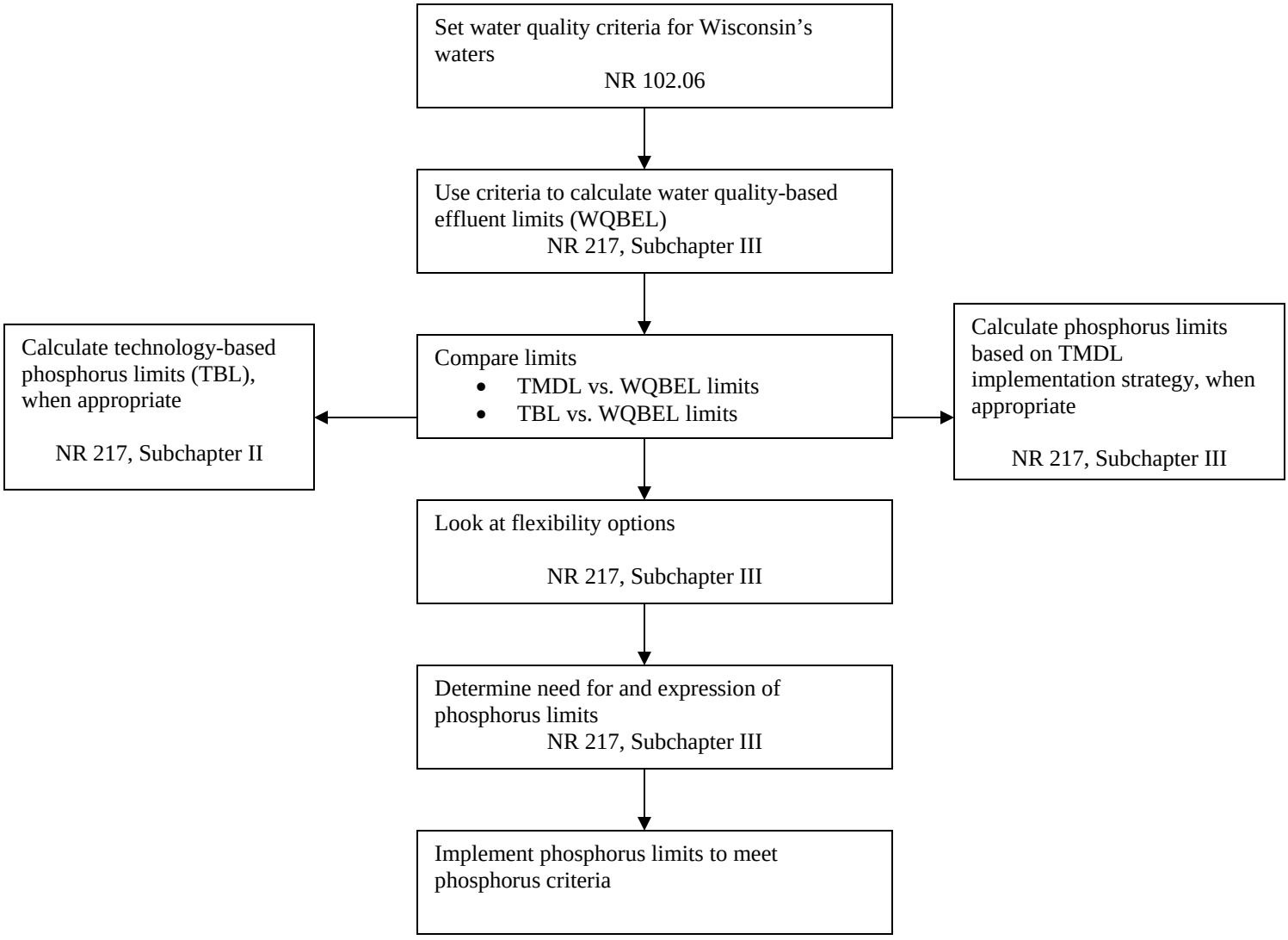
Phosphorus Rule Summary

The following content is meant to provide a general overview of the phosphorus rules, as described in NR 102, NR 151 and NR 217. For more detail, see the rule content:

- NR 102- http://legis.wisconsin.gov/rsb/code/nr/nr102.pdf
- NR 151- will become available once published in the Wisconsin Administrative Register
- NR 217- http://legis.wisconsin.gov/rsb/code/nr/nr217.pdf

General Structure of NR 102 and NR 217:



For more specific details on the rules, please review the prepared questions and answers. If you have additional questions, please email DNRphosphorus@wisconsin.gov. Topics covered in this section include:

Phosphorus Limits

1. Are All Waters of the State Covered Under the Phosphorus Revisions?

Phosphorus criteria apply to surface waters of the state including streams, rivers, lakes, reservoirs, and the Great Lakes. However, NR 102.06(6) defines some waters that do not have specific phosphorus criteria including ephemeral streams, lakes and reservoirs of less than 5 acres in surface area, wetlands (including bogs), and waters identified as limited aquatic life waters in ch. NR 104. Although these waters do not have specific phosphorus criteria, phosphorus limits may be imposed to point sources that discharge to these waterbodies in order to protect downstream waters.

2. Who Needs to be Evaluated for Phosphorus Limits?

As stated in NR 217.02 of Subchapter II, any point source that discharges phosphorus to a surface water of the state must be *evaluated* for technology-based phosphorus limits. However, some exemptions exist for small publicly owned treatment works (POTWs) and wastewater discharges, as defined in NR 217.04(1)(a)(1) and NR 217.04(1)(a)(2). In these cases, discharges do not need to be evaluated for technology-based phosphorus limits. NR 217, Subchapter II, which has been in place since 1993, procedurally describes technology-based phosphorus limits.

As of December 1, 2010 under NR 217 Subchapter III, some point sources also need to be evaluated for water quality based effluent limits (WQBELs). Discharges that need to be *evaluated* for phosphorus WQBELs including industrial, municipal, wastewater

discharges, and, in some cases, animal feeding operations. NR 217, Subchapter III procedurally describes phosphorus WQBELs.

3. What is the Difference between Technology-Based Effluent Limits and WQBELs?

The intent of technology-based effluent limits is to require a minimum level of treatment of pollutants for point source discharges based on available treatment technologies, while allowing the discharger to use any available control technique to meet the limits.

Water quality based effluent limits (WQBELs) are based on the quality of the receiving water, rather than available treatment technologies. In order to ensure the protection of water quality and the designated uses of the receiving water, WQBELs may be more stringent than technology-based effluent limits.

4. When are Phosphorus Limits Required?

Technology-based phosphorus limits are required for any point source discharge that exceeds the thresholds as described in NR 217.04(a)(1-6). Phosphorus WQBELs are required if a point source discharge has the potential to cause phosphorus criteria exceedance in either the receiving water or downstream waters (NR 217.12(1)(a)).

It is possible that a discharge may be subject to technology-based limits and WQBELs. In these cases, the limit that is most protective of the water quality will be used in the WPDES permit- NR 217.12(1)(b) and NR 217.12(2).

Flexibility in Limit Calculations and NR 217

1. How are Nonpoint Sources Evaluated in Determining a WQBEL for a Point Source?

The phosphorus contribution from nonpoint sources needs to be evaluated to successfully implement US EPA approved TMDLs and watershed adaptive management strategies. In these cases, reductions in nonpoint sources *can* be used to help achieve the overall phosphorus goal of the water. By accounting for the contributions from nonpoint sources, it is possible that the WQBEL limits for point sources are more relaxed.

2. Is there Flexibility in NR 217?

There is some flexibility built into NR 217 to help develop and implement phosphorus criteria. Some of these options include:
WQBEL Limits in TMDLs: As described above (question 1), phosphorus limits can be calculated based on a Total Maximum Daily Load (TMDL) implementation strategy for waters with US EPA approved TMDLs. These TMDL derived phosphorus limits are based on wasteload allocations and assumptions of the TMDL. Specific information about the relationship of WQBEL and TMDL based phosphorus limits can be found in NR 217.16. General TMDL information can also be found at http://dnr.wi.gov/org/water/wm/wqs/303d/TMDL.html.

WQBEL Limits in Adaptive Management Strategies: Phosphorus WQBELs may be adjusted based on the implementation of a watershed adaptive management plan- NR 217.18.
Phosphorus Trading: As stated in NR 217.13(8)(c) and NR 217.14(1)(d), permittees may to choose to engage in pollutant trading as a means to achieve compliance with interim limitations or final water quality based effluent limitations. Section 283.84, WI Stats., establishes requirements for pollutant trades.
Compliance Schedule: The Department may approve, where appropriate, additional time in a compliance schedule beyond the 5 year permit term in order to achieve compliance- NR 217.16(2), NR 217.17.

Agricultural Land Use Changes

1. What Agricultural Land Uses will be Effected by the Phosphorus Revisions?

Some agricultural activities have already been regulated for phosphorus under NR 151. Further water quality protection strategies have been proposed in revisions to NR 151- effective January 2011. These revisions will impact agricultural land uses including croplands, pastures and winter grazing areas.

2. What is the Phosphorus Index and how will it be Used to Protect Water Quality?

The Wisconsin Phosphorus Index (P-Index) is a tool used to predict the phosphorus loss from agricultural fields due to runoff. The P-Index calculates this loss using land use characteristics and natural conditions including land slope, soil phosphorus levels, and average precipitation levels, among other things. P-Index standards are defined in NR 151.04(2)(a) for croplands, pastures and winter grazing areas:

1. The average P-Index during an accounting period should be 6 or less, and
2. The P-Index in any individual year within the accounting period may not exceed 12.

These P-Index values were identified based on the needs of the crops and water quality protection. For more information about the P-Index visit http://wpindex.soils.wisc.edu/.

Some farmers may need to curb the phosphorus coming off these fields in order to meet the specified P-Indices. Nutrient management plans, as defined in NR 151.07 and ATCP 50.04(3), will identify the need for phosphorus controls and strategies to achieve compliance. However, the Department, in cooperation with UW-Madison research, estimates that 80 percent of cropland is already in compliance with the P-Index standards proposed in NR 151 and will therefore not be impacted by the revisions to NR 151.

3. Will the Phosphorus Revisions Impact Tillage Practices?

The revisions to NR 151 will prevent tillage in select areas and may control the types of tillage practices used in others. NR 151.03 and NR 151.04(4) state that tillage operations may not destroy stream banks or deposit soil, nutrients, or manure directly in surface waters- those defined in NR 102.03(6). To prevent these direct deposits, no tillage

operations may be conducted within 5 feet of the top of the channel of surface waters-NR 151.03(2).

In order to meet the P-Index Standards (as described above), conservation tillage practices may be required and may be specified in nutrient management plans. Other conservation practices, not related to tillage, may also be required to meet these standards. These strategies may include crop rotations and grass waterways, among other things. Nutrient management plans will be developed in cooperation with land owners to develop suitable, environmentally protective, nutrient management plans.