Form 1100-001
(R 12/09)

# NATURAL RESOURCES BOARD AGENDA ITEM

Item No. 3.A.4

**SUBJECT:** Request adoption of Board Order WT-25-08, revisions to NR 102 and NR 217 related to phosphorus water quality standards criteria and WPDES permit provisions for phosphorus.

**FOR:** JUNE 2010 **BOARD MEETING**

**TO BE PRESENTED BY:** Russ Rasmussen, Director Bureau of Watershed Management

**SUMMARY:**

These rules are part of a comprehensive strategy to address one of the greatest remaining sources of water pollution in Wisconsin - excess nutrients, specifically phosphorus. Ch. NR 102 establishes phosphorus water quality criteria and ch. NR 217 provides for implementation of those criteria for point sources of phosphorus pollution through WPDES permits. The proposed administrative rule revisions include phosphorus water quality standards criteria for streams, inland lakes and Great Lakes, as required by the U.S. Environmental Protection Agency. These criteria are also in response to identified phosphorus-related water quality in many Wisconsin waters including nuisance algae blooms in lakes, "toxic algae", algal mats along Lake Michigan beaches and low dissolved oxygen in streams and rivers.

The criteria will be used to determine whether or not waters are impaired, serve as "targets" for total maximum daily load allocations, used to determine water quality based effluent limits for WPDES permits, and used as the basis for water quality based nonpoint source performance standards. The proposed revisions also include new procedures for developing and implementing Wisconsin Pollutant Discharge Elimination System permit water quality based effluent limits for phosphorus. The affordability of meeting projected effluent limits is a concern for many municipal and industrial wastewater dischargers.

The other significant contributor of phosphorus pollution is from nonpoint source pollution, primarily from agricultural and urban storm water runoff. Nonpoint sources of phosphorus pollution are being addressed through a concurrent revision to ch. NR 151, Runoff Management, which establishes performance standards for nonpoint source pollution designed to meet water quality standards

**RECOMMENDATION:** Adoption of Board Order WT-25-08

**LIST OF ATTACHED MATERIALS:**

| | | | | | |
|---|---|---|---|---|---|
| No | ☐ | Fiscal Estimate Required | Yes | ☑ | Attached |
| No | ☑ | Environmental Assessment or Impact Statement Required | Yes | ☐ | Attached |
| No | ☐ | Background Memo | Yes | ☑ | Attached |

**APPROVED:**

Russell Rasmussen — Bureau Director, — June 11, 2010 — Date

Administrator, — 6/11/10 — Date

Secretary, Matt Frank — 6-14-10 — Date

cc: Laurie J. Ross - AD/8
Russ Rasmussen - WT/3
Julia Riley - WT/3
Robin Nyffeler - LS/8

# CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: June 11, 2010 FILE REF: 3200

TO: Natural Resources Board Members

FROM: Matt Frank, Secretary

SUBJECT: Request Adoption of Board Order WT-25-08, Pertaining to the Revision of chs. NR 102 and 217, Wis. Adm. Code, Incorporating Phosphorus Water Quality Standards Criteria for Lakes, Streams and Wisconsin Pollutant Discharge Elimination System Permit Water Quality Based Effluent Standards and Limitations for Phosphorus

***1. Why is this rule being proposed?***

These rules are being proposed to amend portions of our rules to adopt numeric phosphorus water quality standards criteria for lakes, reservoirs, streams and rivers per s. 281.15, Stats, and to adopt provisions for developing and implementing Wisconsin Pollutant Discharge Elimination System (WPDES) permit provisions based on the phosphorus criteria per ss. 283.11, 283.13 (5), 283.31, 283.55 and 283.84, Stats.

These rules are part of a comprehensive strategy to address one of the greatest remaining sources of water pollution in Wisconsin – excess nutrients, specifically phosphorus. Ch. NR 102 establishes phosphorus water quality criteria and ch. NR 217 provides for implementation of those criteria for point sources of phosphorus pollution through WPDES permits. The other significant contributor of phosphorus pollution is from nonpoint source pollution, primarily form agricultural and urban storm water runoff. Nonpoint sources of phosphorus pollution are being addressed through a concurrent revision to ch. NR 151, Runoff Management, which establishes performance standards for nonpoint source pollution designed to meet water quality standards.

***a. What event or action triggered the proposal?***

The revisions are based on recognition of phosphorus related water quality problems across the state, including algal mats on Lake Michigan beaches, nuisance algae conditions in many Wisconsin lakes, low dissolved oxygen in many Wisconsin streams, and "toxic" blue-green algae in a number of lakes. Presently, 172 lakes and streams are included on Wisconsin's impaired waters list for phosphorus. The revisions are also in response to nationwide federal requirements to adopt nutrient criteria.

In late 2000, US EPA, under the authority of s. 304 (a) of the Clean Water Act, published two guidance documents for use by states in setting water quality standards nutrient criteria. Once US EPA publishes such guidance documents, states are generally required within a reasonable number of years to adopt water quality criteria that are protective of designated uses. Under s. 303 (c) (4) (B) of the Clean Water Act, US EPA may determine, in the absence of state adopted criteria, that a new or revised standard is needed to meet Clean Water Act requirements and pursue federal adoption of the criteria for the state. On November 23, 2009, seven groups notified US EPA of their intent to sue over the US EPA's failure to promulgate phosphorus and nitrogen criteria for Wisconsin.

In 2001, the department, in concert with the US Geological Survey, initiated stream and river studies to determine the cause and effect relations between phosphorus and nitrogen and stream biotic indices. The

results of the stream study were published in 2006 and the results of the river study in 2008. Based on those studies and related studies both in Wisconsin and elsewhere, the department developed proposed phosphorus criteria for streams and rivers. In addition, using a wealth of experience and established lake management procedures, the department proposed phosphorus criteria for lakes and reservoirs. The department is not proposing nitrogen criteria at this time and will need to develop such criteria in the future.

**b.** ***What issues are addressed by the rule?***

Department regulations are being revised in response to federal regulations and in response to identified phosphorus related problems in many Wisconsin lakes and streams. Although these water quality problems have been known for some time, results of studies published in 2006 and 2008 have now provided information sufficient to establish statewide phosphorus water quality standards to ensure protection of designated uses of Wisconsin's waters.

***2. Summary of the Rules***

The Bureau of Watershed Management proposes to incorporate phosphorus criteria for rivers and streams and for lakes and reservoirs into s. NR 102.06; replacing the general narrative phosphorus provision. The proposed criterion for listed rivers is 100 ug/l and the proposed criterion for all other streams, unless exempted, is 75 ug/l. These criteria are intended to protect fish and aquatic life uses. For lakes and reservoirs, a series of phosphorus concentrations are proposed ranging from 15 ug/l for lakes supporting a cold water fishery in lower portions of the lake to 40 ug/l for shallow lakes and reservoirs. For small impoundments, the criteria are the same as the inflowing streams or river. These lake criteria are intended to protect both fish and aquatic life and recreational uses. For Lake Michigan and Lake Superior, the proposed criteria are based on the analyses of the Great Lakes Water Quality Agreement. Provisions are also proposed for future incorporation of site-specific criterion.

The Bureau of Watershed Management also proposes to incorporate provisions for phosphorus water quality based effluent limits into a new subchapter of ch. NR 217. Chapter NR 217 currently contains technology-based effluent standards and limitations for phosphorus. These proposed water quality based provisions apply to: publicly and privately owned wastewater dischargers discharging phosphorus; to a limited extent to concentrated animal feeding operations when phosphorus is being discharged though a treatment system (non-storm water related) discharge; and to municipal storm water discharges when the department determines that the existing requirements contained in chs. NR 151 and NR 216, are not sufficient to attain and maintain the applicable phosphorus criteria. The proposed rule includes procedures for: determining when a point source has "reasonable potential" to cause or contribute to exceeding water quality standards; calculating water quality based effluent limits; maximum limits; use of total maximum daily load wasteload allocations in lieu of, or in addition to, water quality based effluent limits; compliance schedules and a variance procedure for stabilization pond and lagoon systems. The proposed provisions for compliance schedules and variances include procedures for interim measures and interim effluent limits.

***3. How does this proposal affect existing policy?***

The proposed phosphorus criteria for streams, rivers, lakes, reservoirs and Great Lakes are in additional to existing criteria for dissolved oxygen and other parameters. In general, the proposed criteria are numeric and are a refinement of the existing narrative criteria in s. NR 102.06. The proposed criteria fill gaps in

our suite of numeric water quality standards criteria. The criteria will also be used in identifying impaired waters and will be the water quality basis for establishing total maximum daily load allocations for phosphorus.

The proposed WPDES phosphorus water quality based effluent limitations are in addition to the existing technology-based phosphorus effluent limitations in ch. NR 217. The existing technology-based effluent limitations apply to municipal discharges of more than 150 pounds of phosphorus per month and industrial discharges of more than 60 pounds per month, regardless of the water quality conditions in the receiving water. The existing technology-based effluent limitations are set at 1 mg/l for phosphorus or an alternate limitation.

***4. Hearing Synopsis, Response to Public Comments, and Response to Rules Clearinghouse Comments.***

Hearing Synopsis

The Department conducted 4 public hearings in 2010 on the proposed rule revisions: Rhinelander, April 15; Green Bay, April 20; Oconomowoc, April 21; and Eau Claire, April 27. Over 238 attended the hearings, 224 registered by filing appearance slips and 62 provided verbal testimony. Of those people who registered, 41 were in support, 134 were in opposition, and 49 registered as interest may appear (in favor or opposition to some provisions, but not others; attending to get information). The attendance and testimony breakdown is shown in the table below.

| | Attendance | Support | | Opposition | | As Interest May Appear | | Total | |
|---|---|---|---|---|---|---|---|---|---|
| | | Registered | Testified | Registered | Testified | Registered | Testified | Registered | Testified |
| Rhinelander | 19 | 4 | 3 | 8 | 3 | 6 | 2 | 18 | 8 |
| Green Bay | 75 | 10 | 4 | 51 | 6 | 10 | 3 | 71 | 13 |
| Oconomowoc | 56 | 12 | 8 | 24 | 6 | 17 | 10 | 53 | 24 |
| Eau Claire | 88 | 15 | 8 | 51 | 5 | 16 | 4 | 82 | 17 |
| **Totals** | **238** | **41** | **23** | **134** | **20** | **49** | **19** | **224** | **62** |

The Department also received written comments from 411 individuals and organizations. There were 217 comments in general support; 62 comments in opposition; 121 comments with neutral positions, questions, or statements with tangential information; and 11 comments that supported portions of the rule but opposed other portions.

Support for the rules came from lakes and river associations, environmental groups, conservation groups and individuals who want strong rules limiting phosphorus inputs to lakes and streams. Lakeshore property owners, small businesses, and municipalities that rely on tourism were concerned about excessive, unsightly green algae growth in the lakes that adversely affects the health of animals and humans. Opposition to the rules came from the paper industries, wastewater utilities, dairy farmers, and municipalities.

Testimony and comments received at the public hearings and during the comment period identified these issues that were of most significant concern:

- Costs to comply with low phosphorus effluent limits are not affordable by local communities and industries.

- Effluent limits would not need to be as stringent if nonpoint sources were controlled and the rule should not force the point sources to bear the entire phosphorus control burden.
- Effluent limits should only be based on the stream or river conditions at the facilities outfall and should not be based on downstream water quality conditions.
- The permit compliance averaging period of monthly is too short given the inherent variability in the treatment processes needed to meet low phosphorus effluent limits.
- Mass limits in addition to concentration limits are not warranted.
- Limits should not apply to combined sewer outfalls, storm water discharges, and non-contact cooling water discharges.
- Compliance schedules are too long.

In addition, there was support in general for control of phosphorus from all sources and for specific flexibility elements in the proposed rules, including:

- Compliance schedules that may extend beyond one permit term, although many wanted longer compliance schedules than proposed.
- Adaptive Management Option, but the concept needs greater detail.
- The variance provisions that apply to small communities with lagoon or stabilization ponds, but these provisions should be expanded to include industrial lagoons and mechanical wastewater treatment plants for small communities.

Response to Public Comments

Germane comments and department responses to public comments are in Attachment 1 of this document.

Response to Rules Clearinghouse Comments

With the exception of comments discussed below, the comments included in the Wisconsin Legislative Council Clearinghouse Report to the department have either been incorporated into the proposed rules or are no longer applicable because subsequent revisions removed or significantly altered that portion of the rule.

- Statutory Authority. Section 283.15 (4) (a) 1. f., Stats., generally provides that the Secretary of the Department of Natural Resources must approve all or part of a requested variance, or modify and approve a requested variance, if the permittee demonstrates that attaining the water quality standard is not feasible because the standard will cause a substantial and widespread adverse social and economic impact in the area where the permittee is located. Section NR 217.18 (1) (b) 3. is a departmental finding that in many cases it will be necessary for owners of stabilization ponds and lagoons to construct a new wastewater treatment plant to comply with phosphorus effluent limitations; and construction of these facilities will result in substantial and widespread adverse social and economic impacts in the area served by the existing stabilization pond and lagoon system. Section NR 217.18 (3) (c) also provides that a permittee with a lagoon and stabilization pond that is denied a variance may not be granted a variance for phosphorus based on the criteria in s. 283.15 (4) (a) 1. f., Stats., and using the procedures in ch. NR 200 and s. 283.15, Stats. It appears, although it is not clear, that the rule provision voids the statutory provision regarding variances. If so, what statutory authority exists for the rule provisions?

**Response:** The statutory authority for this rule section is s. 283.15 (4) (a) 1. f., Stats. In s. NR 217.18 (3) (c), the rule language was intended to prohibit a person from applying for a variance from a limit for the same factor (widespread adverse social and economic hardship) twice – both before the permit is issued and immediately after issuance. The Department made revisions to the variance rule procedures in s. NR 217.18 to clarify that the rule is implementing the statutory variance provision in s. NR 283.15 (4) (a) 1 .f.

- 2.l. In s. NR 217.15 (1) (c), the introductory material should be renumbered subd. 1., and the remaining subdivisions should be renumbered accordingly.

**Response:** The material in (1) (c) is introductory to the other two subdivisions. It has not been renumbered as suggested.

***5. Public Contacts Following Public Hearings.***

Numerous contacts with the public and organizations occurred following the public hearings. Various staff attended meetings and conferences to discuss potential rule revisions. Attendees at such meetings included representatives of the Municipal Environmental Group, Milwaukee Metropolitan Sewerage District, Madison Metropolitan Sewerage District, Green Bay Metropolitan Sewerage District, Wisconsin Paper Council, Midwest Food Processors Association, Wisconsin Cheese Makers Association, Saputo, Trega Foods, Foremost Farms, Meister Dairy, Probst Group, Bytec Inc, Dairy Business Association, Midwest Environmental Advocates, Clean Wisconsin, Environmental Law and Policy Center, the U. S. Environmental Protection Agency, the U. S. Geological Survey and Representative Brett Davis's office.

***6. Environmental Analysis.***

This rule revision is considered a Type III action since it does not have adverse environmental impacts or involve conflicts in the use of waters.

***7. Final Regulatory Flexibility Analysis.***

Food processing facilities and cheese factories were identified as potential categories of small businesses that would most directly be affected by these rule revisions. Data on these types of facilities was analyzed and there are few, if any, small businesses that directly discharge wastewater containing phosphorus to lakes or streams. Many small cheese factories land apply their wastes and do not discharge wastewater containing phosphorus. Therefore, this rule revision does not anticipate any additional compliance or reporting requirements for small businesses.

If there is an impact on small businesses as a result of these rule revisions, it would likely be an indirect fiscal impact. Many small businesses discharge their wastes to a municipal wastewater treatment facility. If a municipal wastewater treatment plant's wastewater discharge permit is modified to require further removal of phosphorus, it is likely that the cost to provide additional treatment levels will be absorbed by increasing sewer use charges. Some small businesses may experience an increase in sewer service fees as these rule revisions are implemented statewide.

Some municipalities may also require specific small businesses to provide pretreatment for phosphorus removal if a wastewater discharge from a small business contributes significant

loadings of phosphorus to the sanitary sewer system. Implementation of these rule revisions may result in additional costs for phosphorus pretreatment to a select subset of small businesses.

The department is unable to specifically estimate the indirect fiscal impact to small businesses as a result of implementation of this rule package because of the variability of each situation.

# Attachment 1

**Summary of Public Comments and Department Responses**
**WT-25-08**
**Revisions to NR 102 and 217**

The department received a total of 473 written and verbal comments from municipalities, industries, organizations, agencies and individuals. As requested by the Natural Resources Board, specific comments by US EPA are identified. US EPA comments are highlighted in bold and italic typeface within the bulleted list of each section. However, if others made similar comments to those made by EPA those comments were not repeated.

The major issues that emerged from the comments and the department's responses are listed below. In addition, the department made minor clarifying edits based on comments, which are not listed here.

## I. NR 102

### A. NR 102.06 (3) Criteria for Rivers and Streams

- NR 102.06 numeric phosphorus standards criteria development process is reasonable for rivers and streams.
- There is nothing to prevent water resources currently below the standard from being degraded to the standard before any action is taken.
- There does not appear to be a relationship between the criteria and the designated uses that are to be protected by the criteria.
- Scientific understanding of cause and effect relationships are not sufficiently advanced to develop valid criteria.
- An in-stream phosphorus concentration above the response threshold does not necessarily mean that an impaired condition exists or that designated uses are not being met.
- Approach is too simplistic. Breakpoints may not exist; if they do not exist, proposed criteria have no scientific basis.
- Focus on bio-available phosphorus; use of total phosphorus will overstate potential for discharges to have impacts.
- Nutrient concentrations may not be sufficient indicators. USGS report on wadeable streams states, "Although there were many significant correlations and visual relations between the nutrient concentrations and the characteristics of biotic communities, this may or may not be an indication of cause-and-effect relations."
- WDNR has not made a clear case that the stressor-response relationships can reasonably be expected to contain true breakpoints.
- WDNR has not conducted a systematic evaluation of the potential for designated use attainment decision errors if the proposed TP criteria are adopted as part of Wisconsin's state water quality standards.
- WDNR should re-examine the technical bases of its TP criteria in light of EPA draft guidance on the derivation of numeric criteria using the stressor-response

approach, and the results of a U. S. Environmental Protection Agency (EPA) Science Advisory Board review of the draft guidance document.

- Aquatic ecoregion should be used.
- Extend the river portion of the Wisconsin River upstream from the confluence with the Pelican River to the Rhinelander Dam. Data exists to show that the flow exceeds 150 cubic feet per second more than 90 percent of the time.
- Listing of waters impaired by phosphorus is a disgrace. Problems have existed for decades. Can't continue to add phosphorus to waters; it accumulates. Excess phosphorus damages our economy.
- Phosphorus-impaired waters should be waters impaired by phosphorus not other substances since there are other factors that can impact dissolved oxygen and other factors besides phosphorus that affect the algae-dissolve oxygen relationship, such as light, other nutrients, stream gradient, and retention time in reservoirs, lakes and impoundments.
- WDNR should develop guidance concurrent with these rules regarding how the proposed NR 102 criteria would be used to determine if a stream is impaired relative to phosphorus.
- The method used to establish the criteria for streams, river and lakes is based on methods which the EPA Science Advisory Board found to be deficient.

**Response:**

Several people commented on the scientific validity of the proposed phosphorus criteria for rivers and streams. Prior to requesting permission from the Natural Resources Board to go to pubic hearing, the department, with the assistance of US EPA, reviewed the data analysis for rivers and streams using a step-by-step process consistent with the newly released US EPA guidance document developed with the Science Advisory Board and compared the results to other lines of evidence. In the first step of the data analysis, the applicability of each correlation was reviewed; emphasizing those with a direct relation with phosphorus and eliminating those with little or no scientific relationship. Those correlations that interfere or mask the effects, such as high turbidity, were separated. In the second step, the statistical strength of each correlation was given a weight so that stronger correlations would be given more emphasis. In the fourth step, the correlations were divided into three groups: linear correlations; correlations with abrupt thresholds with very clear breakpoints; and correlations with gradual thresholds and less clear breakpoints. Greater emphasis was given to those with abrupt thresholds than gradual thresholds. Linear thresholds were compared differently, such as a comparison to US EPA guidance values. In the fifth step, similar correlations were grouped, so that they were not "double counting". The result of this analysis was a set of ranges, where the proposed criteria fell within the ranges. In addition, the proposed criteria were compared to the results of other studies, such as reference stream studies of trout streams in southwest Wisconsin and compared to information on trout streams were attainment of designated uses is certain. Analysis of streams and rivers did not show a difference between eco-regions.

In response to the comment on developing guidance for listing waters as impaired, the department has developed draft guidance, "Wisconsin Consolidated Assessment and Listing Methodology", for listing of impaired waters. The department will be refining this guidance in the next year or two. The notes relating to impaired waters have been refined to only include waters with low dissolved oxygen where a diurnal swing is occurring.

In response to the comment that phosphorus concentrations in streams and rivers should not be allowed to increase up to the criterion, ch. NR 207, Antidegradation, deals with procedures for determining whether any or all of the "assimilative capacity" in a stream is available to sources of phosphorus or other pollutants. Different amounts of the assimilative capacity are available depending on whether the stream is an Outstanding Resources Water, an Exceptional Resource Water or other water. Changes to ch. NR 207 are currently being discussed with an advisory committee.

Consistent with the information provided, the proposed rules extend the river portion of the Wisconsin River to the Rhinelander Dam.

In response to the comment on use of bioavailable phosphorus instead of total phosphorus, the bioavailability of phosphorus varies greatly over time. Soluble phosphorus is generally available immediately to algae; while portions of the particulate phosphorus may become available over time and have impacts downstream. US EPA guidance calls for use of total phosphorus.

**B. NR 102.06 (4) Criteria for Lakes and Reservoirs**

- Revisit the application of the two reservoir phosphorus standards, 30 ug/l for stratified reservoirs and 40 ug/l for non-stratified reservoirs, taking into account whether the water body is a warm water fishery or a cold water fishery.
- Revisit the definition of a stratified reservoir and allow for a more technically sound evaluation of whether a body of water is stratified.
- Specific guidance is required in the rule to restrict the use of reservoir criteria only for development of the WQ based limits for reservoir waters unless the department documents a specific need.
- Phosphorus-impaired waters should be waters impaired by phosphorus not other substances since there are other factors that can impact dissolved oxygen and other factors besides phosphorus that affect the algae-dissolve oxygen relationship, such as light, other nutrients, stream gradient, and retention time in reservoirs, lakes and impoundments.
- P standards apply to whole lake and specific bays should not be given different criteria.

**Response:**

In response to several comments on the definition of reservoirs, the definition has been refined to clarify that the 14-day "residence time" for the flow through the reservoir applies during summer conditions.

In response to the comment on many factors other than phosphorus that may influence algae growth and dissolved oxygen, phosphorus is the nutrient that limits algae growth in more than three-quarters of Wisconsin's inland lakes. Generally lakes have adequate light.

In response to the comment on phosphorus standards applying to whole lake and specific bays not be given different criteria, the criteria should apply to the entire lake unless a site-specific criterion is adopted for specific bays.

**C. NR 102.06 (5) Criteria for the Great Lakes**

- There is an absence of numeric criteria for the portion of Green Bay from the mouth of the Fox River to a line from Long Tail Point to Point au Sable.
- The criteria fail to establish either a narrative or numeric criteria protective of the recreational uses of that water.
- Clarify how narrative criteria and WQBELS will be implemented.
- The narrative criterion for lower Green Bay should be removed or should provide quantifiable and defendable measurements that relate upstream performance to the water quality in the bay.
- What are the Lake Michigan models?

**Response:**

In response to several comments on the narrative criterion for the inner portion of Green Bay, commonly referred to as the lower bay, the narrative criterion was developed as part of the TMDL being developed for the inner bay. The narrative criterion is in recognition that the inner bay is not a uniform body of water, with a gradient of phosphorus concentrations from the mouth of the Fox River to an imaginary line between Long Tail Point and Point au Sable. The TMDL is being developed for the conditions at the mouth of the Fox River, the most critical location is the inner bay from a pollutant management perspective. The completed TMDL will also serve to further guide phosphorus control from both upstream point sources and nonpoint sources, including numeric wasteload allocations for point sources and numeric load allocations for nonpoint sources.

The criterion for Lake Michigan, while based on the open water guidance values of the International Joint Commission, is the best available scientific information for the nearshore waters based on studies conducted by the department and universities. Nearshore waters in Lake Michigan which are warmer than open waters and where light penetrates to the bottom provide conditions more suitable for Cladophora growth than open waters, and are more sensitive to nutrient conditions than open waters. Lake Superior nearshore waters tend to be much colder and don't exhibit the same nearshore conditions as Lake Michigan. The original modeling of the Great Lakes was based on equations developed by Vollenweider. US EPA's Office of the Great Lakes has contracted with researchers to further develop submodels that are applicable to nearshore waters.

**D. NR 102.06 (6) Exclusions for Numeric Criteria**

- Effluent dominated streams should be added as an exclusion.
- The four exclusion categories in s. NR 102.06 (6) should be retained in the final rule.
- Add a fifth category in s. NR 102.06 (6) that specifically excludes effluent dominated streams.
- Include an exclusion for plants already getting to low levels.
- Supportive of excluding ephemeral streams and limited aquatic life waters, but additional clarification needed so that landowners know which waters are covered by ch. NR 102.
- The language excluding ephemeral streams is too vague, and will cause confusion in the regulated community. Suggests that grassed waterways, concentrated flow channels (NRCS 590), non-continuous streams (ch. NR 104), agricultural ditches and drains s. 88.01 (8) Stats., be excluded.

**Response:**

Several comments were made on excluding the application of the criteria to effluent dominated streams without offering any reason for the exclusion. Effluent dominated streams are not all of the same type or size. Many are small streams that may receive the majority of their flow from point source dischargers and are included in the exclusion of limited aquatic life streams. Criteria could not be developed at this time for limited aquatic life streams due to a lack of data. However, others are larger, such as the Fox River in southeast Wisconsin or Badfish Creek in south central Wisconsin, and fall within the range of the streams studied.

In response to the comment on clarifying the definition of ephemeral streams, the department has included grassed waterways and grassed swales as examples. The Department does not agree with exclusion of all agricultural ditches and drains; some of which are designated as supporting fish and aquatic life, including cold water trout streams.

**E. NR 102.06 (7) Site Specific Criteria**

- The criteria for toxics under 40 C. F. R. Part 132 Appendix F, Procedure 1, which is incorporated by reference in s. NR 105.02, does not apply to phosphorus.
- Retain the provision allowing development of site-specific criteria.
- Identify factors to consider in developing site-specific criteria such as concentration of suspended algae and floating plants; density of benthic algae; macrophyte density; minimum and daily change in dissolved oxygen levels; water clarity and natural background phosphorus concentrations.
- Modify the rule so that the results from an EPA-approved TMDL can completely replace the statewide criteria for concentrations and loads in the rule for waters appropriated modeled.
- Clarify that a TMDL can serve to identify a site-specific criterion without additional rulemaking and that a water body in compliance with in-stream TMDL standards is not in non-attainment for phosphorus.

- The Department should provide the opportunity to evaluate the appropriateness of the criteria on a site/water specific basis as an option to application of the categorical criteria.
- Site-specific criteria process is vague. A description of the process and information/analysis methods are needed.
- ***Add language relating to water quality standards of downstream waters shall be considered and phosphorus criteria may be modified to ensure the attainment and maintenance of the water quality standards of downstream waters.***

**Response:**

In response to the several comments on site-specific criteria, the department, in consultation with US EPA, has modified the language to delete the reference to the procedures cited in the draft rule language. Site-specific criteria may be developed in conjunction with or through a number of different processes, including the TMDL process. However, all site-specific criteria must be scientifically defensible, be protective of designated uses, be adopted by rule and be approved by US EPA. The Department already has the authority to revise water quality criteria to take into account downstream conditions through the site-specific criteria process and does not need to add the language suggested.

**F. Notes following NR 102.06 (7)**

- The second note to s. NR 102.06 (7) lists the factors the department should consider when determining whether a water body is impaired for phosphorus. The department should have a comprehensive rule on TMDLs, but in the absence of such a rule, this note should be placed into rule language as s. NR 102.06 (8). It may also be appropriate to include this language under s. NR 217.11 (3).
- The criteria provide a better baseline for the development of TMDLs.
- A rule providing guidance on the development and use of TMDLs is needed in advance of the promulgation of the proposed phosphorus rule.
- ***Include with the criteria, the frequency and duration that will be used to list waters as impaired.***

**Response:**

There were several suggestions to expand the scope of this set of administrative rule changes to incorporate protocols for listing impaired waters, development of total maximum daily load allocations, implementation of total maximum daily loads, pollutant trading and antidegradation. All of these topics apply to more pollutants than phosphorus, and the department intends to develop administrative rules or rule revisions for each in the next few years.

The second note was expanded to include a reference to the Department's impaired waters listing methodology guidance. The Department's intent is to revise the guidance

within the next few months to incorporate appropriate frequency and duration values for streams and rivers, lakes and reservoirs and nearshore waters of the Great Lakes.

## II. NR 217

### A. NR 217.10 Applicability

- ***Define "privately owned wastewater facilities and treatment works" in the rule or explain in a note or the rule record its intent that non-domestic dischargers are subject to ch. NR 217, Subchapter III.***
- ***Revise s. NR 217.10 to provide that (1) concentrated aquatic animal production facilities (40 CFR § 122.24), aquaculture projects (40 CFR § 122.25), and silvicultural point sources (40 CFR § 122.27); (2) production area overflows from Large concentrated animal feeding operations (CAFOs); and (3) production area discharges from Medium and Small CAFOs, are subject ch. NR 217, Subchapter III. In the alternative, Wisconsin could add a note to s. NR 217.10 to clarify that these point sources are subject to s. 283.15(15) Stats.***
- ***Clarify that ch. NR 217 provisions apply to all WPDES permits or identify the applicable regulations or procedures WDNR will rely on to establish phosphorus WQBELS in the WPDES permits not specifically identified in s. NR 217.10. Limiting the applicability of these criteria to a subset of WPDES permitted facilities violates the Clean Water Act.***
- Given the existing standards in ch. NR 151 and NR 216, this section should be amended as follows: (4) A facility or site that is regulated under ch. [NR] 216 but only to the extent it is subject to a TMDL allocation for phosphorus . ~~only where the department has determined that compliance with the standards in ch[s]. N[R] 151 and 216 are not sufficient to meet phosphorus criteria in s. NR 102.06~~.
- Support an additional exclusion for water treatment additives that contain a de minimus amount of phosphorus.
- Point sources are still the big polluters.
- Supportive of this subchapter applying only to confined animal feeding facilities with alternative treatment facilities.
- All references to potentially regulating storm water dischargers from municipalities should be deleted or should be made more clear that WDNR intends to significantly limit the applicability of NR 102 and NR 217 on storm water discharges.
- Non-contact cooling waters originating from municipal or private potable water supply treatment continue to be exempt from the proposed rules.
- The department should clearly state that the WQBELs only apply to those discharges exceeding the monthly mass loadings in s. NR 217.04(1)(a) 1 and 2.
- Storm water discharges should be exempt from the proposed rule unless the department has information relative to and for which the department has developed limits for these specific sites.
- Current rules provide an exemption from WQBELs for non-contact cooling water under s. NR 106.10(1).

- Modify the ch. NR 205 definition to exclude storm water.
- There should be an exemption for all POTW facilities constructed in the last two years.

**Response:**

The department has added a note to clarify that some point sources may be subject to other statutes (s. 283.13(5), Stats.) or other rules (ch. NR 243) that address phosphorus discharges. The department believes that the current rule language pertaining to noncontact cooling water is consistent with the exemption in s. NR 106.10 (1) and, in any case, this rule provision is under review due to US EPA concerns. The department believes that setting phosphorus numeric limits for storm water discharges are necessary if the storm water discharge contributes to an exceedance of the phosphorus criteria and the practices implemented to comply with chs. NR 151 and NR 216 do not adequately control the phosphorus contributions from storm water discharges. Modifications to ch. NR 205 are beyond the scope of this rulemaking authorization. The department will determine that phosphorus discharges consistent with s. NR 217.04 (1) (a) 1. and 2. do not meet the reasonable potential determination that results in setting a WQBEL limit under s. NR 217.12 (1) (a).

**B. NR 217.11 Definitions**

- ***Revise the definition of "new source" in s. NR 217.11 (2) to provide that it applies solely for the purpose of ch. NR 217 Wis. Adm. Code. Alternatively, Wisconsin could add the term "new discharger" to the rule, define that term in accordance with 40 CFR § 122.2, and revise the definition of "new source" in accordance with 40 CFR § 122.2.***
- Define "Phosphorus impaired water" (s. NR 217.11(3)) more broadly to include all waters that are in fact impaired by phosphorus as determined in accordance with the proposed criteria.
- Revise the definition of a "new source" in s. NR 217.11(2) to include a relocated outfall based on the definition used to address thermal discharges in NR 106.59: *"Re-located POTW outfall" means any point source outfall structure associated with a previously issued WPDES permit that is moved or constructed after the effective date of this rule ... [revisor insert date] to convey wastewater to the same receiving water where fish and other aquatic life are materially exposed to a modified phosphorus pollutant load."*
- The definition of phosphorus impaired water in s. NR 217.11 (4) should be limited to phosphorus parameters and not linked to the general terms of "nutrients" and "dissolved oxygen".
- Definitions should be consolidated in s. NR 217.03.

**Response:**

"New source" has been replaced with "new discharger" in the rule. The department believes it has appropriately defined "phosphorus impaired water" both in terms of the

proposed criteria and the fact that phosphorus is a nutrient and that excess phosphorus is a direct cause of low dissolved oxygen in water.

**C. NR 217.12 and NR 217.15 General**

- ***Revise ss. NR 217.12 (1) (a), NR 217.15 (1) (a), and NR 217.15 (1 )(c) Wis. Adm. Code to match the language in 40 CFR § 122.44 (d) (1) (i) and (ii), to provide that a water quality-based effluent limitation (WQBEL) will be set when the Department determines that a discharge will cause, has the reasonable potential to cause, or contribute to an excursion above the phosphorus water quality criterion.***
- Amend the proposed language to clarify that it will establish phosphorus limits in WPDES permits where the discharge from a point source contains phosphorus at concentrations or loading which will cause, have the reasonable potential to cause, or contribute to an exceedance of the applicable criteria in NR 102.06 in the receiving water or downstream waters.
- ***Include a provision to ensure compliance with federal antidegradation requirements, 40 C.F.R. 131.12, stating: "(3) For a new or increased discharge of phosphorus, the amount of new phosphorus loading permitted shall be limited to that which has been shown by the applicant to be necessary to accommodate important social or economic development."***
- A recognition should be included in ch. NR 217 that the proposed limits more stringent than "effluent concentrations consistently achievable through proper operation and maintenance" as defined in s. NR 210.03 (5) as follows: "For a given pollutant parameter, the 95$^{th}$ percentile value of at least two years, excluding values attributable to upsets, bypasses, operational errors, or other unusual circumstances."
- There is a need for a simple procedure/guidance – *simpler than a TMDL* - to be developed by the department and approved by EPA allowing for the establishment of point source limitations under the sole authority of the department.
- Retain alternate technology based limit provisions in ch. NR 217; especially for enhanced biological phosphorus removal.

**Response:**

The rule has been revised to include the phrase "cause, has the reasonable potential to cause or contribute to, an exeedance of the water quality standards . . . . " Antidegredation is addressed in ch. NR 207 and appropriate reference to this code has been included. The department does not have the authority to establish an alternative to TMDL development in this rule and these provisions are to establish and implement water quality based effluent limitations, so the alternate technology based limit provision does not apply.

**D. NR 217.12 (1) (a) and NR 217.13 (1) (b) Downstream Impacts**

- The language in this section lists criteria but lacks any ascertainable standard and is too broad and uncertain. How far "down" is downstream?

- ***Develop guidance for staff as they review the factors in considering whether a discharge may affect a downstream water.***
- Language relating to determining limits based on downstream effects should be amended to reference a significant adverse effect.
- In the absence of a TMDL, the criteria should be applied at the point of discharge or the point an effluent dominated stream enters a non-effluent dominated stream.
- Engage in additional discussion with a diverse group of stakeholders to develop guidance regarding how to interpret/apply the distance factor.
- Consider additional factors in determining whether a discharge will affect downstream waters, specifically the concentration of phosphorus in the receiving water and the downstream water and the contribution of phosphorus from upstream and downstream sources that impact the downstream water.
- The criteria in s. NR 102.06 should only be applied at the point of discharge. Any discharges based on downstream effects should be based on a US EPA – approved TMDL after the WDNR has listed the body of water as impaired for phosphorus
- The Department should provide guidance in the rules to clarify that effluent limits for point source dischargers be established to protect receiving waters and eliminate references to "or downstream waters.

**Response:**

These comments refer to the relationship of the phosphorus criteria, WQBELs and impacts to downstream waters. US EPA has not provided instruction or methods on how these impacts are to be factored and calculated. Until US EPA issues guidance on this issue, the department will recognize that downstream impact may be considered, but it is limited in determining a process of how to consider these impacts in permits until further federal direction is available.

**E. NR 217.13 Calculation of WQBELs**

- ***Create a note, state in the record, or revise the rule to explicitly provide that the Department may use representative data that are older than five years.***
- ss. NR 217.13 (3) and (7) Wis. Adm. Code identify circumstances when limits would be set equal to criteria. These rules do not conform to 40 CFR § 122.45 (d) (made applicable to States by 40 CFR § 123.25 (a) (16)).
- For continuous dischargers, this regulation provides that, unless impracticable, limits shall be set as average weekly and average monthly values for POTWs and maximum daily and average monthly values for other dischargers. So as to not preclude the establishment of limits in accordance with federal regulations, revise the noted rules to provide that the wasteload allocation will be set equal to criteria. Please see chapter five of the *Technical Support Document for Water Quality-based Toxics Control* (EPA/505/2-90-001, March 1991) for considerations that may be relevant when establishing WQBELs.
- ***s. NR 217.13(4) Wis. Adm. Code provides that the Department shall set effluent limits consistent with model results for discharges to the Great Lakes. Add language to the first sentence to establish that limits based on model results will***

***conform to any mixing zone granted under ch. NR 102 and any applicable approved wasteload allocation.***

- Add language to the second sentence in s. NR 217.13 (4) to establish that a permit with an interim limit will include a final WQBEL where a discharge will cause, has a reasonable potential to cause, or contribute to an excursion beyond water quality criteria. (*See* 33 U.S.C. § 1311 (b) (1) (C) and 40 CFR § 122.44 (d).)
- ***s. NR 217.13 (4) Wis. Adm. Code provides that the allowable load shall be divided among the various discharges, when the Department determines that more than one discharge may affect the quality of the same receiving waters. Supplement this language to establish an affirmative requirement that the Department will determine whether more than one discharge may affect a body of water.***
- ***Please revise s. NR 217.13 (8) (a) Wis. Adm. Code as follows: "The new source of phosphorus is allocated as part of the wasteload allocation or reserve capacity in an EPA approved TMDL."***
- ***Amend the proposed language to state that the "...the Department <u>will</u> calculate the limitation based on more stringent downstream water quality criteria if the discharge will affect the downstream water."***
- Include language requiring WQBELs where the discharge will *cause or contribute* to a violation of water quality standards in the receiving water and downstream waters.
- The implementation of total phosphorus (TP) criteria may not prevent detrimental impacts to important biological measures of aquatic life in rivers with point source dischargers that are primarily composed of dissolved phosphorus (DP) unless protective assumptions are made in the calculation of permit limits that recognizes the ongoing and potent effect of continuous dissolved phosphorus dischargers to the nutrient status and aquatic life health of a water;
- Wisconsin's algal thresholds also indicate that significant increases in algae are likely at levels less than the criteria (particularly for rivers where increased algae is seen at concentrations greater than 0.064 mg/L TP).
- Fish, macroinvertebrate, and algal thresholds showed that effects to these measures of biotic integrity began to occur at levels less than the proposed criteria for streams.
- Revise to explicitly state that the wasteload allocation from a TMDL can be used as an alternative means of calculating an effluent limitation for existing sources, with specific reference being made to s. NR 217.16.
- Establish WQBELs that are no more stringent than 0.5 mg/l, to allow industries to avail themselves of more affordable treatment technologies.
- Presumes all WWTPs need to have limits of 0.1 mg/l; except lake Michigan dischargers need to achieve 0.007 mg/l
- Any limit less than the current technology-based ch. NR 217 limit should only be developed following completion of a TMDL.
- Current ch. NR 217 technology-based limitations for lagoons and small WWTPs including the 150 pound per month exemption should be maintained unless WDNR can document that downstream non-attainment of designated uses is occurring and that the discharger is a significant source of phosphorus.

- The current de minimus level of effluent phosphorus limits of 150 pounds per month for facilities regulated by ch. NR 210 and 60 pounds per month for other facilities should be maintained.
- Research by WERF indicates the current technology limit is greater than 0.1 mg/l for a monthly average.
- Determination of whether an existing lagoon can meet the effluent limitations in s. NR 217.13 should be based on the performance of that lagoon system only.
- Given that raw (influent) wastewater phosphorus concentrations can be expected to be in the range of 40 mg/l, treatment to 100 ug/l (0.1 mg/l) requires 99.75% removal of phosphorus from the wastewater. The most stringent limitation should be no lower than 100 ug/l (0.1 mg/l).
- Against use of data in WQBEL calculation from similar locations.

**Response:**

The rule has been revised to allow for the use of representative data older than five years.

For very low limits (those at 0.3 mg/l or below) water quality standards and use are protected based on longer averaging times because the concentrations in the discharge are so low. The department has recognized this and provided for annual averaging at these very low limits, with a maximum monthly average to ensure protection of water quality.

Some comments involve the use yet-to-be-developed models for calculating WQBELS for Great Lakes discharges. US EPA is developing these models and until they are available, there is no method to calculate a WQBEL. Since there is no way to calculate a WQBEL, one cannot be included in the permit. The department will include an interim limit of 0.6 mg/l in permits to direct discharges to the Great Lakes until methods exist for calculating a WQBEL.

Downstream impacts and reasonable potential issues are addressed in responses to comments under sections D and C above.

The rule contains a great deal of flexibility in regards to limits set consistent with TMDLs. Limits based on TMDLs will be included in permits, compliance schedules may be granted due, in part, to the development of TMDLS, and the adaptive management option allows permittees a great deal of flexibility to engage in partnerships to address nonpoint phosphorus contributions. Even if a WQBEL is effective in a permit, it can be replaced by a less stringent TMDL-based limit if antidegredation issues are addressed.

The balance of the comments in this section were rhetorical, informational or beyond the scope of this rule-making effort.

**F. NR 217.13 (2) Flow Statistics**

- Use a 7Q10 flow statistic to ensure that the criteria is met even at low flows equal to the 7 day lowest flow found in a particular water at a 10 year return frequency to help prevent nuisance algal accumulations.
- Suggested flows would allow concentrations greater than the criteria for a duration of time (7 days or 30 days) and at a recurrence (every two or three

years), which could lead to water quality problems for too long a duration and too often to protect instream uses.

- Instream flow statistics that deviate from the recommended 7Q10 flow must be justified by a review of available scientific information and show that phosphorus criteria and narrative criteria prohibiting nuisance conditions will be met in order to adequately protect all designated uses in the receiving water.
- Use of the 7Q2, the 30Q3, or other flows deemed by the department to be more representative of "average" flow conditions when calculating a water quality based effluent limitation makes sense given that phosphorus is not a toxic substance.
- Flows for determining the need for limits should be based on the growing season average at a minimum or, preferably, an annual average.
- Because of the lack of phosphorus concentration information and flow data, it is not possible to estimate site-specific impacts. The South Branch of the Rock River has much lower concentrations than previously reported.
- Use flow estimates based on drainage area and correlated with gauging stations on similar, nearby streams. Recommend deleting language in s. NR 217.13 (2).

**Response:**

The department believes that the 7Q2 flow is the appropriate flow measure and is protective of water quality and use.

**G. NR 217.13 (2) (d) Upstream Concentrations**

- Require the collection of at least 6 samples, one per month each month between May and October. Nearly all monitoring programs designed to adequately sample for water quality call for – at a minimum – monthly samples.
- All determinations of background phosphorus concentrations should be based on actual data in the receiving water and not data from a different location due to significant variability in background concentrations due to a number of factors.
- Using upstream concentrations for reissuing a permit should be based on a minimum of 3 seasons of samples (i. e. minimum of 12 samples total).
- NR 106 allows higher limit if the background water quality is above the standard and the discharger's "relative contribution" is negligible.

**Response:**

This section is to establish the procedures for determining upstream concentrations for the WQBEL calculation equation. The department is confident of the methods and data frequency provisions in this section. If an entity is concerned about the use of data from a "similar location", they are welcome to collect and provide data from the specific waterbody.

**H. NR 217.13 (3) Discharges to Inland Lakes and Reservoirs**

- Requiring dischargers to reservoirs to comply with effluent limits equivalent to the to the criteria fails to take into account dilution and attainment status of the

specific waters as well as to target the sources of P proportionally to their contribution to the non-attainment status.

- There is a lack of a mixing zone (dilution factor) for lakes.
- Limits more stringent than those current technology-based ch. NR 217 limits for direct inland lake or reservoir discharges should be based on an USEPA approved TMDL or equivalent.

**Response:**

If the discharge is to a lake that meets the applicable criterion, the reasonable potential analysis will likely result in a "no-limit necessary" determination by the department. In addition, a limit can be based on the wasteload allocation in a TMDL, consistent with other waters.

**I. NR 217.13 (4) Discharge Directly to Great Lakes**

- Impose effluent limits based on the best technology used anywhere in the country.
- ***The proposed rule authorizes WDNR to issue WPDES permit for discharges to Lake Superior and Lake Michigan that may cause or contribute to an exceedance of the phosphorus water quality standard without necessary WQBELs, and without any justification for failing to include necessary limits.***
- Define "best readily available phosphorus removal technology commonly used in Wisconsin."
- Evaluate Lake Michigan needs before imposing any limit, including interim limits.
- Near shore criteria should be developed for Lake Michigan and Lake Superior rather than using the open waters criteria currently in the proposed rule. Significant dilution of point source discharges occurs when they reach open waters. Higher dilution factors for these discharges should be considered at a minimum.

**Response:**

No model exists to calculate WQBELs for water as large and dynamic as the Great Lakes. US EPA is developing such a model. Until the model or other methods for calculating a WQBEL in the Great Lakes are available, the department is proposing an interim limit of 0.6 mg/l.

**J. NR 217.13 (7) Minimum Effluent Limits**

- Minimum effluent limits are inappropriate because they do not consider lower effluent limits derived from TMDLs or required under antidegradation analysis.
- The rule fails to ensure that WPDES permits protect all the receiving waters' designated uses and existing uses, as well as all narrative criteria, and protect all downstream uses and criteria.
- ***The proposed rule should establish the criterion for the specific water as the most stringent limitation which can be applied to a point source discharge,***

***regardless of the procedures used to compute the limitation and that this rule specifically apply to limitations derived from TMDLs.***

**Response:**

These provisions are consistent with federal and state statues, regulations and codes, except where water quality based effluent limitations derived from total maximum daily load allocations may be more stringent, according to state statutes.

**K. NR 217.13 (8) New Sources**

- This provision should be limited to 303 (d) listed waters.
- We are concerned that s. NR 217.13 (8) (b) authorizes a new source to discharge phosphorus to a phosphorus impaired water if it is able to demonstrate that the new discharge of phosphorus will "improve water quality in the phosphorus impaired segment." How will the department make this determination?
- This provision is inconsistent with federal law as stated in *Friends of Pinto Creek v. U.S. EPA*, 504 F.3d 1007 (9th Cir. 2007) which rejected, under 40 CFR 122.4 (ii), allowing new discharges pursuant to a trading scheme that was not part of a plan to secure compliance of the water body with water quality standards. Any proper trading scheme requires that a comprehensive cap be developed and that the provisions of the trade be fully enforceable by WDNR and the public.
- New sources should be regulated under s. NR 217.15 (e) for the proposed receiving stream.

**Response:**

New dischargers could improve water quality in a receiving water in a number of ways. For example, a large effluent volume with a very low phosphorus concentration – well below the applicable criterion – would improve water quality. The department will make this determination on a case-by-case basis. In regards to trading, any trades must be approved by the department, which will ensure that all applicable regulations applicable to the trade are met.

**L. NR 217.14 Expression of Limitations**

- ***Unless impracticable, limits shall be set as average weekly and average monthly values for POTWs and maximum daily and average monthly values for other dischargers.***
- All pollutants must have mass limits except when applicable standards are expressed in terms of other units of measurement.
- Phosphorus WQBELs must be stated as both a concentration and load whenever possible.
- For permits allowing new or increased pollution loadings, calculation of a load limit is necessary to determine the amount of assimilative capacity being used by the discharge for purposes of determining compliance with the antidegradation requirements.

- WDNR should require average weekly and monthly WQBELs, The expression of permit limits as weekly and monthly average concentrations diminishes the potential for recurring episodes of algal accumulation that can lead to water quality impairments.
- ***To use averaging periods longer than one month, the Department must demonstrate that compliance with a one month averaging period is impracticable.***

**Response:**

The department believes it has appropriately identified when mass limits are necessary. S. NR 217.14 (1) (b) allows for mass limits in appropriate situations not enumerated in the code.

The Department and EPA intend to come to an agreement on how and when it is impracticable to establish 30-day or shorter averaging periods for publically and privately owned treatment works and how this determination should be included in administrative records.

**M. NR 217.14 (1) (d) TMDLs/Trading**

- Trading should only be allowed under s. NR 217.14 (1) (d) if: (1) an overall cap exists on the allowable loading for the affected water bodies, (2) the traded for loading reductions which are being used as an offset, whether from a point source or a nonpoint source, are fully enforceable by WDNR and the public, and (3) local algal blooms or other phosphorus caused impairments will not be created in any portion of the watershed.
- The note should say: *". . . The Department may approve the use of phosphorus trading as a means for a point source to achieve compliance with the water quality based effluent limitation, including a TMDL based limitation, in accordance with a trading framework to be developed by the Department."*
- Given the language in s. NR 217.16, it is not clear whether s.NR 217.14 (1) (d), is necessary.
- The rules circumvent the current nonpoint source pollution prevention program. In chs. NR 151 and NR 217, DNR has the ability to have an open ended regulatory process on farmers within a TMDL established region. Opposed to establishing TMDLs with a potential pollutant trading that has not been proposed in an administrative rule.
- Margin of safety is redundant is the trading note third sentence. Either strike "margin of safety" or the entire note.
- In cases where a TMDL has been developed, this should be the only mass limit for phosphorus placed in a permit. This language should also be expanded to allow concentration limits to be derived from a TMDL wasteload allocation. The note should say: "To the extent that trading is authorized under state statutes~~, in accordance with s 283.84, Wis. Stats.~~, the Department may approve the use of phosphorus trading as a means for a point source to achieve compliance with the water quality based effluent limitation, including a TMDL based limitation. ~~The~~

~~trade shall be incorporated into the tenns ofthe WPDE8 pennit for the point SO-UTee and must be approved by the Department prior to implementation. Any trade should consider a trading ratio, a margin of safety and must result in a vlater quality improvement. A trade may occur between two point sources or a point source and a nonpoint source or a combination thereof."~~

**Response:**

The department intends to address pollutant trading through statutory changes and development of an administrative code regarding pollutant trading in the near future. Adjustment to the note regarding trading have been made in response to comments.

**N. NR 271.14 (2) Concentration Based Limitations**

- 30-day rolling average – The use of a 30-day rolling average will cause significant compliance issues for point source dischargers, especially at the level of 0.1 mg/l. A six month or annual rolling average or a seasonal average is more appropriate for phosphorus given that it is not a toxic pollutant. If there is a need for a 30-day limit, then the limit should be the current standard in ch. NR 217, i.e. 1.0 mg/l.
- Establish policy and procedures through which the department will determine compliance and calculate penalties in the event of noncompliance with ss. NR 217.14 (2) and (3) concentration-based limits expressed as 30-day rolling averages.
- A seasonal average is more appropriate, as phosphorus loadings into POTWs tend to increase in the warmer months and may be somewhat variable. A seasonal average for the period from May 1st to October 31st is requested.
- Use of May through October data for WQBEL calculation is inappropriate and will lead to overly- restrictive limitations for point source discharges. Suggest winter month data be used as the most accurate indication of the impact of point sources and be used to establish a baseline condition for point sources. If the in stream phosphorus criteria are met during the winter months but not attained during May-October, then current point source limitations are retained.
- Seasonal-based limits should be provided as an option to facility equipment maintenance and repairs.
- Growing season means for lakes. Averaging period language is not included and should be June through September mean.
- Use of a longer averaging period than one month for phosphorus is appropriate given that phosphorus is neither an acute or chronic toxicant. It will also allow for less conservative assumptions to be used when designing upgrades to wastewater treatment plants, resulting in lower construction costs.
- Use an annual averaging period, which is consistent with the averaging period being used for both phosphorus and nitrogen in the Chesapeake Bay. An annual averaging period is also consistent with EPA's proposed criteria for the State of Florida, where the in-stream protection value criteria for rivers and streams is based on an annual geometric mean.

- Use a six month growing season (May-Oct) averaging period. This is consistent with the time frame that data used in the criteria development process was collected and is consistent with the averaging period specified in the adaptive management approach under s. NR 217.17 (4).
- Include a maximum monthly limit consistent with the technology based limits currently in ch. NR 217 (i.e. 1.0 mg/l or a facility specific alternative limit). Establishment of a monthly limit consistent with this recommendation would also be appropriate for the adaptive management option in s. NR 217.17 (4).
- There should be consistency between the 30-day rolling average in the expression of permit limitations and the effluent flow used to calculate an effluent limit.
- A 30-day rolling average is too complicated
- The use of a 30 day rolling average will cause significant compliance issues for point dischargers, especially at the level of 0.1 mg/L, where short term and seasonal variability can be expected.
- Currently, most permits that contain a phosphorus limit require the discharger to meet an effluent concentration of 1.0 mg/L as a monthly average. At the 1.0 mg/L level, this procedure has proven to be reasonable.
- Ongoing research by the Water Environment Research Foundation (WERF) has shown that at a limit of 0.1 mg/L (ten times less), the inherent variability related to the operation of a well run wastewater treatment plant increases, making occasional violations of traditional averaging periods more likely.
- A longer averaging period (i.e. 12 months) for determining compliance for phosphorus limits that are less than 1.0 mg/L will minimize the number of permit violations based on the increased level of natural variability of effluent quality from a well run wastewater treatment plant when discharging at phosphorus levels significantly below 1.0 mg/L. If there is a regulatory need for a 30 day limit, then that limit should be the current standard in ch. NR 217, i.e. 1.0 mg/L.
- A March 3, 2004 memo from Jim Hanlon, Office of Wastewater Management, EPA, stated that annual permit limits for nutrients were appropriate for protection of the Chesapeake Bay.
- Concentration limits should be expressed as annual averages in permits. Otherwise, WWTP facilities will need to be designed to fully treat short-duration peak flows; which add significant cost with not corresponding measurable water quality improvement.

**Response:**

As reflected above, a wide range of conflicting comments were received regarding how to express concentration-based WQBELs. Monthly average limits are required buy federal regulations, however, the department has developed an approach for very low limits with annual and monthly averages that is protective of water quality, but recognizes what is technologically feasible.

**O. NR 217.14 (3) Mass Based Limitations**

- Do not arbitrarily hamper attainment strategies by requiring both concentration and mass based effluent limits. This proposal essentially eliminates the ability to recycle water to reduce effluent flows.
- Intake credits should be allowed if mass limits are imposed. The net contribution of a discharger to the Lower Fox River should be the basis when setting mass limits.
- Unclear how mass limits would be applied when using the interim limits.
- Mass limits – only if an increase in phosphorus is likely to result in significant adverse impacts on water quality.
- Mass limits in addition to concentration based limits are not required (except possibly in the case of a TMDL) since the proposed effluent concentrations would be protective of water quality. Imposing mass limits in addition to concentration based limits results in effluent limits that would be lower than required to meet water quality criteria.
- Mass limits for lakes; does it apply only to inland lakes or also to Great Lakes?

**Response**:

The department believes that it has appropriately identified how and when mass limits for phosphorus will be included in permits.

**P. NR 217.15 (1) (c) Reasonable Potential**

- ***Revise the rule to contemplate such cases where phosphorus discharge data are not available.***
- ***Amend the proposed language to clarify that the DNR will establish phosphorus limits in WPDES permit where the discharge from a point source contains phosphorus at concentrations or loading which will cause, have the reasonable potential to cause, or contribute to an exceedance of the applicable criteria in NR 102.06 in the receiving water or downstream waters.***

**Response:**

These comments have all been included in the revised rule.

**Q. NR 217.16 Relationship of WQBELS and TMDLs**

- ***Add language to establish that the level of water quality to be achieved by the limitations in a permit is derived from, and complies with, the water quality standards in ch. NR 102 Wis. Adm. Code to achieve conformance with 40 CFR § 122.44 (d) (1) (vii) (A).***
- ***Add language to establish an affirmative requirement that limits will be set consistent with the assumptions and requirements of any approved TMDL to achieve conformance with 40 CFR § 122.44 (d) (1) (vii) (B).***
- ***Explain in a note or the record for the rule that a permit modified or reissued in the manner contemplated here is subject to the State's antibacksliding provision. If antibacksliding is not so recognized, then Wisconsin must revise s. NR 217.16 (1) to expressly provide that a permit which is modified or reissued***

***to contain a less stringent limit is subject to 33 U.S.C. § 1342 (o) and 40 CFR § 122.44 (l).***

- Clarify WDNR will determine whether to allow less stringent effluent limits based on a TMDL. It appears that the department may allow the less stringent TMDL-based limits to stay in effect for up to 3 permit terms even where the TMDL or TMDL implementation plan provides no reasonable assurances for relying on or anticipating real nonpoint loading reductions. Further, the rule might allow weakened permit limits even where it becomes apparent during the TMDL implementation period that the TMDL is not in fact resulting in the needed reductions in nonpoint loading.
- Phosphorus limits less stringent than the WQBELs calculated under s. NR 217.13 should only be allowed under a TMDL if: (1) the TMDL has been federally approved, and (2) it has been shown on the record that there is reasonable assurance that the point or nonpoint load reductions that are the basis for allowing the less stringent limits will *in fact* occur. Further, WDNR must revise any less stringent limits during the TMDL implementation if it becomes apparent that the nonpoint source load reductions are not in fact occurring as planned.
- A TMDL should not be in addition to a WQBEL under ch. NR 217. Where a TMDL is adopted, it should be the WQBEL. Similarly, the timetable for implementation should not be artificially limited to two permit terms. The timetable should coincide with the TMDL process. If a TMDL contains an implementation schedule, the length of time that a TMDL-based limit should remain in the permit should be consistent with the implementation schedule.
- Delete the words "in addition to" from the second sentence of s. NR 217.16 (1). Including both a TMDL derived WQBEL and a WQBEL calculated under s. NR 217.13 in a permit does not make sense.
- Revise this section to state that in cases where a TMDL implementation schedule has been developed, the length of time that a TMDL derived WQBEL can remain in a permit will be consistent with the time frame specified in the implementation schedule. The rule should not unnecessarily constrain the time period that a TMDL based limit is in place.
- The compliance schedule in this section should be consistent with the schedules of compliance laid out under s. NR 217.17. That section recognizes that while compliance should be accomplished as soon as possible, there are situations where compliance schedules beyond five (5) years are reasonable.
- Clarify that a WPDES permit would not include two separate phosphorus limits. Where a TMDL is adopted for a given watershed, permit limits for dischargers subject to the TMDL should be based on the TMDL recommendation. Similarly, the timetable for implementation should not be artificially limited to two permit terms. The timetable should coincide with the TMDL process. If a TMDL contains an implementation schedule, that schedule should govern and be incorporated into the permit.
  Permits should not include a TMDL-based limit and a WQBEL. There should be a single limit for the same substance. Recommend that "in addition to" be deleted.
- TMDLs should be considered as custom tailored and should be superior to the application of a generic statewide standard. Limitations resulting from a TMDL

should be allowed to remain in place until such time as the impairment has been eliminated and the TMDL expires.

- Don't prejudge when and only when a TMDL may be used in this rule or to promise in advance to abandon TMDL responsibilities.
- Lacks specific metrics to determine whether a nonpoint source is a significant phosphorus sources responsible for its impairment. Include specific metrics, such as a percent reduction in the receiving stream, to provide the regulated community more certainty on their compliance obligations.
- The rule appears to confine and confuse the use of site-specific criteria for nonpoint source dominated watersheds, which is not representative of EPA's approach for watersheds. Modify to eliminate this preference for nonpoint source watersheds, and allow this science-based approach to establish appropriate criteria for specific watersheds as the need arises.
- Concerned with "Wisconsin only" WQBELs. No other state has proposed permit procedures. Should postpone any revisions until EPA promulgates uniform national regulations that strike an equitable balance between point and nonpoint source discharges of phosphorus.

**Response:**

The code has been revised, in rule and notes, to be consistent with federal regulations as identified in the comments for this section. The department believes that inclusion of a TMDL-based limit, as provided in this section, and in conjunction with other rules (such as ch. NR 151), provides the reasonable assurance that nonpoint reductions will occur. In additions adjustments to the TMDL-based limit are allowed if necessary. Several comments were received regarding inclusion of both a WQBEL and TMDL limit in a permit. Federal regulations require that the WQBEL limit be included, even if it is superseded by a TMDL-based limit (if nonpoint reductions are made in the watershed). This section is consistent with this construction.

**R. NR 217.17 (1) and (2) Schedules of Compliance**

- ***Explain in a note that the "necessity" and "as soon as possible" standards in s. NR 217.17 (1) (a) apply in each place in ch. NR 217, Subchapter III, wherein a compliance schedule is contemplated or may be inferred.***
- ***A compliance schedule based solely on time to develop a TMDL is not appropriate for conformance with 40 CFR § 122.47. Remove paragraph (1) (c) (3) from s. NR 217.17.***
- ***Compliance schedules must be designed to achieve compliance with water quality based effluent limits as soon as possible.***
- WDNR must not utilize compliance schedules to delay compliance with WQBELs while the regulated point source awaits nonpoint sources to voluntarily reduce pollution.
- ***Compliance schedules longer than one year must contain yearly enforceable interim requirements and dates for achievement to achieve compliance with 40 C.F.R. § 122.47 (a) (3).***

- WDNR should consider any good faith efforts to achieve compliance prior to permit reissuance. Failure to do so would essentially reward permittees that fail to take any actions to optimize plant performance or develop a plan for compliance prior to permit reissuance by providing those permittees with a longer time frame in which to achieve compliance.
- A seven to nine-year compliance schedule is likely to be inadequate in a significant number of cases. Some facilities will be looking at trading and other options for compliance before committing to major facilities planning. Major facilities planning, financing and construction will require time after that point. At a minimum, this section must acknowledge that seven to nine-year periods may be extended upon a showing of good cause.

**Response:**

A note has been included to explain "necessity" and "as soon as possible". Development of a TMDL is only one of many factors to be considered in granting a compliance schedule. See s. NR 217 (1) (a) 1. regarding achieving water quality standards as soon as possible. The rule has been revised to provide that compliance schedules longer than one year contain yearly enforceable interim requirements. See s. NR 217 (1) (b) 3. regarding good faith efforts on the part of a permittee. If a seven to nine year compliance schedule is unlikely to achieve compliance, the adaptive management option may be more appropriate.

**S. NR 217.17 (3) Interim Limitations/Pollutant Trading**

- ***The monitoring contemplated in these rules does not fit within the meaning of "compliance schedule" in 33 U.S.C. § 1362 (17) and 40 CFR § 122.2 because is not an action or operation which will lead to compliance with the effluent limitation in a permit as initially issued. Strike these provisions from s. NR 217.17 (3).***
- ***Supplement the list in s. NR 217.17 (3) to include preparation of preliminary and final designs for new or modified treatment technology, the initiation of construction, and the completion of construction.***
- ***Incorporate the provisions of 40 CFR § 122.47 (a )(3) and (4) into s. NR 217.17 (3) Wis. Adm. Code and add a note to clarify that the provisions of 40 CFR § 122.47 (a) (3) and (4) apply in each place in ch. NR 217, Subchapter III, where a compliance schedule is contemplated or may be inferred.***
- ***A local pollutant trading program that applies to the receiving water does not fall within the meaning of "schedule of compliance" in 33 U.S.C. § 1362 (17) and 40 CFR § 122.2 because it is not an action or operation leading to compliance with an effluent limitation. Strike this provision or revise it to provide that a compliance schedule may include implementation of one or more trades that apply to the permittee, provided that such trade is established and incorporated into the permit so that it is enforceable.***
- Interim numerical limitations, as provided in s. NR 217.17 (3), are not WQBELs. Wisconsin must revise this rule to provide that the WQBEL will be established in

the first permit term to achieve compliance with 33 U.S.C. § 1311 (b) (1) (C) and 40 CFR § 122.44 (d).

- Clarify the availability and applicability of the interim limits, including the phosphorus limit that would apply outside of the initial 0.6 mg/l seasonal average.
- Interim limits for facilities should be based on the performance of that facility only.
- WDNR should consider interim limits for Great Lakes dischargers equal to those proposed for the adaptive management approach (0.6 mg/l for the first permit term) for simplicity.
- Recommend greater flexibility for interim limits than the 0.6 mg/l.

**Response:**

The rule has been revised to comply with the first five bullets of the comments in this group. The other comments are addressed in either the adaptive management section (s. NR 217.18) or the Great Lakes section (s. NR 217.13(4)).

**T. NR 217.17 (4) Adaptive Management Option**

- ***Whether a pollution control technology is expensive or not is not, by itself, a sufficient basis to justify a compliance schedule. However, a compliance schedule may be provided to adjust sewer use rates or securing financing for design and construction of a technology. Revise s. NR 217.1 (4 ) (a) 4. c. and (c) accordingly.***
- ***Include companion provisions which will produce the needed nonpoint source reductions. Establish a total maximum daily load for the waterbody and make the determination and finding, and promulgate the targeted performance standards, as required under s. NR 151.004 Wis. Adm. Code.***
- ***Exercise legal authority provided in ss. NR 243.26 (2), 216.21 (2), and 216.51 (3) to designate animal feeding operations, commercial sources, and land disturbing activities as point sources subject to the permit program.***
- ***Compliance schedules under 40 CFR 122.47 and 40 CFR 130.2 (i) allow less stringent controls on point sources under TMDLs if there is reasonable assurance that water quality standards can be met through "Best Management Practices (BMPs) or other nonpoint source pollution controls."***
- It is illegal to simply exempt or extend categorically compliance periods for classes of point sources. Allow and encourage point sources to seek out and implement enforceable long-term phosphorus reductions in the most cost-effective manner.
- A point/non-point trading regime should allow communities to cost-effectively reduce phosphorus loadings by capturing low-hanging nonpoint source reductions. Set a phosphorus criteria "cap" for point sources and a reliable method for quantifying phosphorus reductions from non-point sources.
- Identify the size of the watershed DNR will evaluate in determining whether nonpoint sources contribute more than 50% phosphorus criteria. Will WDNR account for just the receiving stream, or also consider the larger watershed impairments?

- If there is a basin wide TMDL, that scale should determine the percentage. If there is not a TMDL, then the Department should specify a basin by the 8-digit hydrologic unit code level, as is currently proposed in s. NR 151.13 (2) (b)3 .b., which is roughly equivalent to the Department's geographic management units
- Insert the following or similar language to define scale: "The department will determine the appropriate scale for making the determination o f the percent contribution from nonpoint sources on a case-by-case basis. In cases where a basin wide TMDL has been established, the scale shall be consistent with the scale used in the TMDL".
- Restricting this option to where nonpoint is 50% of the load is unclear and too restrictive. Even if nonpoint is less than 50%, it could still be a significant portion of the load, and if so an adaptive management plan still makes sense. If a percent is required it should be set no higher than 25%.
- Retain the adaptive management option so that instream water quality improvements resulting from other phosphorus control measures may be realized before POTW's are forced to invest in extremely costly filtration. Available science indicates that these nonpoint and urban storm water runoff sources should be controlled first.
- Delete the section from the proposed rule that requires the POTW to prove, in advance, that nonpoint source reductions will achieve water quality requirements; an unreasonable burden to place on the permittee who seeks to apply for the Option.
- Delete the language from the proposed rule that essentially creates a "point sources first" burden to achieve instream water quality. If the point source control will achieve water quality, regardless of cost, then the nonpoint sources need not do anything.
- Include language that the department shall grant a request by the POTW in any case where the POTW commits to perform the instream water quality sampling required and to achieve the interim limits set out in this section.
  Unclear what limits would apply remainder of year.
- Specify which water bodies qualify.
- Allow use where additional water quality monitoring would be beneficial to observe the effects of continued improvement efforts on water quality.
- Supportive of adaptive management approach, but the Department should not proceed without written assurances from EPA that this approach will be approved.
- Recommend that existing technology based limits in s. NR 217.04 and alternative limits remain in effect.

**Response:**

Based on these comments, the department removed references to expensive technology, revised eligibility to provide more availability for the adaptive management option, and revised the requirement that the point sources demonstrate that nonpoint reductions alone will achieve water quality criteria. Several comments were received asking the department to define the scope over which the 50% nonpoint threshold would be measured. As this will vary widely across the state, the department did not believe it

advisable to artificially limit the availability of this option by limiting the scope. Several other comments were either rhetorical or did not apply to this rule, however, in the second bullet, ch. NR 151 is referenced and that rule is, in fact, consistent with that comment.

**U. NR 217.17 (4) (c) Schedule of Compliance**

- ***Revise the rule so that the list of mandatory interim requirements in s. NR 217.17 (4) (c) is not exhaustive. To illustrate this point, treatment equipment which is not "readily" affordable may nevertheless need to be installed to achieve compliance.***
- ***The rule does not define the meaning of the words, "readily affordable."***
- ***Require that a compliance schedule shall include the installation of the treatment equipment as needed to achieve compliance with the WQBEL as soon as possible to achieve compliance with 40 CFR § 122.47 (a) (1).***
- Define "expensive technology" and the types or costs of "expensive controls" that must be implemented by an eligible permittee. Are only point sources that must install advance filtration technology eligible?
- Provide justification for including a 0.6 mg/L interim limit during the first permit term, and a 0.5 mg/L interim limit during the second permit term, and how imposition of these interim limits will result in or create incentives for nonpoint source phosphorus reductions.
- ***The rule does not provide for ultimate compliance with the WQBELs or criteria, as it merely authorizes, rather than mandates, DNR to require compliance with WQBELs during the 3rd permit term.***
- Require compliance within 15 years of adoption of the phosphorus criteria, rather than 3 permit terms, to ensure that permit backlogs and delay caused by permit challenges and other administrative delays does not allow this specialty compliance schedule to delay compliance indefinitely.
- The compliance schedule should be based upon the TMDL set for the water body.
- Use the monthly limit values in s. NR 217.04 (e.g. 1 mg/l or an alternate limit) for s. NR 217. 17 (4) (c) (4) (a).
- The compliance schedules for third permit terms calculated under NR 217.13 should be consistent with s. NR 217.17 (1) and (2), which allow for compliance periods greater than 5 years.
- Consider two standard permit terms for time period to collect data, provide monitoring and select appropriate implementation of any constructed capital requirements.
- There should be assurance that each reissuance will not require an additional capital investment. If the discharger is required to complete capital improvements at each permit reissuance, this will lead to a piecemeal treatment process for the discharger.
- ***Require that a TMDL be developed if the water quality criteria have not been met by the end of the second permit term and develop the compliance schedule consistent with the TMDL implementation schedule.***
- NR 217 should incorporate flexible compliance options because of the lack of precise breakpoints for phosphorus water quality criteria.

- Maintain the adaptive management provisions, but do not prejudge the compliance timeline established in the third permit term particularly where there is a longer response time for the water body.
- Clarify that TMDL implementation or the adaptive management implementation may exceed the 7 to 9 year compliance schedule

**Response:**

References to "readily affordable" and "expensive technology" were removed. The adaptive management option section was thoroughly rewritten and was moved out of the compliance schedule section and placed in its own section. A plan is now required on how compliance will be achieved and WQBELS are required in all permit terms, even though interim limits are identified in the first two terms. This option does not preclude the development of a TMDL. Implementation of a TMDL will include limits consistent with the load allocation and participation in the adaptive management option will not preclude inclusion of those limits and appropriate compliance schedules either by opting out of the option or during the third permit term.

**V. NR 217.18 Variances – stabilization ponds and lagoon systems**

- The broad variance proposed for existing stabilization ponds and lagoon systems fails to comply with the Clean Water Act.
- WDNR has failed to provide adequate justification for a broad categorical variance for stabilization ponds and lagoons that is any different than the general variance procedures in state and federal law. Without critical site specific information regarding treatment availability, user fees, and water quality impacts, WDNR simply cannot justify a categorical variance for the approximately 150 lagoon systems and stabilization ponds in the state
- Make lagoon variance procedure available to industries.
- Add recirculating sand filter systems to the lagoon and stabilization pond variance.
- Expand applicability of continued variances under s. NR 217.18 (5) (b) to industries and add the phrase "as applicable to the type of facility".
- Variances should only be issued where the receiving water will eventually meet water quality standards.
- Variance procedures must be consistent with the substantive requirements of 40 C.F.R.§ 131 and must not be granted either to remove an existing use or where a use may be attained by implementing cost-effective and reasonable best management practices for nonpoint source control.
- Consider implementation of best management practices for nonpoint sources as a prerequisite to obtaining a variance and as a term of an issued variance.
- Variances must not be used to delay compliance while a point source awaits voluntary reasonable and cost effective reductions from non-point sources.
- Variances should ensure that 1) the justification for obtaining a variance includes documentation that treatment options that will lead to attainment of the standards have been carefully considered, and that alternative effluent control strategies

have been evaluated, 2) the criterion is maintained and is binding upon all other dischargers on the stream or stream segment, and 3) the discharger is required to meet the applicable criteria for other constituents.

- At a minimum a variance application must include: 1) Information regarding the quality of the effluent and of the receiving water; 2) A list of treatment technologies and alternative effluent control strategies, including installation and operating cost estimates, the applicant evaluated and a detailed justification why the option will cause widespread social and economic impacts (for a municipality this must include an analysis of projected user fees in the community); 3) A detailed analysis outlining how the phosphorus water quality criteria will be attained, including steps that ensure reasonable progress will be made towards this goal, and a plan for accomplishing the work necessary to bring the facility into compliance; 4) An analysis of reasonable and cost-effective best management practices for nonpoint sources the applicant can implement to achieve the standard; and 5) Documentation that state and federal funding is not available to assist the applicant, including state Clean Water Fund and hardship program funds.
- Permittees obtaining a variance should closely monitor their effluent to document reasonable progress towards achieving the water quality based effluent limits and monitor and record the mass and concentration of phosphorus in their effluent at least 3 times per week.
- Variances may only be granted for a specific period of time not to exceed three years – see Wis. Stat. § 283.15 (5) (b). WDNR should authorize only one variance renewal, if adequately justified.
- Variances must contain enforceable initial effluent limits and conditions or "steps" necessary to ensure the permittee is making reasonable progress towards attaining compliance with water quality standards.
- WDNR has provided no analysis or documentation regarding the presumed "widespread social and economic" damage that will occur at each facility if a variance from phosphorus water quality criteria is not granted.
- WDNR has not provided the requisite documentation that the more stringent technology controls have been carefully considered, and that alternative effluent control strategies have been evaluated.
- The rule fails to demonstrate the relevance of the size of the communities served, that those facilities cannot meet WQBELS, that construction of a new facility is the only available option for achieving WQBEL, or that more construction will result in a widespread economic and social impact.
- The proposed rule and accompanying documentation do not demonstrate that WDNR considered any other type of control than construction of a new wastewater treatment plant, performed the requisite economic analysis establishing that construction will cause widespread economic harm, or considered how much the technology will cost or who will bear that cost.
- WDNR should amend the proposed variance language to ensure compliance with the following requirements: 1) The proposed variance must prohibit all other dischargers on the same stream segment from receiving a phosphorus water quality variance. According to EPA's requirements for approving a water quality

variance, Wisconsin may not issue a phosphorus water quality variance to more than one facility discharging into the same stream segment. 2) A discharger who receives a variance from phosphorus water quality criteria must meet the applicable criteria for all other constituents. 3) Variances from water quality standards expire every 3 years, at which time the discharger must either have made a new demonstration of unattainability upon expiration or comply with applicable water quality criteria. In fact Wisconsin state law unequivocally states "[a] variance applies for the term ... not to exceed 3 years."

- The lagoon variance should not be limited to one permit term. Communities with lagoon systems should be able to continue the variance until the lagoon system needs to be replaced.
- Systems currently defined as exempt under NR 217 (less than 150 pounds/month of phosphorus) in the streamlined variance should be included. Such facilities are from small communities with little ability to afford or operate filtration systems. They collectively account for very little of the phosphorus in our waters. As a practical matter, adding 140 small facilities to the 142 lagoon facilities will mean processing standard variances for as many as 282 communities. This is not a wise use of resources for either these communities or the Department and it will not materially change water quality.
- Include the need for technologies other than phosphorus removal technologies in the consideration for compliance schedules. The rule only considers the need for end of pipe removal treatments for justifying a timeline and ignores pollution prevention type projects upstream of plants or effluent recycling projects.

**Response:**

This section does not provide a categorical variance, but a streamlined process for small communities and industrial facilities to apply for a variance under the widespread social and economic impact factor allowed in ch. NR 200. Industry and communities can also apply for a variance under s. 283.15, Stats. and ch. 200. A number of comments to this section apply to variances in general and to the factors that should be considered for any variance. These comments do not apply to the narrow focus of this rule provision, as they would require revisions to both s. 283.15, Stats. and ch. NR 200.

**W. Site Specific Comments**

- Would the City of Superior even need interim limits? They discharge to the harbor area through multiple outfalls.
- Recent permits made our situation worse; Georgia Pacific allowed to double phosphorus releases.
- Develop and implement TMDLs, where appropriate. Use the TMDL development efforts in the Fox/Wolf Watershed

**Response:**

Whether the City of Superior needs interim limits will depend on the current level of phosphorus in its discharge, the ambient water levels of phosphorus in the receiving

water, and any flexibility option the City chose to pursue. Without more information, it is impossible to speculate on the comment regarding Georgia Pacific. The department is pursuing development of TMDLS as fast as resources allow.

**X. Dairy Industry Concerns**

- Technology to achieve levels required to meet the proposed discharge limits is unproven in the dairy processing industry. Multiple technologies are likely needed. Very limited experience is use of these systems in Wisconsin.
- Tertiary treatment systems offer minimal or no return on investment; adding to the difficulty in attaining financing.
- Suggest cooperation with industry to study the efficacy of technologies new to unique effluent systems.
- Suggest a study and education period for pilot or full-scale systems of no less than 5 years to determine the cost and effectiveness of new technologies for each unique effluent system. Following the study period the Department shall grant a schedule of compliance in permits with similar effluent systems that plant to adopt a studied technology. This schedule of compliance would include a minimum study adoption time of no less than 9 years form the date that this new technology study period ends. In cases where a compliance schedule extends beyond 9 years, the Department may revise the schedule at reissuance of a permit.
- Limited area to expand; cost concerns. Phosphorus removal will lead to greater need to remove chlorides. Removal during cold weather may not be achievable. Not all phosphorus is usable for plant growth in waterways. Research may show that it is unnecessary to achieve such limits.
- Criteria will result in designation of many impaired waters which may necessitate thousands of new TMDLs; which in turn will trigger implementation of ch. NR 151 performance standards and increased costs for thousands of Wisconsin dairy and livestock farmers.
- Concerned over significant costs to dairy and food processors.

**Response:**

Several of these comments involve establishing studies which are not within the scope of this rule revision effort. The department can consider these studies independently given resources constraints. The other comments in this group need to be considered in the context of the conditions that exist at a particular site and the flexibility afforded in the rule and in other forms of regulation including compliance schedules, adaptive management and variances.

**Y. Applicability to CSOs.**

- Would limits apply to CSOs? How iss such guidance reflected in permits?
- There is not reliable or practical enhanced treatment system technology available for peak wet weather intermittent CSO treatment facilities. Mechanism for regulating CSOs and CSTPs is the EPA Combined Sewer Overflows Guidance for Long-term Control Plan.

**Response:**

Combined sewer overflows are treated as conditions in permits in accordance with federal regulations and guidance and not considered in this rule.

**Z. Rule-making Process Comments**

- Timing and logistics of hearing were inadequate; room too small
- Rules are too flexible; DNR cannot be trusted to have flexibility.
- Timeline is too slow; may take 15 years before full requirements are imposed.
- A second set of public hearings should be held after proposed rules are reconciled with US EPA and the impacts of the proposed rule can be reasonably evaluated.
- Rule is not cost-effective.
- An environmental impact assessment should be conducted.

**Response:**

The department attempts to anticipate the level of hearing attendance and sometimes either guesses wrong or is limited as to the facilities available. The department does not anticipate any additional hearings, although hearings might be held by the legislature if the rule is adopted by the Natural Resources Board. This rule effort does not meet the criteria in ch. NR 150 for producing an environmental impact statement. Comments on the fiscal estimate are addressed separately.

**AA. Affordability Concerns**

- Significant financial burdens; costs are likely to exceed any benefits; has not conducted an adequate cost-benefit analysis.
- Concern over additional costs for municipalities who also need to comply with NR 216 municipal storm sewer system regulations.
- Costs must be born by individual paper mills and not by the broader corporations. To the extent that cost increases are incurred by Wisconsin mills, but not by mills in other states, it jeopardizes the long-term viability of these mills.
- Implementation flexibility under EPA guidance is very limited; contributing to the extreme costs associated with this rule.
- Reliably achieving effluent limits in the range of 0.1 mg/l will require advance technology that will come at an enormous cost.
- Support development of stable, increasing funding for both point and nonpoint source programs. Rules create an unfunded mandate.
- Removing phosphorus from POTW effluent is the least cost effective way of reducing phosphorus to our waters.

**Response:**

The department recognizes the potential for costs to dischargers of phosphorus that may be substantial and possibly not affordable. Under state and federal laws and rules, the issue of affordability is addressed on a case-by-case basis through the variance process.

While full compliance may not be affordable for one community or one industrial discharger, it may be affordable for others.

The administrative rules, contain a number of elements that provide flexibility to dischargers, including: (1) authorizing longer averaging periods for facilities with low phosphorus effluent limits; (2) allowing permit limits to be based on total maximum daily load allocations which allocate load reductions between point sources and nonpoint sources; (3) authorizing extended compliance schedules that provide time to incorporate needed improvements into facility plans; (4) providing for a watershed adaptive management option that fosters a watershed approach and ties interim effluent limits to changes in the water; and (5) providing special variance procedures for lagoon and stabilization ponds. In addition, variance procedures are already in place and available for all dischargers and notes in the rules recognize that pollutant trading may also be a tool to provide flexibility in implementation.

**AB. Cost Estimates Concerns**

- The Background memo and fiscal estimate understate the number of industrial dischargers impacted. The estimated number of dischargers does not take into account those the discharge to municipal wastewater treatment facilities and may be required to install pretreatment systems.
- DNR concedes that costs could be higher given site-specific factors, but then fails to undertake any meaningful analysis of those costs. Four site-specific cost analyses were contained in the Strand Report.
- DNR estimate of the number of affected facilities does not reflect the hearing draft of the rule.
- The DNR estimates of unit costs are conservative and do not account for the proposed averaging period. EPA's contractor studies from the eastern part of the United States reflect what technology can achieve under optimal conditions, on an annual basis.
- DNR's reliance on variances and future improvements distorts the actual cost impact. Applying such factors as variances, emerging technology and pollutant trading are inappropriate. Without an accurate understanding of the costs, sound public policy cannot be made.
- The Department underestimated the number of industrial facilities impacted by not making an estimate of the cost to industries discharging to municipal wastewater treatment plants. Those discharging to municipal wastewater treatment plants may include small businesses.
- Cost estimates for a dairy processing facility are too low
- The fiscal estimate and small business analysis fail to recognize that there is an indirect effect. Increase costs to dairy processing facilities will have an impact on dairy farms and consumers. Costs to control nonpoint sources as a result of TMDLs will directly have an impact on farmers.
- The cost estimates do not include any estimate of the cost reduction due to below market value loans from the state's Clean Water Fund.
- The fiscal estimate underestimates the number of staff needed to incorporate phosphorus water quality based effluent limits into permits.

**Response:**

Several comments were received on the cost estimates included with the administrative rules. The department believes that it is proper to provide a reasonable range of costs, to the extent practicable, that reflect projected implementation of the rules. The department does not agree that only one cost estimate based on the "worst case scenario" should be presented.

The upper end of the range of estimates is based on US EPA's technical guidance document, "Municipal Nutrient Removal Technologies Reference Document (September 2008), updated to present construction costs and increased by 30 percent to incorporate a number of factors, such as northern conditions. The content of the US EPA document is based on case-by-case review of functioning wastewater treatment plants achieving low phosphorus effluent limits across the country, including those using filtration. The department agrees that site conditions specific to a facility may increase the overall cost estimate, such as the example for Green Bay Metropolitan Sewerage District included in comments received. This was recognized and stated in the assumptions used to estimate costs. However, the department does not believe that site conditions from two or three facilities should be extrapolated to the entire state for making a cost estimate.

The department anticipates that there will be a number of municipal and industrial dischargers seeking variances based on widespread social and economic impacts. In making a cost estimate, the department assumed a certain number of variances based on the type of treatment process, such as lagoon and stabilization ponds, and the size of community or facility. These were assumed to be conservative assumptions and do not pre-determine which facilities will receive variances.

Similar to the cost estimate prepared by Strand Associates and submitted with comments, the upper end of the department's range of estimates does not assume any lower costs due to a number of flexibility elements contained in the rule, such as less stringent effluent limits based on TMDL wasteload allocations or resulting from nonpoint source or urban storm water control of phosphorus achieved through implementation of the watershed adaptive management option contained in the rules. Lower costs due to emerging technological processes, although likely, could not be accounted for in the cost estimates.

As mentioned in a comment, the cost estimates do not account for any subsidy to municipalities from loans or grants from the state's Clean Water Fund. The current subsidy value is about 20 percent for eligible municipalities.

The department agrees with the comment that the costs estimated for the food industry do not take into account potential costs to those industries discharging wastes to municipal wastewater treatment plants. In the cost estimate, those costs were entirely attributed to the municipality. A note is added to the estimate to recognize this fact.

The department agrees that costs to the dairy processing industry were underestimated and the costs have been revised. Many of the 25-30 facilities identified by the Cheesemakers discharge non-contact cooling water only and discharge less than 50 pounds of phosphorus per year. Many of these may not have a reasonable potential to cause or contribute to an exceedance of the criteria.

**AC. General Comments**

- Paper industry ought not have a role in making further progress in addressing nutrient pollution.
- Wisconsin should defer action until there is a scientifically defensible and uniform national approach.
- The lack of specific requirements leaves much rule interpretation to the permit writer; causing an incredible amount of business uncertainty in the regulated community.
- Past attempts to reduce phosphorus use have resulted in treatment process upsets; difficult to reduce phosphorus residuals by cutting back on phosphorus use.
- Concerns with limits of technology associated with site-specific or system-specific technology and further requirements to control chlorides.
- Rate payer money should not be used to lobby; don't listen to rants about "unfunded mandates".
- Use algaecides to solve problem or phosphorus-using plants.
- Contributes to urban sprawl.
- WDNR needs to develop rules regarding procedures for conducting Use Attainability Analyses.
- With other agencies and the legislature, convene a legislative council study for developing the necessary statutory language (and/or) administrative codes) so that water quality trading would be a legal and implementable option.
- Concern that more POTWs will not accept septage. Fewer landspreading options as urban sprawl takes place and DNR land application site approval becomes more restrictive. Increased number of septage storage facilities is the answer. Request DNR to revise its rules to ease permitting requirements for septage storage facilities.
- None of 172 waters on 303(d) list with phosphorus related impairments are listed solely due to point sources. Point sources have already achieved significant reductions in phosphorus discharges.
- Do not include waters with low dissolved oxygen as phosphorus impaired.
- Concerned that the proposed rules are aimed at agricultural "limitations".
- Use two significant figures, such as 0.10 mg/l. Effective date should be six to 12 months after the date of promulgation.
- Proposed criteria fail to be prescriptive enough and fail to address large gaps.
- A number of northern lakes and streams have concentrations below the proposed criteria and if there are no antidegradation standards, these waters may be substantially degraded before standard "thresholds" are violated.

- We will not achieve significant water quality improvements if we only regulate point sources. Need to develop a regulatory nonpoint source program where enforcement is not tied to availability of cost sharing.
- Adopt the revisions to ch. NR 151 that establish phosphorus standards for agricultural runoff. Then ch. NR 151 must be funded, implemented and enforced. Move the proposed revisions to chs. NR 102, NR 151 and NR 217 through the rule making process in parallel.
- Develop a comprehensive watershed based trading protocol and report back to the Board by July 1, 2011.
- Develop and implement a comprehensive water quality monitoring program to elevate the effectiveness of phosphorus control strategies.
- Adopt phosphorus standards on a watershed by watershed basis and develop a watershed based permitting approach.

**Response:**

Most of these comments are either rhetorical in nature or do not apply to these rules. However, some are pertinent to this effort.

It is not possible to defer action on these criteria. US EPA has received a notice of intent to sue from a variety of groups that will require the agency to establish numeric phosphorus water quality criteria for Wisconsin if the state does not act.

Several comments referred to pollutant trading. As prior responses have indicated, the department intends to engage in a process to more effectively establish pollutant trading in the near future.

Several comments were also made concerning nonpoint impacts on phosphorus levels in water. This rule provides the adaptive management option to allow time to address nonpoint sources in a watershed. In addition, revisions to ch. NR 151, the nonpoint performance standard rule, are moving forward on a parallel track, and include provisions to further address phosphorus discharge from nonpoint sources.

Wisconsin Department of Administration
Division of Executive Budget and Finance
DOA-2048 (R10/2000)

# Fiscal Estimate — 2009 Session

| ☒ Original ☐ Updated | LRB Number | Amendment Number if Applicable |
|---|---|---|
| ☐ Corrected ☐ Supplemental | Bill Number | Administrative Rule Number WT-25-08 |

Subject

Phosphorus Water Quality Standards and Effluent Standards and Limitations

Fiscal Effect

State: ☐ No State Fiscal Effect

Check columns below only if bill makes a direct appropriation or affects a sum sufficient appropriation.

☐ Increase Existing Appropriation ☐ Increase Existing Revenues
☐ Decrease Existing Appropriation ☐ Decrease Existing Revenues
☐ Create New Appropriation

☒ Increase Costs — May be possible to absorb within agency's budget. ☒ Yes ☐ No

☐ Decrease Costs

Local: ☐ No Local Government Costs

1. ☒ Increase Costs ☐ Permissive ☒ Mandatory
2. ☐ Decrease Costs ☐ Permissive ☐ Mandatory
3. ☐ Increase Revenues ☐ Permissive ☐ Mandatory
4. ☐ Decrease Revenues ☐ Permissive ☐ Mandatory
5. Types of Local Governmental Units Affected: ☒ Towns ☒ Villages ☒ Cities ☐ Counties ☒ Others Sanitary districts ☐ School Districts ☐ WTCS Districts

Fund Sources Affected

☒ GPR ☐ FED ☐ PRO ☐ PRS ☐ SEG ☐ SEG-S

Affected Chapter 20 Appropriations

20.370 (4) (ma)

Assumptions Used in Arriving at Fiscal Estimate

I. RULE SUMMARY

The rule package proposes to implement numeric phosphorus water quality standards criteria for lakes and streams, as required by EPA. If the Department does not adopt phosphorus criteria, EPA has the authority to do so for Wisconsin. On November 23, 2009, EPA received a notice of intent to sue over a lack of numeric criteria for Wisconsin waters.

The rule package also includes procedures for using the phosphorus criteria to develop water quality based effluent limitations for publicly and privately owned wastewater treatment facilities, and implementing those limitations through Wisconsin Pollutant Discharge Elimination System (WPDES) permits. Various options included in these permit procedures are limitations derived from total maximum daily load (TMDL) plans, compliance schedules, interim limitations and variances.

II. STATE FISCAL IMPACT

This rule package has no impact on state revenues; however, the Department would incur costs associated with WPDES permits to implement the provisions of the rule package. An ongoing workload equivalent to about 2.0 FTE statewide is projected for at least five to ten years. Wastewater engineer positions will develop effluent limitations, including consideration of TMDL wasteload allocations, review of variance requests, development of compliance schedules, etc. The workload estimate is based on 100 permits per year at about 40 hours per permit with five years to complete an initial cycle of permit reissuances. Salary and fringe costs are estimated at $220,000 per year (4,000 hours x $35/hour salary + 48.59% fringe + travel and supplies).

Long-Range Fiscal Implications

The fiscal impact on local governments and industries will likely be spread over a 10 to 20 year period with less costly interim limitations being imposed in the initial five to ten years and the more stringent limits being phased in primarily in the 10 to 20 year period.

| Prepared By: | Telephone No. | Agency |
|---|---|---|
| Joseph Polasek | 266-2794 | Department of Natural Resources |
| Authorized Signature | Telephone No. | Date (mm/dd/ccyy) |
| [signature] | 266-2794 | 06-11-10 |

# Fiscal Estimate — 2009 Session

| LRB Number | Amendment Number if Applicable |
|---|---|
| Bill Number | Administrative Rule Number |

## Page 2 Assumptions Narrative Continued

Assumptions Used in Arriving at Fiscal Estimate – Continued

III. LOCAL FISCAL IMPACT

The proposed rule package will result in compliance costs for a number of municipal and other publicly owned wastewater treatment facilities. These costs may be in the form of capital expenditures, increased operation and maintenance costs, or both, and will vary considerably by municipality or sanitary district. For some facilities, no additional costs will be needed since they discharge to streams and rivers and already meet the phosphorus criteria. For up to an estimated 163 facilities, the addition of filtrations processes may be needed and a substantial cost could be incurred. The Department estimates that municipalities and sanitary districts will incur costs of between $300 million $1.13 billion to comply with the provisions in the rule package. Costs per unit of phosphorus removed are much lower for larger facilities than for smaller facilities. Furthermore, it should be noted that the estimated cost range does not take into account the possibility that some municipalities and sanitary districts may need to acquire land for locating additional wastewater treatment facilities, and thus incur the corresponding land acquisition costs.

There are a number of factors that could push the costs toward the low end of the range, or even lower. These mitigating factors include nonpoint source control that lessens the need for point source control of phosphorus either in general or through implementation of TMDLs. Other factors include economic variances that limit the degree of control to affordable levels, emerging technology that may lower costs, and pollutant trading. The low end of the range may also be overstated to the extent that facilities have already upgraded their treatment plants and/or treatment processes and have thus already incurred some of the costs.

IV. PRIVATE SECTOR FISCAL IMPACT

The proposed rule package will result in compliance costs for a number of industrial wastewater facilities. These costs may be in the form of capital expenditures, increased operation and maintenance costs, or both. The paper industry and the food processing industry would be most affected. The Department estimates that up to 43 facilities could have stringent effluent limitations. Those discharging wastes to municipal wastewater treatment plants may also face increased service fees. Similar to local governmental entities, there is a great degree of variability in the costs that would be incurred. The Department estimates the cost range to be between $100 million and $460 million.

The same mitigating factors described above for local governmental entities will push costs toward the lower end of the range for private sector facilities.

Wisconsin Department of Administration
Division of Executive Budget and Finance
DOA-2047 (R10/2000)

# Fiscal Estimate Worksheet — 2009 Session

Detailed Estimate of Annual Fiscal Effect

| ☐ Original ☐ Updated | LRB Number | Amendment Number if Applicable |
|---|---|---|
| ☐ Corrected ☐ Supplemental | Bill Number | Administrative Rule Number WT-25-08 |

Subject

Phosphorus Water Quality Standards and Effluent Standards and Limitations

One-time Costs or Revenue Impacts for State and/or Local Government (do not include in annualized fiscal effect):

| Annualized Costs: | Annualized Fiscal Impact on State Funds from: Increased Costs | Decreased Costs |
|---|---|---|
| A. State Costs by Category | | |
| State Operations — Salaries and Fringes | $ 208,000 | $ - 0 |
| (FTE Position Changes) | ( 2.00 FTE ) | (- 0.00 FTE ) |
| State Operations — Other Costs | 12,000 | - 0 |
| Local Assistance | 0 | - 0 |
| Aids to Individuals or Organizations | 0 | - 0 |
| Total State Costs by Category | $ 220,000 | $ - 0 |
| B. State Costs by Source of Funds | Increased Costs | Decreased Costs |
| GPR | $ 220,000 | $ - 0 |
| FED | 0 | - 0 |
| PRO/PRS | 0 | - 0 |
| SEG/SEG-S | 0 | - 0 |
| State Revenues — Complete this only when proposal will increase or decrease state revenues (e.g., tax increase, decrease in license fee, etc.) | Increased Revenue | Decreased Revenue |
| GPR Taxes | $ | $ - |
| GPR Earned | | - |
| FED | | - |
| PRO/PRS | | - |
| SEG/SEG-S | | - |
| Total State Revenues | $ | $ - |

**Net Annualized Fiscal Impact**

| | State | Local |
|---|---|---|
| Net Change in Costs | $ 220,000 | $ see narrative |
| Net Change in Revenues | $ 0 | $ |

| Prepared By: | Telephone No. | Agency |
|---|---|---|
| Joe Polasek | 266-2794 | Department of Natural Resources |
| Authorized Signature | Telephone No. | Date (mm/dd/ccyy) |
| Joe Polasek | 266-2794 | 06-11-10 |

ORDER OF THE STATE OF WISCONSIN
NATURAL RESOURCES BOARD
AMENDING, REPEALING AND RECREATING AND CREATING RULES

The Wisconsin Natural Resources Board proposes an order to **amend** ch. NR 217 (title), NR 217.01, 217.02 and 217.03; to **repeal and recreate** NR 102.06; and to **create** NR 217 subchs. I (title), II (title), and III (title), NR 217.10, 217.11, 217.12, 217.13, 217.14, 217.15, 217.16, 217.17, 217.18 and 217.19 relating to phosphorus water quality standards criteria and limitations and effluent standards.

WT-25-08

Analysis Prepared by Department of Natural Resources

**1. Statutes Interpreted:** Sections 281.15, 283.11, 283.13 (5), 283.15, 283.31, 283.55, 283.84

**2. Statutory Authority:** Sections 227.11 (2) (a), 281.15, 283.001 (2), 283.13 (5), 283.15, 283.31, 283.35, 283.37

**3. Explanation of agency authority:** Section 227.11 (2) (a), Stats., expressly confers rulemaking authority on the department to promulgate rules interpreting any statute enforced or administered by it, if the agency considers it necessary to effectuate the purpose of the statute. The department considers the proposed rules necessary to implement the pollution abatement permit program established in ch. 283, Stats. The phosphorus water quality standard included in the proposed rules is required pursuant to s. 281.15, Stats., which directs the department to promulgate water quality standards for state waters. Section 283.13 (5), Stats., gives the department the authority to establish water quality based effluent limitations based on applicable water quality standards and to require compliance with those limitations consistent with a schedule of compliance or state or federal law. Section 283.15, Stats., provides authority to establish rules for variances to water quality standards, s. 283.31, Stats., provides authority to establish permit terms and conditions for water pollutant discharge elimination system permits, and s. 283.37, Stats., gives the department authority to require the submittal of information as part of a permit application.

**4. Related statute or rule:** Section 283.11 (3) (am), Stats., and chs. NR 106 and 200

**5. Plain language analysis:**

The proposed rule has two parts. The first is a set of phosphorus water quality standards criteria for rivers, streams, various types of lakes, reservoirs and Great Lakes. The second is procedures for determining and incorporating phosphorus water quality based effluent limitations into Wisconsin Discharge Pollutant Elimination System (WPDES) permits under ch. 283, Stats. Pursuant to 40 CFR 131.11, states are required to adopt water quality standards criteria that are protective of the designated uses of surface waters. Pursuant to section 303 (c) (4) of the Clean Water Act, US EPA may step in and promulgate the criteria for the state, if the state does not. Development of point source permit procedures is required as part of the state's point source permit delegation agreement. US EPA approval of state water quality criteria is required under 40 CFR ss. 131.5, 131.6 and 131.21.

Phosphorus Water Quality Standards Criteria

The proposed rule establishes phosphorus water quality criteria of 100 ug/l (parts per billion) for rivers specifically identified in the rule and of 75 ug/l for smaller streams and rivers. No criteria are proposed at this time for ephemeral streams or streams identified in ch. NR 104, Wis. Adm. Code as limited aquatic life waters. Both of the criteria are intended to prevent in-stream algae and other plant growth to the extent that is detrimental to fish and aquatic life. For example, extensive algae or macrophyte (large plants growing on the beds of streams) consume oxygen during the night to the extent that may leave too little oxygen for certain fish species and for certain aquatic insects. About half of Wisconsin's rivers and streams meet the proposed criteria.

For lakes and reservoirs, the proposed rule has a suite of criteria for five different types of lake ranging from 15 ug/l for lakes supporting a coldwater fishery, such as lake trout or cisco in its bottom waters, to 40 ug/l for shallow drainage lakes and reservoirs. The criteria are intended to prevent or minimize nuisance algal blooms; prevent shifts in plant species in shallow lakes; maintain adequate dissolved oxygen in the bottom of "two-story" lakes with a warmwater fishery in top waters and coldwater fisheries in bottom waters; and to maintain fisheries. "Toxic" algae concerns may also be addressed. For millponds and similar impoundments, the upstream river or stream criteria would apply. More than half of Wisconsin's lakes meet the proposed criteria with the percent varying by lake type. No criteria are proposed at this time for marsh lakes and other wetlands since they will be part of future wetlands nutrient criteria adoption.

For the Great Lakes, phosphorus criteria are proposed for the open waters of Lake Superior (5 ug/l), the open waters of Lake Michigan (7 ug/l) and the nearshore waters of Lake Michigan (7 ug/l). Presently, for the open waters both Lake Michigan and Lake Superior are meeting the criteria. For the nearshore waters of Lake Michigan, the zone from the beaches to a depth of 10 meters, where there are concerns with the Cladophora algal mats forming on beaches, the criteria may be exceeded in some locations.

Below is a table showing the proposed phosphorus water quality standards criteria by type of water body. The specific water body types are defined in the proposed rules, and there are some exclusions based on size or flow conditions.

| **Proposed Phosphorus Criteria by Type of Water Body** | **Total Phosphorus in ug/l** |
|---|---|
| Listed rivers | 100 |
| All other streams | 75 |
| Stratified reservoirs | 30 |
| Non-stratified reservoirs | 40 |
| Stratified "two-story" fishery lakes | 15 |
| Stratified drainage lakes | 30 |
| Non-stratified (shallow) drainage lakes | 40 |
| Stratified seepage lakes | 20 |
| Non-stratified (shallow) lakes | 40 |
| Impoundments | Same as inflowing river or stream |
| Lake Michigan open and nearshore waters | 7 |
| Lake Superior open and nearshore waters | 5 |

WPDES Effluent Standards and Limitations

The current regulations for phosphorus establish specific procedures for including technology based limitations and standards in WPDES permits (existing ch. NR 217). There is also an existing rule (s. NR 102.06) that generally states the department may establish water quality based limits for phosphorus in permits on a case-by-case basis using an evaluation of phosphorus sources in a watershed, but this rule is being repealed and replaced with a proposed new subchapter in ch. NR 217 that includes detailed procedures for establishing water quality effluent limitations for phosphorus.

Specifically, there are provisions for determining when a water quality based effluent limitation is needed in a WPDES permit; equations and procedures for calculating effluent limits based on different types of waters and stream flow assumptions; and provisions for expressing permit compliance averaging periods, such as a monthly average. The rule requires concentration limits, as commonly used in permits. However, it also specifies where and how mass limits are required, such as for discharges to impaired waters, where there is a downstream lake and where there is a downstream outstanding or exceptional resource water. The rule also addresses the relationship and procedures for including various types of phosphorus limits in permits such as a phosphorus limit based on a total maximum daily load, a technology based phosphorus limit and a water quality based phosphorus limit calculated under the new procedures in chapter NR 217.

The proposed rule allows the department to include compliance schedules in permits. The compliance schedule provisions specify factors the department may consider when establishing the length of a compliance schedule. In addition to compliance schedules, the rule includes a watershed adaptive management option where interim limits may be phased in, if phosphorus concentrations improve in the receiving water.

The proposed rule also includes provisions for processing variances to phosphorus water quality based effluent limitations for stabilization pond and lagoon systems. The inclusion of these procedures for stabilization pond and lagoon systems should not be interpreted to mean that these are the only types of systems that may obtain a variance. There are standard procedures for variances in statutory language and other administrative codes.

**6. Summary of, and comparison with, existing or proposed federal regulation:**

The proposed phosphorus criteria for streams of 75 ug/l and rivers of 100 ug/l are similar to US EPA's guidance values for the southern half of Wisconsin. US EPA recommended 70 ug/l of phosphorus for both rivers and streams in the southwestern driftless area of the state and 80 ug/l of phosphorus for both rivers and streams in the remainder of the southern half of the state. US EPA, did however, recommend a criterion of 29 ug/l for a band or area stretching west to east though the middle of the state and 10 ug/l for the forested northern part of the state. All of the US EPA guidance numbers are based on the 25th percentile of available data from a number of states and do not represent a cause-effect situation. We could not find concentrations as low at 10 ug/l even for pristine conditions in most of the forested northern portion of Wisconsin.

For lakes, the proposed criteria that range from 15 to 40 ug/l based on the type of lake are different than US EPA's guidance values that range from 9.7 ug/l for northern lakes to 36 ug/l for driftless area lakes. US EPA's guidance values are based on data from multiple states and represent the 25th percentile of available data. They do not differentiate based on the type of lake.

The proposed criteria for Lake Michigan and Lake Superior are the same as the values derived for the federal Great Lakes Water Quality Agreement.

The proposed WPDES permit procedures, including water quality based effluent limitations, are based on general US EPA regulations and guidelines.

**7. Comparison with similar rules in adjacent states:**

All states, including adjacent states, are required by US EPA to promulgate nutrient water quality standards criteria under US EPA's Clean Water Act authority. In addition, all states delegated National Pollutant Discharge Elimination System permit authority by US EPA, including all adjacent states, are required to issue point source permits that will meet water quality standards.

To date, Minnesota has promulgated phosphorus criteria for lakes which are very similar to what is proposed in this rule. Minnesota is now in the process of developing proposed criteria for rivers and streams. Illinois has had phosphorus criteria in its water quality standards for some years for lakes and Lake Michigan; and it is in the process of developing phosphorus criteria for streams and rivers. Michigan and Iowa are developing criteria, but to date have not publicly proposed criteria. None of the adjacent states or Wisconsin has proposed criteria for nitrogen, except for ammonia.

All adjacent states have provisions for developing water quality based effluent limits, but none to date have proposed rules that specifically deal with the issues uniquely related to phosphorus.

**8. Summary of factual data and analytical methodologies used and how any related findings support the regulatory approach chosen:**

The proposed water quality standards phosphorus criteria for streams and rivers are based on results of a number of Wisconsin studies aimed at determining when biotic effects occur and how these effects relate to protection of designated uses. The primary studies were jointly conducted by department and US Geological Survey (USGS) staff and their results are reported in "Nutrient Concentrations and Their Relations to the Biotic Integrity of Wadeable Streams in Wisconsin", USGS Professional Paper 1722, by Robertson, Graczyk, Garrison, Wang, LaLiberte and Bannerman, 2006; and "Nutrient Concentrations and Their Relations to the Biotic Integrity of Nonwadeable Rivers in Wisconsin", USGS Professional Paper 1754, by Robertson, Weigel and Graczyk, 2008. These studies identified a suite of breakpoints or thresholds for effects of phosphorus on algae, aquatic insects and fish. Based on discussions involving a number of experts in the scientific field, the department used an averaging method of the suite of breakpoints to derive the proposed criteria. These proposed criteria were compared to department's studies of trout streams in southwestern Wisconsin, the early 1980's department's study of phosphorus in streams and studies cited in US EPA's "Nutrient Criteria Technical Guidance Manual: Rivers and Streams", EPA-822-B-00-002, 2000.

The proposed water quality standards phosphorus criteria for lakes and reservoirs are based on methods commonly used for decades in lake management in Wisconsin and adjacent states. Specifically, for most types of lakes, the proposed criteria are based on limiting the risk of nuisance algae conditions (20 ug/l chlorophyll a) to no more than 5 percent of the time (e.g. less than one week per year from June though September) using work by Walmsley (Journal of Environmental Quality, 13:97-104, 1988) and Heiskary and Wilson ("Minnesota Lake Water Quality Assessment Report: Developing Nutrient Criteria", Minnesota Pollution Control Agency, September 2005). These concentrations were also determined to be sufficient to protect sport fisheries in lakes again using information from Heiskary and Wilson ("Minnesota Lake Water Quality Assessment Report: Developing Nutrient Criteria", Minnesota Pollution Control Agency, September 2005). For the relatively few lakes that support a cold water fishery in the lower waters, the department's objective was to maintain 6 mg/l for dissolved oxygen in the lower waters. To determine the appropriate phosphorus concentrations, the department examined sediment cores and current water concentrations to determine undisturbed conditions. The proposed criteria were compared to literature information summarized in US EPA's "Nutrient Criteria Technical Guidance Manual: Lakes and Reservoirs", EPA-822-B-00-001, 2000.

For development of the water quality based effluent limitation procedures for permits, the department reviewed existing state and federal regulations and guidance for the point source discharge permit programs, consulted with US EPA representatives, and received input from a technical advisory committee that met several times in 2008 through 2009. The technical advisory committee was comprised of representatives of municipal and industrial wastewater dischargers, municipal storm water dischargers, agricultural interests, water user groups and environmental groups. Staff from US EPA and USGS also attended committee meetings as advisories to the committee and the department.

**9. Analysis and supporting documents used to determine fiscal estimate and effect on small business**

The Department's cost estimate for municipal and industrial wastewater treatment plant compliance contains a range of costs based on projected implementation of the requirements of subchapter III of ch. NR 217. The range is appropriate given the number of flexibility elements in the rule, such as the watershed adaptive management option, use of total maximum daily load allocations, economic variances and pollutant trading. The upper end of the range estimate of $1.6 billion anticipates that 163 municipal and 43 wastewater treatment plants will require filtration or other tertiary treatment at a substantial capital expenditure and increased operation and maintenance costs. Not every facility in the state will have stringent water quality based effluent limits and many will not see any change in their current phosphorus limits. The number of facilities anticipates that small communities and industries with lagoon or stabilization pond systems or mechanical systems will receive variances due to widespread adverse social and economic impacts. The number of industrial facilities includes only those that discharge to surface waters and does not include those that discharge phosphorus to municipal wastewater treatment plants, such as some food processing plants. The cost estimates for municipalities are based on cost estimating charts in the US EPA's "Municipal Nutrient Removal Technology Reference Document, September 2008; adjusted upward about 40 percent for current construction costs, northern climate conditions and

other factors. The cost estimates for industries are based on information from various sources. The upper end of the range estimate does not include site-specific costs, such as land purchase to enlarge the facility, that could substantially increase the costs for an individual facility. Also, the upper end of the range estimate does not take into account the subsidy value (about 20%) to municipalities receiving loans from the state's Clean Water Fund which would lower the statewide cost estimate.

Costs may be less that those estimated for the upper end of the range through implementation of total maximum daily load allocations, the watershed adaptive management option and/or pollutant trading. Each of these flexibility approaches has the potential to bring about control of phosphorus from nonpoint sources and urban storm water sources and lessen the need for stringent wastewater treatment plant effluent limits. Emerging technology, starting to be used in eastern states, may also reduce costs for tertiary treatment for phosphorus. These reduced costs were not quantified or factored into the upper end of the range cost estimates.

The lower end of the range anticipates that no wastewater treatment plant will need to go beyond phosphorus removal technology that is commonly used in Wisconsin. Many Wisconsin wastewater treatment plants are discharging phosphorus at concentrations far below their effluent limit with some discharging at concentrations less than half of their limit.

There could be both direct and indirect economic impacts on small businesses. To assess the direct impacts, the department initially identified cheese and other dairy operations that discharge wastewater containing phosphorus to lakes and streams as small businesses potentially impacted by the proposed rules. With the assistance of the Wisconsin Cheese Makers, 11 businesses were identified for analysis. All 11 are likely to have more than $5 million in annual revenue, but may have less than 25 employees. Of the 11, six apply wastes to the land through a variety of methods. The other six discharge their wastes to municipal wastewater treatment plants. Some, however, may discharge non-contact cooling water which may or may not have phosphorus added to the water by the industry or a municipality. Those small businesses that discharge their wastes to municipal wastewater treatment plants or farmers that sell their products to food processing industries may have an indirect economic impact that cannot be quantified at this time since the costs are specific to the facility.

Based on this analysis, the department concluded that there are few small businesses that directly discharge of wastewater containing phosphorus to lakes or streams. If there is an impact, it would likely be an indirect fiscal impact on those small businesses that discharge their wastes to a municipal wastewater treatment facility. If the municipal wastewater treatment plant is required to further remove phosphorus, it is possible that the service fee may increase or the municipality may require some level of pretreatment.

**10. Effect on small business:**

The department has determined the rule may have an indirect impact on limited number of small businesses, and that impact may be lessened through existing variance procedures. Most of the fiscal impacts from the proposed rules will affect municipalities and industries (with phosphorus discharges to surface waters) that aren't considered small businesses. However, there may be an

effect on small businesses that discharge to municipal wastewater treatment plants; but this impact is very difficult to estimate. Secondary indirect impacts on farmers and other suppliers to small industries are even more difficult to estimate.

As mentioned above, small cheese factories may be the best example of a small business. For those meeting the definition of a small business, many of the facilities land apply all or the majority of their wastewater, and therefore will not be impacted by these rules. If there are any businesses that discharge wastes directly to surface waters that meet the definition of a small business, they may apply for a variance if compliance with water quality based effluent limits for phosphorus would cause significant economic hardship. The proposed rules do not provide for less stringent reporting, longer compliance schedules or completed exemptions for small businesses with phosphorus discharges to surface waters because it would not be allowed under federal regulations or state statutes. There is, however, a variance procedure that is allowed under both state and federal law for all point sources that qualify. Reporting and record keeping requirements are established through permit terms and conditions.

**11. Agency contact person:**

Jim Baumann, P.O. Box 7921, Madison, WI 53707; telephone number 608/266-9277; e-mail address: james.baumann@wisconsin.gov.

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SECTION 1. NR 102.06 is repealed and recreated to read:

**NR 102.06 Phosphorus.** (1) GENERAL. This section identifies the water quality criteria for total phosphorus that shall be met in surface waters.

(2) DEFINITIONS. In this section:

(a) "Drainage lake" means a lake with an outlet stream that continually flows under average summer conditions based on the past 30 years.

(b) "Ephemeral stream" means a channel or stream that only carries water for a few days during and after a rainfall or snowmelt event and does not exhibit a flow during other periods, and includes, but is not limited to, grassed waterways, grassed swales and areas of channelized flow as defined in s. NR 243.03 (7).

(c) "Mean water residence time" means the amount of time that a volume of water entering a waterbody will reside in that waterbody.

(d) "Nearshore waters" means all waters of Lake Michigan or Lake Superior within the jurisdiction of the State of Wisconsin in the zone extending from the shore to a depth of 10 meters, based on the long-term mean elevation for Lake Superior of 183.4 meters (601.7 feet) and for Lake Michigan of 176.5 meters (579.0 feet).

(e) "Open waters" mean all waters of Lake Michigan or Lake Superior within the jurisdiction of the State of Wisconsin with depths greater than nearshore waters.

(f) "Reservoir" means a waterbody with a constructed outlet structure intended to impound water and raise the depth of the water by more than two times relative to the conditions prior to construction of the dam, and that has a mean water residence time of 14 days or more under summer mean flow conditions using information collected over or derived for a 30 year period.

(g) "Stratified lake or reservoir" means a lake or reservoir where either of the following equations results in a value of greater than 3.8:

$$\frac{\text{Maximum Depth (meters)} - 0.1}{\text{Log}_{10}\text{Lake Area (hectares)}}$$

$$\frac{\text{Maximum Depth (feet)} * 0.305 - 0.1}{\text{Log}_{10}\text{Lake Area (acres)} * 0.405}$$

(h) "Seepage lake" means a lake that does not have an outlet stream that continually flows under average summer conditions based on the past 30 years.

(i) "Stratified two-story fishery lake" means a stratified lake which has supported a cold water fishery in its lower depths within the last 50 years.

(j) "Total phosphorus" means all of the phosphorus in a water sample analyzed using the methods identified under the provisions of s. NR 219.04 (1).

(3) STREAMS AND RIVERS. To protect the fish and aquatic life uses established in s. NR 102.04 (3) on rivers and streams that generally exhibit unidirectional flow, total phosphorus criteria are established as follows:

(a) A total phosphorus criterion of 100 ug/L is established for the following rivers or other unidirectional flowing waters:

1. Apple River from the outlet of the Apple River Flowage in Amery to the St. Croix River, excluding Black Brook Flowage.

2. Bad River from confluence with the Marengo River within the Bad River Indian Reservation downstream to Lake Superior.

3. Baraboo River from highway 58 in La Valle to the Wisconsin River.

4. Bark River from confluence with Scuppernong River near Hebron to the Rock River.

5. Black River from confluence with Cunningham Creek near Neillsville to Mississippi River, excluding Lake Arbutus.

6. Brule River from state highway 55 in Forest County downstream to Menominee River.

7. Buffalo River from confluence with Harvey Creek near Mondovi to Mississippi River.

8. Chippewa River from Lake Chippewa in Sawyer County to Mississippi River, excluding Holcombe Flowage, Cornell Flowage, Old Abe Lake, Lake Wissota and Dells Pond.

9. Crawfish River from confluence with Beaver Dam River to Rock River.

10. East Branch Pecatonica River from confluence with Apple Branch Creek near Argyle to Pecatonica River.

11. Eau Claire River from confluence with Bridge Creek near Augusta to Chippewa River, excluding Altoona Lake.

12. Embarrass River from confluence with Pigeon River near Clintonville to Wolf River.

13. Flambeau River from outlet of Turtle-Flambeau Flowage in Iron County to Chippewa River, excluding Pixley Flowage, Crowley Flowage and Dairyland Flowage.

14. Fox River from outlet of Lake Puckaway near Princeton to Green Bay, excluding Lake Butte des Morts and Lake Winnebago.

15. Fox River from confluence with Mukwonago River near Mukwonago to state line, excluding Tichigan Lake.

16. Grant River from confluence with Rattlesnake Creek near Beetown to Mississippi River.

17. Jump River from confluence with the North Fork and the South Fork of the Jump River in Price County to Holcombe Flowage.

18. Kickapoo River from confluence with Weister Creek near La Farge to Wisconsin River.

19. Kinnickinnic River from confluence with Wilson Park Creek in Milwaukee to Milwaukee River.

20. La Crosse River from confluence with Fish Creek near Bangor to Mississippi River, excluding Neshonoc Lake.

21. Lemonweir River from outlet of New Lisbon Lake in New Lisbon to Wisconsin River, excluding Decorah Lake.

22. Little Wolf River from confluence with South Branch Little Wolf River near Royalton to Wolf River.

23. Manitowoc River from confluence of North Branch and South Branch Manitowoc River to the opening at the end of the piers at Lake Michigan.

24. Menominee River from confluence with Brule River to the opening at the end of the piers at Green Bay.

25. Menomonee River from confluence with Little Menomonee River to Milwaukee River.

26. Milwaukee River from confluence with Cedar Creek downstream to the openings of the breakwaters at Lake Michigan.

27. Mississippi River main channels and side channels.

28. Namekagon River from outlet of Trego Lake near Trego to St. Croix River.

29. Oconto River from confluence with Peshtigo Brook to the opening at the end of the piers at Green Bay.

30. Pecatonica River from confluence with Vinegar Branch near Darlington to state line.

31. Pelican River from confluence with Slaughterhouse Creek near Rhinelander to Wisconsin River.

32. Peshtigo River from confluence with Brandywine Creek downstream to Green Bay, excluding Cauldron Falls Flowage and High Falls Flowage.

33. Pine River from confluence with Popple River in Florence County to Menominee River, excluding Pine River Flowage.

34. Red Cedar River from confluence with Brill River to Chippewa River, excluding Rice Lake, Tainter Lake and Lake Menomin.

35. Rock River from outlet of Sinissippi Lake downstream to the state line, excluding Lake Koshkonong.

36. St. Croix River from confluence with Namekagon River downstream to Mississippi River, excluding Lake St. Croix near Hudson.

37. St. Louis River from state line to the opening between Minnesota Point and Wisconsin Point at Lake Superior.

38. Sheboygan River from outlet of Sheboygan Marsh to the opening at the end of the piers at Lake Michigan.

39. South Fork of Flambeau River from state highway 13 near Fifield to Flambeau River.

40. Sugar River from outlet of Albany Lake to state line, excluding Decatur Lake.

41. Tomahawk River from outlet of Willow Reservoir to Lake Nokomis.

42. Trempealeau River from confluence with Pigeon Creek near Whitehall to Mississippi River.

43. White River from outlet of White River Flowage in Ashland County to Bad River.

44. Wisconsin River from the Rhinelander Dam to Mississippi River, excluding Lake Alice, Lake Mohawksin, Alexander Lake, Lake Wausau, Mosinee Flowage, Lake Dubay, Wisconsin River Flowage, Biron Flowage, Petenwell Flowage, Castle Rock Flowage and Lake Wisconsin.

45. Wolf River from confluence with Hunting Creek in Langlade County to Lake Poygan.

46. Yahara River from outlet of Lake Kegonsa to Rock River.

(b) Except as provided in subs. (6) and (7), all other surface waters generally exhibiting unidirectional flow that are not listed in par. (a) are considered streams and shall meet a total phosphorus criterion of 75 ug/L.

(4) RESERVOIRS AND LAKES. Except as provided in sub. (1), to protect fish and aquatic life uses established in s. NR 102.04 (3) and recreational uses established in s. NR 102.04 (5), total phosphorus criteria are established for reservoirs and lakes, as follows:

(a) For stratified reservoirs, total phosphorus criterion is 30 ug/l. For reservoirs that are not stratified, total phosphorus criterion is 40 ug/l.

(b) For the following lakes that do not exhibit unidirectional flow, the following total phosphorus criteria are established:

1. For stratified, two-story fishery lakes, 15 ug/l
2. For lakes that are both drainage and stratified lakes, 30 ug/l.
3. For lakes that are drainage lakes, but are not stratified lakes, 40 ug/l.
4. For lakes that are both seepage and stratified lakes, 20 ug/l.
5. For lakes that are seepage lakes, but are not stratified lakes, 40 ug/l.

(c) Waters impounded on rivers or streams that don't meet the definition of reservoir in this section shall meet the river and stream criterion in sub. (3) that applies to the primary stream or river entering the impounded water.

(5) GREAT LAKES. To protect fish and aquatic life uses established in s. NR 102.04 (3) and recreational uses established in s. NR 102.04 (5) on the Great Lakes, total phosphorus criteria are established as follows:

(a) For both open and nearshore waters of Lake Superior, 5 ug/l.

(b) For both open and nearshore waters of Lake Michigan, excluding waters identified in par. (c), 7 ug/l.

(c) For the portion of Green Bay from the mouth of the Fox River to a line from Long Tail Point to Point au Sable, the water clarity and other phosphorus-related conditions that are suitable for support of a diverse biological community, including a robust and sustainable area of submersed aquatic vegetation in shallow water areas.

(6) EXCLUSIONS. The following waters are excluded from subs. (3) (b), (4) and (5):

(a) Ephemeral streams.

(b) Lakes and reservoirs of less than 5 acres in surface area.

(c) Wetlands, including bogs.

(d) Waters identified as limited aquatic life waters in ch. NR 104. Limited aquatic life waters are those subject to the criteria in s. NR 104.02 (3) (b) (2).

(7) SITE-SPECIFIC CRITERIA. (a) *General.* A criterion contained within this section may be modified by rule for a specific surface water segment or waterbody. A site-specific criterion may be adopted in place of the generally applicable criteria in this section where site-specific data and analysis using scientifically defensible methods and sound scientific rationale demonstrate a different criterion is protective of the designated use of the specific surface water segment or waterbody.

**Note:** Reservoirs, two-story fishery lakes and water bodies with high natural background phosphorus concentrations are the most appropriate water bodies for site-specific criteria.

**Note:** When placing a water body on the 303 (d) list as impaired for phosphorus, the department considers factors such as frequency and duration of criterion exceedances, the time of year of the exceedance and the magnitude of each exceedance above the applicable criterion. The department may also choose to consider other factors such as the concentration of suspended algae and floating plants; density of benthic algae; macrophyte density; minimum and daily change in dissolved oxygen levels due to diurnal swings; water clarity; and natural background phosphorus concentrations. The 303 (d) list is a list of impaired waters established by the department and approved by US EPA pursuant to 33 USC 1313 (d) (1) (A) and 40 CFR 130.7. Information on frequency and duration is contained in the department's impaired waters listing guidance, "Wisconsin Consolidated Assessment and Listing Methodology."

SECTION 2. Chapter NR 217 (title) is amended to read:

CHAPTER NR 217 (title) EFFLUENT STANDARDS AND LIMITATIONS FOR PHOSPHORUS

SECTION 3. NR 217 Subchapter I title to precede s. NR 217.01 is created to read:

SUBCHAPTER I (title) - GENERAL

SECTION 4. NR 217.01 is amended to read:

**NR 217.01 Purpose.** The purpose of this chapter is to reduce the amount of ~~pollutants~~ phosphorus discharged to surface waters by establishing effluent standards and limitations ~~pollutants~~, including water quality based effluent limitations, for phosphorus in effluent discharged to surface waters of the state. Effluent standards and limitations are ~~adopted~~ developed pursuant to ch. 283, Stats.

SECTION 5. NR 217 Subchapter II (title) to follow s. NR 217.01 is created to read:

SUBCHAPTER II (title) - PHOSPHORUS EFFLUENT STANDARD AND LIMITATIONS

SECTION 6. NR 217.02 is amended to read:

**NR 217.02 Applicability.** This ~~chapter~~ subchapter is applicable to point sources which discharge ~~wastewater~~ phosphorus to the surface waters of the state.

SECTION 7. NR 217.03 is amended to read:

**NR 217.03 Definitions.** Definitions of terms and the meaning of abbreviations used in this ~~chapter~~ subchapter are as defined in ss. NR 102.03, 106.03, 205.03, 210.03 and 243.03. In addition: "effluent standard" means any requirement for ~~a specific pollutant applicable to a~~

~~category or class of point sources which are more stringent than the requirements under s. 283.13 (1) to (4), Stats.~~ phosphorus established pursuant to s. 283.11 (3), Stats., and this subchapter.

SECTION 8. NR 217 Subchapter III (title) to follow s. NR 217.04 is created to read:

SUBCHAPTER III (title) - WATER QUALITY BASED EFFLUENT LIMITATIONS FOR PHOSPHORUS

SECTION 9. NR 217.10 is created to read:

**NR 217.10 Applicability.** This subchapter applies to discharges of phosphorus to surface waters of the state from the following point sources:

(1) Publicly and privately owned wastewater facilities or treatment works;

(2) Noncontact cooling water discharges which contain phosphorus unless 100 percent of the phosphorus in the discharge originates from the receiving water as intake water;

(3) Concentrated animal feeding operations that discharge manure or process wastewater from the production area through alternative treatment facilities under s. NR 243.13; and

(4) A facility or site that is regulated under ch. NR 216 only where the department has determined that compliance with the standards in chs. 151 and 216 are not sufficient to meet phosphorus criteria in s. NR 102.06.

**Note:** There may be other point sources that are not subject to the procedures in this subchapter, but which are be subject to s. 283.13 (5), Stats. or procedures in other rules. (e.g. ch. NR 243 requirements for concentrated animal feeding operations).

SECTION 10. NR 217.11 is created to read:

**NR 217.11 Definitions.** Definitions of terms and the meaning of abbreviations used in this subchapter are as defined in ss. NR 102.03, 106.03, 205.03, 210.03 and 243.03. In addition, for purposes of this subchapter, the following definitions apply:

(1) "303 (d) list" means a list of waters established by the department and approved by US EPA pursuant to 33 USC 1313 (d) (1) (A) and 40 CFR 130.7.

(2) "Adaptive management" means the use of monitoring data and other information at the time of permit reissuance to reassess management decisions and permit requirements.

(3) "New discharger" means a point source which was not authorized by a WPDES permit as of the effective date of this rule [legislative reference bureau inserts effective date]. A new discharger includes a relocation of an outfall to a different receiving water.

(4) "Phosphorus impaired water" means a surface water listed on the 303 (d) list that is impaired for phosphorus, nutrients or diurnal swings of dissolved oxygen.

**Note:** A surface water may be impaired and placed on the 303 (d) list for a reason other than phosphorus, nutrients or dissolved oxygen ( e.g. mercury), however the procedures in this subchapter only apply to impairments related to phosphorus, nutrients or diurnal swings of dissolved oxygen.

(5) "Privately owned wastewater facilities or treatment works" means a facility or treatment works owned by a nongovernmental entity that discharges domestic wastewater, commercial wastewater or industrial wastewater or a combination thereof.

(6) "Technology based limitation" means an effluent limitation for phosphorus established pursuant to s. 283.11 (3), Stats., and subch. II or s. 283.13 (2) or (4), Stats.

(7) "Total maximum daily load" or "TMDL" means the amount of pollutants specified as a function of one or more water quality parameters that can be discharged into a water quality limited segment and still ensure attainment of the applicable water quality standard in a watershed.

(8) "US EPA" means the United States Environmental Protection Agency.

(9) "WQBEL" means a water quality based effluent limitation.

SECTION 11. NR 217.12 is created to read:

**NR 217.12 General.** (1) Water quality based effluent limitations for phosphorus shall be included in a permit whenever the department determines:

(a) The discharge from a point source contains phosphorus at concentrations or loadings which will cause, has the reasonable potential to cause or contribute to, an exceedance of the criteria in s. NR 102.06 in either the receiving water or downstream waters; and

(b) The technology based effluent limitation or the alternative treatment technology limitation calculated under s. NR 243.13 is less stringent than necessary to achieve the applicable water quality standard for phosphorus in s. NR 102.06.

(2) If the technology based limitation expressed as a concentration is more stringent than the water quality based effluent limitation expressed as a concentration under s. NR 217.13, then the technology based limit shall be included in the permit, along with any mass limitations calculated under this subchapter as required under ss. NR 217.14 (1) and (3).

SECTION 12. NR 217.13 is created to read:

**NR 217.13 Calculation of water quality based effluent limitations for phosphorus.** (1) BASIS FOR LIMITATIONS. (a) The department shall calculate potential water quality based effluent limitations for point source dischargers of phosphorus using the procedures in this section.

(b) Water quality based effluent limitations for phosphorus shall be calculated based on the applicable phosphorus criteria in s. NR 102.06 at the point of discharge, except the department may calculate the limitation to protect downstream waters.

(2) DISCHARGES TO STREAMS AND RIVERS. (a) *Limitation calculation.* For discharges of phosphorus to flowing streams and rivers, the water quality based effluent limitation shall be calculated using the following conservation of mass equation:

$$\text{Limitation} = [(WQC)\ (Qs+(1-f)Qe) - (Qs- fQ_e)\ (Cs)]/Qe$$

Where:

Limitation = Water quality based effluent limitation (in units of mass per unit of volume),

WQC = The water quality criterion concentration (in units of mass per unit volume) from s. NR 102.06,

Qs = Receiving water design flow (in units of volume per unit time) as specified in par. (b),

Qe = Effluent flow (in units of volume per unit time) as specified in par. (c),

f = Fraction of the effluent flow that is withdrawn from the receiving water, and

Cs = Upstream concentration (in units of mass per unit volume) as specified in par. (d).

(b) *Receiving water design flow (Qs).* Based on the availability of information and the professional judgment of the department, the value of $Q_s$ to be used in calculating the effluent limitation for discharges to flowing waters shall be determined using one of the following:

1. The average minimum 7-day flow which occurs once every 2 years (7-day $Q_2$) based on information derived by the U. S. geological survey or other department approved information source, using data from a representative gauging station with a period of record of at least 10 years.

2. If provided by the permittee and approved by the department, the average low 30-day flow which occurs once every 3 years (30-day $Q_3$) based on information derived by the U. S. geological survey or other department approved information source, using data from a representative gauging station with a period of record of at least 10 years.

3. Other flow deemed more representative of flow conditions and approved by the department.

(c) *Effluent flows ($Q_e$).* 1. For dischargers subject to ch. NR 210 and which discharge for 24 hours per day on a year-round basis, $Q_e$ shall equal the maximum effluent flow, expressed as a daily average, that is anticipated to occur for 12 continuous months during the design life of the treatment facility unless it is demonstrated to the department that this design flow rate is not representative of projected flows at the facility.

2. For other dischargers not subject to ch. NR 210, $Q_e$ shall equal, based on the best professional judgment of the department, one of the following:

a. The maximum effluent flow, expressed as a 365 day rolling average of daily discharges that has occurred for 12 continuous months and represents normal operations.

b. The maximum effluent flow, expressed as a 30 day rolling average, which has occurred for 30 continuous days and represents normal operations.

3. For seasonal discharges, discharges proportional to stream flow, or other non-continuous discharge situations, $Q_e$ shall be determined on a case by case basis.

(d) *Upstream concentrations ($C_s$).* The representative upstream concentration of phosphorus shall be used in specific water quality based effluent limit calculations. At a minimum, the representative upstream concentration shall be either a concentration derived by the department based on data from the specific stream or from a similar location. Where data is collected on the upstream location, the concentration used shall equal the median of at least four samples collected throughout the period of May through October. All samples collected during a 28-day period shall be considered as a single sample and the average of the concentrations used. Where data is available from more than one year in the last five years, the department may use all of the years of data in the calculation of the upstream concentration. The department may also use data older than five years provided that it is representative of current conditions. Upstream concentrations may not be measured at a location within the direct influence of a point source discharge. The determination of upstream concentrations shall be evaluated at each permit reissuance.

**Note:** The department has guidance on collection methods for ambient water sampling and may develop guidance of the evaluation of representative data. The guidance may be obtained from the offices of the department of natural resources, bureau of watershed management at 101 South Webster Street, P.O Box 7921, Madison, Wisconsin 53707.

(3) DISCHARGES TO INLAND LAKES AND RESERVOIRS. For discharges of phosphorus directly to inland lakes, reservoirs and other receiving waters which do not exhibit a unidirectional flow at the point of discharge, the department shall set the effluent limit equal to the criterion for the receiving water or the downstream water.

**Note:** As described in s. NR 217.16, effluent limitations for discharges to lakes may also be based on the wasteload allocation of a total maximum daily load, where the total maximum daily load has been approved by US EPA.

(4) DISCHARGES DIRECTLY TO GREAT LAKES. For discharges directly to the Great Lakes, the department shall set effluent limits consistent with nearshore or whole lake model results approved by the department. The department may set an interim effluent limit based on the best readily available phosphorus removal technology commonly used in Wisconsin if nearshore or whole lake model results are not available at the time a permit is reissued.

**Note**: At the time of this rule was promulgated, [legislative reference bureau inserts effective date], the best readily available phosphorus removal technology indicates a limit of 0.6 mg/l.

(5) OTHER METHODS OF LIMIT CALCULATION. The department may use other models and equations for calculating a water quality based effluent limitation if, in the best professional judgment of the department, the model provides a more accurate representation of the conditions.

(6) MULTIPLE DISCHARGES. (a) Except as provided in par. (b), whenever the department determines that more than one discharge may be affecting the water quality of the same receiving water, the resultant combined allowable load shall be divided among the various discharges using an allocation method based on site-specific considerations. Whenever the department makes a determination under this subsection, the department shall notify all permittees who may be affecting the water quality of the same receiving water of the determination and any limitations developed under this subsection. Permittees shall be given the opportunity to comment to the department on any determination made under this subsection.

(b) This subsection does not apply if there is a US EPA approved TMDL for phosphorus for the receiving water. If there is a US EPA approved TMDL, the combined allowable load shall be divided in accordance with the approved TMDL.

(7) MINIMUM EFFLUENT LIMITATIONS. If the water quality based effluent limitation calculated pursuant to the procedures in this section is less than the phosphorus criterion specified in s. NR 102.06 for the water body, the effluent limit shall be set to be equal to the criterion.

(8) NEW DISCHARGERS. If a new discharger is proposing a discharge of phosphorus to a receiving or downstream water that is a phosphorus impaired water, the new discharger may not discharge phosphorus except as follows:

(a) The new discharge of phosphorus is allocated part of the reserve capacity or part of the wasteload allocation in a US EPA approved TMDL;

(b) The new discharger can demonstrate the new discharge of phosphorus will improve water quality in the phosphorus impaired segment; or

(c) The new discharger can demonstrate that the new phosphorus load will be offset through a phosphorus trade or other means with another discharge of phosphorus to the 303 (d) listed water. The offset must be approved by the department and must be implemented prior to discharge.

**Note:** S. 283.84, Stats., establishes requirements for pollutant trades.

SECTION 13. NR 217.14 is created to read:

**NR 217.14 Expression of limitations.** (1) GENERAL. (a) Water quality based effluent limitations, when required pursuant to s. NR 217.15, shall be expressed in a discharge permit as a concentration. A mass limit shall also be included in a permit for discharges of phosphorus to any of the following receiving or downstream waters:

1. A lake or reservoir;

2. An outstanding or exceptional resource water, as designated in ss. NR 102.10 and 102.11;

3. A phosphorus impaired water; or

4. A surface water that has an approved TMDL for phosphorus.

(b) The department may establish mass limitations in permits for any other discharges of phosphorus if a concentration limit for phosphorus is included in the permit, and where an increase in phosphorus load is likely to result in adverse effects on water quality in the receiving water or downstream water.

(c) For discharges to lakes, the department shall also include an annual mass limit for phosphorus in the permit.

(d) If there is a US EPA approved TMDL for the receiving water, the department shall include a mass limit expressed in the manner consistent with the requirements of the TMDL. As provided in s. NR 217.16, this TMDL based mass limit may be included in the permit in addition to, or in lieu of the mass limit established pursuant to this section.

**Note:** In accordance with s. 283.84, Stats., the department may approve the use of phosphorus trading as a means for a point source to achieve compliance with the water quality based effluent limitation, including a TMDL based limitation. The trade shall be incorporated into the terms of the WPDES permit for the point source and must be approved by the department prior to implementation.

(2) CONCENTRATION BASED LIMITATIONS. Concentration effluent limitations calculated under s. NR 217.13 shall be expressed as a monthly average in permits, except for concentrations of less than or equal to 0.3 mg/l where limitations may be expressed as annual averages. If a concentration limitation expressed as an annual average is included in a permit, a monthly average concentration limitation equal to 3 times the water quality based effluent limitation calculated under s. NR 217.13 shall also be included in the permit.

(3) MASS BASED LIMITATIONS. Concentration effluent limitations as calculated under s. NR 217.13 shall be converted into mass effluent limitations using the effluent flow identified in s. NR 217.13 and an appropriate conversion factor, and expressed as a monthly average in the permit,

except for concentration based limitations of less than or equal to 0.3 mg/l where mass limitations may be expressed as annual averages.

SECTION 14. NR 217.15 is created to read:

**NR 217.15 Determination of necessity for water quality based effluent limitations for phosphorus.** (1) (a) *General.* The department shall include a water quality based effluent limitation for phosphorus in a permit whenever the discharge or discharges from a point source or point sources contain phosphorus at concentrations or loadings which will cause, has the reasonable potential to cause or contribute to, an exceedance of the water quality standards in s. NR 102.06 in either the receiving water or downstream waters. The department shall use the procedures in this section to make this determination.

(b) *Permittees with existing phosphorus limitations.* If a permittee has a technology based phosphorus limitation in a permit that is less restrictive than a water quality based effluent limitation for phosphorus calculated pursuant s. NR 217.13, then the department shall include the water quality based effluent limitation in the permit.

(c) *Permittees without existing phosphorus limitations.* If a permittee discharges phosphorus, but does not have a technology based limitation for phosphorus in its permit, the department shall use the procedures in this paragraph to determine whether a discharge will cause, has the reasonable potential to cause or contribute to, an exceedance of the phosphorus water quality criterion in s. NR 102.06 in the receiving or downstream waters, and whether to include a water quality based effluent limit for phosphorus in the WPDES permit.

1. Using at least 11 daily discharge concentrations of phosphorus, if the upper 99$^{th}$ percentile of the 30 day average discharge concentration of phosphorus exceeds the potential

phosphorus limitation calculated under s. NR 217.13, then the water quality based effluent limitation for phosphorus shall be included in the WPDES permit. If the upper 99th percentile of the 30 day average discharge concentration of phosphorus is less than the potential phosphorus limitation calculated under s. NR 217.13, then a water quality based effluent limitation for phosphorus is not required in the WPDES permit. The upper 99th percentile of available discharge concentrations shall be calculated pursuant to s. NR 106.04 (5).

2. If 11 daily discharge concentrations of phosphorus are not available for a permittee, then a water quality based effluent limitation for phosphorus shall be included in the permit when the mean of available effluent concentrations is greater than one-fifth of the limit.

3. If no phosphorus effluent data is available for an existing permittee, the department may require phosphorus sampling as part of a permit application for reissuance to determine whether a water quality based effluent limit is necessary in the WPDES permit under par. (a), or the department may use effluent data information from similar point sources to make the determination under par. (a).

**Note:** The department will develop guidance regarding the administration of this section to ensure that permitted discharges with a reasonable potential to cause or contribute to exceedances of the applicable phosphorus water quality criterion in s. NR 102.06 are identified.

(d) *Sampling.* Prior to permit reissuance, a permittee discharging any phosphorus shall collect effluent samples of phosphorus at a frequency specified by the department in the permit application for reissuance.

(e) *New dischargers.* The department shall include a water quality based phosphorus limitation in a permit for a new discharger if the department determines the new discharger will discharge phosphorus at concentrations or loadings which may cause or contribute to exceedances of the water quality criteria in s. NR 102.06 in either the receiving water or downstream waters.

To estimate the amount of phosphorus discharged by a new discharger, the department may consider projected discharge information from the permit applicant and phosphorus discharge information from similar sources.

(2) If the department determines a water quality based effluent limitation is not necessary in a permit based on the procedures in this section, the department may still require monitoring for phosphorus discharges.

SECTION 15. NR 217.16 is created to read:

**NR 217.16 Relationship of WQBELs and TMDL based limitations.**

(1) In addition to a water quality based effluent limitation calculated pursuant to s. NR 217.13, the department may derive a water quality based effluent limitation for phosphorus consistent with the wasteload allocation and assumptions of a US EPA approved TMDL that is designed to achieve water quality standards in ch. NR 102. This TMDL based limitation may be included in a permit in addition to, or in lieu of, the water quality based limitation calculated under s. NR 217.13. When deciding whether to use a TMDL based limit as a substitute for the limitation calculated under s. NR 217.13, the department shall consider the following factors:

(a) The degree to which nonpoint sources contribute phosphorus to the impaired water;

(b) Whether waters upstream of the impaired waters are meeting the phosphorus criteria; and

(c) Whether waters downstream of the impaired water are meeting the phosphorus criteria.

(2) If the phosphorus limitation based on an approved TMDL is less stringent than the water quality based effluent limitation calculated in s. NR 217.13, the department may include the TMDL based limit in lieu of the limit calculated in s. NR 217.13 if the limit calculated under s. NR

217.13 has not yet taken effect. If the department includes the TMDL based limitation for phosphorus in the WPDES permit in lieu of the limit calculated in s. NR 217.13, the TMDL based limit may remain in the permit for up to two permit terms to allow time for implementation of the TMDL, or the implementation period specified in the TMDL, whichever is less. The department may include a schedule of compliance to achieve a TMDL based limit if the department determines a schedule of compliance is necessary. If after two permit terms, the department determines the nonpoint source load allocation has not been substantially reduced, the department may impose the more stringent water quality based effluent limitation calculated under s. NR 217.13, or may include the TMDL based limitation for an additional permit term if the determines there will be significant nonpoint source load reductions within the upcoming permit term. If the department decides to remove a TMDL based phosphorus limit from a permit and instead include a more stringent water quality based phosphorus limit in the permit calculated under s. NR 217.13, the department may provide a schedule of compliance for the more stringent limit if the department determines additional time is needed for the permittee to comply with the revised limit. Such schedules shall require compliance as soon as possible, but in no case no more than 5 years from the date that the permit is reissued or modified to include the revised effluent limitations.

(3) If a phosphorus water quality based limit calculated under s. NR 217.13 has already taken effect in a permit, the department may replace the limit with a less stringent TMDL based limit, if allowed pursuant to antidegradation procedures in ch. NR 207.

**Note:** The TMDL based limitation may be less stringent than the water quality based effluent limitation calculated under s. NR 217.13 in cases where nonpoint sources are the significant phosphorus sources responsible for the impairment.

(4) If the phosphorus limitation based on an approved TMDL is more stringent that the water quality based effluent limitation calculated under s. NR 217.13, the department shall include the more stringent TMDL based limitation in the WPDES permit.

SECTION 16. NR 217.17 is created to read:

**NR 217.17 Schedules of Compliance.** (1) GENERAL. (a) Except as provided in sub. (4), the department may provide a schedule of compliance for a water quality based phosphorus limitation in a WPDES permit, where based on available information the department finds that:

1. The schedule of compliance will lead to compliance with the water quality based effluent limitation as soon as possible; and

2. The schedule of compliance is appropriate and necessary because the permittee cannot immediately achieve compliance with the water quality based effluent limitation based on existing operation of its treatment system.

**Note:** Before any compliance schedule is established in a permit pursuant to this subchapter, the department must make the finding in par (a).

(b) In determining whether a compliance schedule is appropriate and determining the length of the compliance schedule, the department shall consider all of the following factors:

1. Whether there is any need for modifications to the treatment facilities, operations or measures to meet the water quality based effluent limitation, and if so, how long it will take to implement the modifications. If the department determines that a permittee only needs to make operational changes to achieve compliance with a limitation, the compliance schedule shall be as brief as possible and only allow time for operational start-up adjustments.

2. The amount of time the discharger has already had to meet the water quality based effluent limitation under prior permits.

3. The extent to which discharger has made good faith efforts to comply with the water quality based effluent limitation and other requirements in prior permits, if applicable.

4. The extent to which the phosphorus removal process technologies have been developed and proven to be effective.

(c) In determining whether a compliance schedule is appropriate and determining the length of the compliance schedule, the department may also consider any of the following factors:

1. Whether there is a need to acquire a substantial amount of property to accommodate the needed modifications;

2. Whether there is a need to develop an extensive financing plan and obtain financing for the proposed treatment plant upgrade; and

3. The likelihood that a TMDL will be developed and approved within the permit term and whether the wasteload allocation for the facility will likely be less stringent than a water quality based effluent limit calculated under s. NR 217.13.

**Note:** A compliance schedule may be provided for both a water quality based effluent limit for phosphorus calculated under s. NR 217.13 or a TMDL based limit for phosphorus.

(2) MAXIMUM COMPLIANCE SCHEDULE PERIOD. Except for situations where filtration or a similar phosphorus removal process is required, any compliance schedule established by the department under sub. (1) may not exceed 7 years from the date a permit was first modified or reissued to include a water quality based phosphorus limit calculated under s. NR 217.13. Where compliance with the water quality based phosphorus limit requires the construction of filtration or a similar phosphorus removal process, the department may grant a schedule of compliance not to exceed 9 years from the date that the permit is first reissued or modified to include effluent limitations developed under provisions of this subchapter. In cases where a compliance schedule

extends beyond 5 years, the department may revise the schedule at reissuance or pursuant to a permit modification.

(3) REQUIREMENTS, LIMITATIONS, DATES AND REPORTING. When granting a schedule of compliance, the department shall include, as conditions of the permit, the following:

(a) Dates for achievement of interim requirements. The time between interim dates may not exceed one year.

(b) A sequence of actions or operations that may include, as appropriate, but are not limited to:

1. Development and implementation of a phosphorus discharge optimization plan for the current operation.

2. Preparation of preliminary and final designs for new or modified treatment technology.

3. Initiation and completion of construction.

(c) Interim effluent limitations representing good management and operation for similar treatment processes based on performance of other wastewater treatment facilities that will lead to the compliance with the final water quality based effluent limitation.

(d) A requirement that no later than 30 days following each interim date and the final date of compliance, the permittee shall notify the department in writing of its compliance or non-compliance with the interim or final requirements, including submittal of progress reports. If any interim requirement will take more than one year to complete, the permit shall also include a projected completion date for the interim requirement.

(e) The final water quality based effluent limit for phosphorus calculated pursuant to s. NR 217.13 shall be included in the permit even if the limit is not effective during the permit term. The department may revise the final limit at permit reissuance or pursuant to a permit modification.

(f) If the permittee chooses to engage in pollutant trading as a means to achieve compliance with interim limitation or final water quality based effluent limitations, then terms and conditions related to the trade shall be incorporated into the permit.

(4) NEW DISCHARGERS. Any new discharger may not receive a compliance schedule to achieve compliance with a phosphorus water quality based effluent limitation.

SECTION 17. NR 217.18 is created to read:

**NR 217.18 Watershed Adaptive Management Option.** (1) GENERAL. The adaptive management option is a strategy to achieve the phosphorus water quality criteria in s. NR 102.06 in the most economically efficient manner, and as soon as possible, taking into consideration the contributions of phosphorus from point and nonpoint sources in a watershed.

(2) APPLICATION. If requested by the permittee in the permit application for reissuance and if approved by the department, the permittee may implement a watershed adaptive management approach under this section as a means to achieve compliance with the phosphorus water quality standards in s. NR 102.06. The department may approve and authorize the adaptive management option in this section only if the permittee demonstrates and the department concurs that all of the following conditions are met:

(a) The exceedance of the applicable phosphorus criterion in s. NR 102.06 is caused by phosphorus contributions from both point sources and nonpoint sources;

(b) Either the sum of the nonpoint sources and the permitted municipal separate storm sewer system contribution of phosphorus to the receiving water is at least 50 percent of a total contribution within the watershed of the receiving water where the applicable phosphorus criterion

in s. NR 102.06 is exceeded; or the permittee demonstrates that the applicable phosphorus criterion cannot be met in the watershed without the control of phosphorus from nonpoint sources.

(c) Documentation that the proposed water quality based effluent limit in the applicant's permit will require filtration or other equivalent treatment technology to achieve compliance.

(d) The permittee has submitted an adaptive management plan that identifies specific actions to be implemented that will achieve compliance with the applicable phosphorus criterion in s. NR 102.06 through verifiable reductions of phosphorus from point and nonpoint sources in the watershed. At a minimum, the plan shall include the following:

1. An analysis of the levels of phosphorus in the permittee's effluent and significant sources of point and nonpoint phosphorus loadings in the watershed.

2. Goals and measures for determining whether the actions identified in the plan are effective in achieving compliance with the applicable phosphorus criterion in s. NR 102.06.

3. Identification of any anticipated partners that will assist in implementing the phosphorus reductions to achieve compliance with the applicable phosphorus criterion in s. NR 102.06, including the partner's level of support for the plan.

4. A demonstration that the permittee has the ability to fund and implement the plan either individually, or in conjunction with other permittees and nonpoint sources, or other partners, including municipal and county governments, in the watershed. Plans should include any contracts reflecting commitments by partners to implement applicable actions.

(3) PERMIT TERMS AND CONDITIONS. If the department determines that the permittee has provided all necessary information and the conditions in sub. (2) have been met, it may issue a permit that includes watershed adaptive management actions to achieve compliance

with the applicable phosphorus criterion in s. NR 102.06 on a schedule approved by the department. At a minimum, the permit shall include the following:

(a) Monitoring in the receiving water at locations and times established in the permit to assess phosphorus loading and to document progress toward achieving the applicable phosphorus criterion in s. NR 102.06. The department shall also require permittees to monitor, record and report the mass and concentration of phosphorus in the effluent at an appropriate frequency specified by the department in the permit.

(b) Requirements to design and implement the actions identified in the permittee's approved adaptive management plan in accordance with the goals and measures identified in the plan and any compliance schedule included in the permit.

(c) Requirements to optimize the permittee's treatment system to control phosphorus.

(d) Reporting procedures and deadlines for all monitoring, assessment and data gathering requirements in the plan. Permittees shall be required to file and the department will review an annual report that identifies implementation of actions in that plan that were completed the previous year, and that documents any progress in achieving the goals and measures in the adaptive management plan. Adjustment or corrections, to the extent that they are needed, will be incorporated into the permit via permit modification procedures.

(e) Numerical effluent limitations as follows:

1. All permits issued under the adaptive management option in this section shall include water quality based effluent limitations calculated consistent with clean water act requirements according to s. NR 217.13 or a US EPA approved TMDL. These limitations shall take effect in accordance with the timeframe established in this paragraph, or pursuant to par. (g) if the adaptive management option is terminated.

2. In the first permit reissuance term following approval by the department under sub. (2), the initial interim effluent limitation shall be no higher than 0.6 mg/l of total phosphorus expressed as a six-month average. An effluent limit not to exceed 1.0 mg/l of total phosphorus expressed as a monthly average shall also be included in the permit. The department may allow the permittee a compliance schedule that may not exceed five years if necessary to meet this interim limitation.

3. If the permittee has met all of the requirements of its previous permit, but the monitoring data of the receiving water indicate that the applicable phosphorus water quality criterion in s. NR 102.06 has not been met by the time the first permit issued under the adaptive management option expires, the department may issue a subsequent adaptive management permit. The subsequent permit shall include an interim effluent limitation of no higher than 0.5 mg/l expressed as a six-month average. An effluent limit not to exceed 1.0 mg/l of total phosphorus expressed as a monthly average shall also be included in the permit. The subsequent permit shall also include an updated adaptive management plan to achieve the phosphorus water quality criterion in s. NR 102.06. The department may allow the permittee a compliance schedule that may not exceed five years if necessary to meet this interim limitation.

4. If by the expiration of the second permit issued under the adaptive management option, monitoring data collected for the receiving water indicate that the applicable phosphorus criterion under s. NR 102.06 has not been met, the department shall require compliance with a water quality based effluent limitation for phosphorus calculated under s. NR 217.13 or a US EPA approved TMDL. The department may allow the permittee a compliance schedule that may not exceed five years if necessary to meet this limitation.

(f) A statement that failure to implement any of the terms or conditions established under subparagraphs (a) through (e) above, is a violation of the permit.

(g) Provisions that the department may terminate the adaptive management option for a permittee and require compliance with a phosphorus effluent limitation calculated under s. NR 217.13 or a US EPA approved TMDL based on any of the following reasons:

1. Failure to implement the adaptive management actions in accordance with the approved adaptive management plan and compliance schedule established in the permit.

2. New information becomes available that changes the department's determinations made under sub. (1).

3. Circumstances beyond the permittee's control have made compliance with the applicable phosphorus criterion in s. NR 102.06 pursuant to the plan's goals and measures infeasible.

4. A determination by the department that sufficient reductions have not been achieved to timely reduce the amount total phosphorus to meet the criteria in s. NR 102.06.

SECTION 18. NR 217.19 is created to read:

**NR 217.19 Variances for stabilization ponds and lagoon systems.** (1) GENERAL.

(a) An owner or operator of a permitted wastewater treatment system that consists primarily of a stabilization pond system or a lagoon system may apply for a variance to the phosphorus water quality based effluent limitations pursuant to s. 283.15 (4) (a) 1. f., Stats., using the procedures in this section.

**Note:** Stabilization ponds and lagoons are operated primarily by communities serving a population of 2000 or less and small industries. With currently available technology that could be used in conjunction with stabilization ponds or lagoons, it is unlikely that phosphorus water quality based effluent limits less than 1 mg/l can be consistently met. To meet phosphorus water quality based effluent limits of less than 1 mg/l, it will be necessary for owners of the systems to construct new wastewater treatment plants which could result in substantial and widespread adverse social and economic impacts.

(b) A new discharger may not receive approval for a variance under this section or pursuant to any other variance procedure.

(2) APPLICATION FOR A VARIANCE. (a) The application for a variance under this section shall be submitted with the WPDES permit application for reissuance, or within 30 days after the permittee receives written notification of the proposed phosphorus limits, if the notification occurs later. The application shall be submitted on the phosphorus lagoon and stabilization pond variance form made available from the department or on a form containing equivalent information.

**Note:** Owners or operators of stabilization ponds or lagoon systems may obtain the variance application form from the offices of the department of natural resources, bureau of watershed management at 101 South Webster Street, P.O Box 7921, Madison, Wisconsin 53707. The form will provide guidance on the type of information needed to demonstrate widespread social and economic impacts.

(b) The application shall, at a minimum, include the following information:

1. Information required by s. NR 200.22, except for the information in s. NR 200.22 (1) (e) 6.

2. A statement that the permittee is seeking a variance pursuant to this section and s. 283.15 (4) (a) 1. f., Stats.

3. Information on the number and volume of lagoon or pond treatment cells, treatment processes, discharge periods, retention times, population served, influent flow, and available capacity for holding wastewater.

4. Other information requested by the department that is relevant to the review conducted under sub. (3).

**Note:** It is recommended that the permittee ask for calculation of potential phosphorus water quality based limits at least 12 months prior to permit expiration. This information will help the permittee complete their variance request portion of the permit application which is due 180 days prior to permit expiration.

(3) DEPARTMENT REVIEW. (a) The department shall review the submitted application for the variance and determine whether the permittee can achieve the phosphorus effluent limitations calculated pursuant to s. NR 217.13 without widespread adverse social and economic impacts. In making this determination, the department shall:

1. Compare the calculated phosphorus effluent limitations to the phosphorus effluent data submitted under sub. (2). If the permittee does not have sufficient phosphorus discharge data for its system, the department may augment the data set with effluent data from a similar lagoon or pond system in the state to make the comparison. The department may apply statistical methodologies to make its determination on the ability of the current lagoon or stabilization pond system to meet phosphorus limitations.

2. Evaluate the financial affordability analysis submitted by the permittee in response to the variance application requirement in s. NR 200.22 (p).

**Note:** The department may use a US EPA publication titled Interim Economic Guidance for Water Quality Standards – Workbook, EPA-823-B-95-002, March 1995 provides information on evaluating economic and social impacts.

(b) The department's decision to approve or deny a variance under this section shall be made on or before the date of the s. 283.53 (3) (d), Stats., public notice for the proposed permit reissuance and shall be made in accordance with the following:

1. If the department determines that the permittee cannot meet the phosphorus water quality based effluent limitation without widespread adverse social and economic impacts, the department shall approve the variance. If the variance is approved, the department shall specify in the permit that the variance has been granted for phosphorus, and the requirements in sub. (4) shall also be included in the permit.

2. If the department determines that the permittee can meet the phosphorus effluent limitations without widespread adverse social and economic impact or that effluent limitations are not necessary as determined by s. NR 217.15, the department shall deny the variance and notify the applicant of this determination in writing.

(c) If the department denies a variance under this section, a permittee may not apply again after the permit is issued for a variance from the phosphorus water quality standard based on the factor in s. 283.15 (4) (a) 1. f., Stats., for the same permit term.

(d) A permittee may seek a variance from a phosphorus limit in a reissued WPDES permit based on the factors in s. 283.15 (4) (a) 1. a. to e., Stats, and using the procedures and requirements in s. 283.15, Stats., and ch. NR 200.

**Note**: All variances are subject to US EPA review and approval.

(4) PERMIT TERMS IF VARIANCE IS APPROVED. If the department approves a variance to the phosphorus effluent limitations under this section, the following requirements shall be included in the reissued permit:

(a) The permit shall include a phosphorus variance effluent limitation as follows:

1. The numeric limitation shall equal the upper $99^{th}$ percentile of representative daily discharge concentrations (one-day $P_{99}$) as calculated in s. NR 106.05 (4) (a).

2. The variance limitation shall be expressed as a daily maximum concentration.

(b) The permittee shall conduct monitoring of phosphorus during discharge periods at a frequency specified in the permit.

(c) The permittee shall, to the extent practicable, identify and minimize the non-domestic sources of phosphorus to the system and operate the treatment system to minimize exceedances of the calculated limits.

(d): The permittee shall investigate treatment technologies, process changes, pollutant source reduction steps, wastewater reuse or other techniques that may result in compliance by the permittee with the applicable phosphorus water quality standard, and shall submit reports on those investigations as required by the department.

(5) CONTINUED VARIANCES. If a permittee received approval for a variance to the phosphorus standard under this section in a reissued permit, the permittee may request a continued variance from the phosphorus standard in a subsequent reissued permit pursuant to the procedures and requirements in this section.

SECTION 19. EFFECTIVE DATE. This rule shall take effect on the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22 (2), Stats.

SECTION 20. BOARD ADOPTION. The forgoing rule was approved and adopted by the State of Wisconsin Natural Resources Board on _____.

Dated at Madison, Wisconsin _____.

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

By _____.

Matthew J. Frank, Secretary

(SEAL)