this topic should be moved to a Category A priority. The DNR recognizes the need to move forward on criteria development and its N-STEPs workgroup remains active. However, before moving into a criteria development phase, the DNR intends to flesh out implementation needs for point and nonpoint sources and related programs such as Total Maximum Daily Load (TMDL) development.

Per- and polyfluoroalkyl Substances (PFAS, other than PFOS and PFOA) Criteria Development

Many comments were submitted in support of this work plan topic and its proposed inclusion in Category B. DNR intends to closely watch the science and work closely with other states to understand their respective regulatory approaches. Two comments indicated the need for implementation guidance. Implementation guidance is contained in DNR's "PFOS and PFOA Minimization Expectations" document which is available for download from this webpage: PFAS Water Quality Initiatives.

Neonicotinoid Insecticides Exploratory Work:

DNR received several comments about neonicotinoid exploratory work. Although most of the comments called for continued monitoring of neonicotinoids in surface water, many also suggested monitoring for neonicotinoids in invertebrate tissue. Monitoring efforts for both water column sampling and tissue sampling are underway and will continue with the addition of some inter-agency collaboration. Three stakeholders also indicated developing criteria for neonicotinoid compounds should be prioritized. This is under consideration for the future, with the consideration of surface water public drinking supply waterbodies as the most plausible starting point for criteria. This topic remains in Category B.

Category C: Not prioritized this cycle

Pharmaceuticals Criteria Development

One comment was received regarding pharmaceuticals criteria development. It was recommended that DNR receive and house data for 15 sites that have been consistently monitored for pharmaceuticals and personal care products. DNR will coordinate internally to determine if the digital infrastructure to house this data is available or can be developed to support this offer to collaborate. Although the comment suggested elevating this topic to Category B: *Exploratory*, no exploratory work for criteria development for pharmaceuticals is expected during this TSR cycle.

Microplastics Criteria Development

Two comments recommended elevating this topic to Category B: *Exploratory*. Opportunities to collaborate were shared with DNR about other entities conducting microplastics research. Currently, the DNR Office of Emerging Contaminants is doing exploratory work regarding characterizing the state of the science, and data gaps. Criteria development requires the standardization of sampling methods, data analysis, and the availability of robust toxicological data. If additional information relevant to developing standards become available, this topic may move to Category B in a future TSR cycle.

Outstanding/Exceptional Resource Waters Process Revision

DNR received a comment requesting that this topic be elevated to Category A: *Priorities for this cycle*. The rationale behind this suggestion is that the designation of these waters is crucial to ensure antidegradation.

DNR recognizes that Outstanding/Exceptional Resource Waters (ORW/ERW) get a higher level of protection under antidegradation procedures and that updating the process of classifying these waters is important. However, antidegradation procedures are applied to all waterbodies regardless of the ORW/ERW designation, so it is not necessary to ensuring antidegradation. This topic will remain in Category C until staff time becomes available to lead this effort.

Total Suspended Solids (TSS) Criteria Development

One comment was received suggesting the elevation of this topic to category B: *Exploratory* work. Some previous exploratory work to determine what would be needed to develop a criterion was done for TSS in previous TSR cycles. Further progress on this effort would entail a large staff workload, hence, DNR has determined to that this topic will remain in Category C, as the Department can be more effective by focusing on other work that is farther along at this time.

Bifenthrin and Pyrethroid Pesticides

One comment indicated that DNR should develop criteria for Bifenthrin and Pyrethroid pesticides in general, due to declining invertebrate populations. DNR's efforts for pesticide monitoring and exploration of criteria development will focus on neonicotinoid pesticides during this TSR cycle. This work will be informative for future water quality standards updates with other pesticides.

COMMENTS ON TOPICS THAT ARE NOT INCLUDED IN THE DRAFT WORK PLAN

Fipronil

One comment indicated that DNR should develop criteria for Fipronil, a commonly used pesticide that is implicated in declining invertebrate populations. DNR's efforts for pesticide monitoring and exploration of criteria development will focus on neonicotinoid pesticides during this TSR cycle. This work will be informative for future water quality standards updates with other pesticides.

6PPD Quinone

One comment was received requesting that a monitoring program be set up for 6-PPD-Quinones, toxic compounds that are a by-product of vehicle tire degradation. The commenter noted evidence that these materials may be detrimental to trout/salmon fisheries. This comment has been forwarded to the water quality Monitoring Section and Office of Emerging Contaminants, who are better positioned than the Water Quality Standards program to do monitoring and research.

Swimmer's itch:

Commenters requested that DNR consider development of a water quality standard or criterion that could be used to assess when a waterbody is impaired for recreation because of swimmer's itch. DNR recognizes this is a real concern for swimmers and lakeshore residents and does inhibit recreation. However, because the parasite causing swimmer's itch is naturally occurring and is not a human-induced pollutant, a water quality standard would not be effective in addressing the issue. The commenters compare it to *E. coli*, bacteria for which the state does have water quality criteria, but *E. coli* are processed and discharged by sewage treatment plants and therefore a major source of *E. coli* can be regulated via water quality criteria and permit limits. This is not the case for swimmer's itch. The following web page has a detailed description of many factors that make swimmer's itch an issue that cannot be readily addressed by water quality criteria: https://apps.dnr.wi.gov/lakes/swimmersitch/ .

COMMENTS OUTSIDE OF THE SCOPE OF THE TSR

The following topics are outside of the scope of the TSR. The comments have been forwarded to the appropriate program within DNR whose work is most relevant to the content of the comments.

Reducing agricultural runoff to improve lake water quality.

The commenter raised issues of non-point agricultural pollution and increased algae levels, and advocated for more funding and cost-sharing, education, and best management practices to address these, as well as targeting Stewardship funding to purchase shoreline easements. This comment was forwarded to the Agricultural Runoff Section.

Manure Treatment Technology Guidance

Commenters stated that DNR should create guidance for facilities that wish to adopt manure treatment technologies that will directly discharge treated wastewater into surface waters. Such guidance should allow for substantive review and improve consistency in permit review and drafting. It could also reduce the amount of time it takes to reissue permits to CAFOs looking to adopt the technology. This comment was forwarded to the Agricultural Runoff Section and Wastewater Section for their consideration.

COMMENTS REGARDING UPDATES TO DESIGNATED USES

One commenter recommended updating the designated uses for several streams in the Milwaukee area that are currently categorized as "variance waters" with less-stringent water quality criteria under ch. NR 104, Wis. Adm. Code. The commenter cited work that has been completed or is underway to restore these streams and indicated that their current water quality is usually attaining the statewide standards and they should be re-designated into a full fish and aquatic life use category. The following waterbodies were specified: Underwood Creek, Indian Creek, Lincoln Creek, Menomonee River below the Honey Creek confluence, section of Honey Creek above confluence, Kinnikinnic river, Milwaukee River downstream of the former north avenue dam, Menomonee Canal, and Burnham Canal.

During the department's previous rulemaking effort to update designated uses under chs. NR 102 and 104, these waters were slated to have their variance water status removed. Although previous efforts to update this section of the code did not come to fruition, the department expects to again propose them for repeal when this rulemaking is continued in the future.

- All of s. NR 104.06(2) is recommended for repeal. This includes, under par. (a), Underwood Cr., Indian Cr., Honey Cr., Lincoln Cr., Menomonee River below the Honey Cr. confluence, Kinnickinnic River, along with three other streams/rivers (Barnes Cr., Pike Cr., and Pike River). It also includes, under par. (b), Milwaukee River downstream from the North Ave. dam, South Menomonee Canal, and Burnham Canal. As explained in the materials developed at that time, these are proposed for repeal "… to delete exceptions that are no longer applicable. A detailed study has been completed of the Milwaukee River Basin through the Milwaukee River Total Maximum Daily Load (TMDL) analysis. Results indicate that these waterbodies must meet standard statewide criteria for fecal coliform to allow attainment of criteria in downstream waters. TMDL allocations have also been assigned to meet applicable statewide criteria for phosphorus allowing attainment of DO standards. In addition, temperature variances in par. (2)(b) are superseded by temperature criteria in NR 106.51, promulgated in 2010. Removal of these variances should not have an impact on permittees as dischargers to these waters are already assigned permit limits based on meeting statewide criteria for DO, fecal coliform, and temperature. For waters that are not included in the TMDL (Barnes Creek, Pike Creek in Kenosha County, and Pike River (aka North Branch Pike River) in Racine County), no municipal dischargers are present on these waters so removing these variances from NR 104 should not affect permit limits."
- All of s. NR 104.20, including subs. (6) and (7) related to Honey Creek, are recommended for repeal. The DO and fecal coliform criteria under these subs. are not protective of designated uses and are no longer appropriate or applicable. Permits for facilities on this receiving water are already based on more stringent statewide criteria.

The commenter also questioned why Silver Creek (the receiving water for the Village of Random Lake in Sheboygan Co.) is listed as a "variance water" under ch. NR 104. Silver Creek is listed as a Limited Forage Fish water (LFF, which is a category of "variance water") in ch. NR 104, Table 5, row 40. It was originally listed as LFF "from Random Lake STP down to first crossing of Creek Road" based on a brief 1975 stream classification memo. However, records indicate that there has been discussion over time on reclassification to a full fish and aquatic life category. Thank you for bringing it to our attention. We have added this to our list of waters to request a future stream classification survey on. We are systematically reviewing listings in ch. NR 104 where questions such as these have arisen.

- The Village of Random Lake does not have any permit variances for substances discharged in its effluent to Silver Creek. However, because it is classified as an LFF, it does receive less stringent permit limits for dissolved oxygen, and BOD5 consistent with LFF listings, as shown in ch. NR 104 Table 1 (its total suspended solids are based on the Milwaukee River TMDL).

COMMENTS REGARDING UPDATES TO VARIANCES

Mercury Variance

One commenter indicated DNR should reduce or eliminate the issuance of mercury variances. The rationale provided cited that EPA standards requiring dental offices to pretreat their wastewater is sufficient to reduce or eliminate mercury from the waste stream. While this is a protective measure for mercury waste, pretreatment procedures from dental offices have been in place since before the EPA rule was promulgated. Standards set by EPA reinforced processes that were already established.

Most of the wastewater treatment plants with mercury variances have legacy mercury contamination that predates current regulations. Old pipe infrastructure within facilities that contains mercury paired with possible sampling/testing bias due to monitoring low concentrations, are two examples of reasons that mercury variances are needed. In some instances, receiving water has improved and assimilative capacity has increased. This means that some facilities have been able to get a less stringent permit limit and don't need a variance. However, this is not true for all facilities.

Komatsu Facility Individual Mercury Variance

One Commenter indicated that the Komatsu facility needs a revision to their mercury variance based on its relocation to a new facility. DNR listed this variance in error in our TSR work plan and has corrected our records.

We Energies Oak Creek Mercury and Arsenic Variance

One comment was received indicating that We Energies Oak Creek may need its variances for mercury and arsenic reevaluated because the facility has transitioned from coal to natural gas. DNR is beginning the permit drafting process for this facility. If a variance is proposed, the public will have the opportunity to provide input during the public comment period.

Total Phosphorus Multi-Discharger Variance

DNR received one comment regarding the total phosphorus multi-discharger variance. The commenter indicated that because technology has improved and costs have been reduced for phosphorus treatment, compliance costs should be reevaluated for certain categories of dischargers. DNR's Multi-Discharger Variance Coordinator has been put in touch directly with the commenter.