



Water Quality Standards Revisions – 2016 Fact Sheet & Question and Answer July 14, 2016

During 2016, the Vermont General Assembly passed Act 79, which amended §§10VSA1251-1253 to revise the classification structure for Vermont’s surface waters. As a result, the Division is now engaging a public rulemaking process to revise the standards to become consistent with Act 79, which will improve Vermont’s ability to protect, maintain, enhance, and restore surface waters. The changes are intended to address two longstanding issues. The first issue regards the long-term challenges of implementing the “Water Management Types” component of the Standards that were first promulgated in 1998. The second issue capitalizes on an opportunity presented by Act 64 of 2015, to revise the antidegradation policy within the Standards to obtain consistency with the Federal approach to antidegradation, while developing a companion Antidegradation Rule. To address these important needs, and to create consistency between the Vermont Water Quality Standards and related State and Federal guidelines and policies, the following specific revisions are being proposed.

Background: In 2012, Vermont Act 138 conferred statutory authority to the Agency of Natural Resources (ANR) to conduct rulemaking for the Water Quality Standards (Standards); authority which previously rested with the VT Natural Resources Board. In 2014, ANR completed the first major upgrade to the Standards in many years, by upgrading over 100 individual water quality criteria, fixing previously flawed E. coli criteria, and introducing the regions first nutrient criteria for phosphorus for inland lakes and rivers/streams. These new Standards were adopted in October, 2014, and approved by USEPA in September, 2015. With these important technical changes complete, the Division is now engaging a public process to address structural components of the Standards, to improve Vermont’s ability to protect, maintain, enhance, and restore surface waters. These proposed changes are intended to address two longstanding issues. The first issue regards the long-term challenges of implementing the “Water Management Types” component of the Standards. The second issue capitalizes on an opportunity presented by Act 64 of 2015, to revise the Antidegradation Policy within the Standards to obtain consistency with the Federal approach to antidegradation, while developing a companion Antidegradation Rule.

Addressing Water Management Types: The intent of Water Management Types (WMT) is to recognize that certain Class B waters exhibit conditions that are in the higher range of the Class B scale and should be managed to maintain this quality. The challenge to implementing WMT is that the Standards require that a surface water ascribed to a WMT be managed to support all respective uses described by that WMT. This means that in order for a water to be recognized as a specific WMT, all uses have to be of the same quality,

notwithstanding that some uses are measured along an ecological scale, and others along a gradient of human use or enjoyment. As such, it can be impractical to manage a stream simultaneously for very high quality biota, very good aesthetics, and very good boating. Criteria can be developed to protect these uses individually, but these criteria may conflict when applied across uses. Articulating the management implications for waters in a particular WMT has proven difficult and confusing, resulting in no WMT designations since the introduction of the approach in 1998.

Now, pursuant to Act 79, a new Class B1 has been created, and designated uses are now to be independently classified. This means that a waterbody may in the future be classified at different levels for individual uses, so long as the Class B2 minimum water quality conditions are maintained. Three of many prospective examples of the use of Class B1 may be:

- A stream currently classified as B2 could be designated as Class B1 for aesthetic uses, in recognition of specific aesthetic characteristics that provide very good aesthetic condition, but which do not rise to the level of Class A1 or Outstanding Resource Waters.
- A stream currently classified as B2 could be designated as Class B1 for aquatic life use, in specific recognition of the very high quality status of that stream's biological integrity. That stream would then be managed to maintain the high-quality aquatic biota by protecting aquatic habitat.
- A river currently classified as B2 may be designated as Class B1 boating, in recognition of specific boating characteristics, so long as management for that use does not preclude attainment of other uses.

Changes to the Water Quality Standards Rule: The proposed amendments to the Standards are as follows.

- The Standards are being restructured to account for Act 79.
 - Act 79 sets the expectation that there is now a new class of waters – Class B1, and that specific uses may be designated upwardly from Class B2 (the base classification) to B1 or even A1
 - The Standards have been amended to accommodate this change. This results in a substantial amount of strikeout/redline, but limited changes to the actual criteria.
- The concept of dynamic stream equilibrium is being included in the management objectives for aquatic habitat.
 - The management of streams to support dynamic stream equilibrium represents State policy under Acts 110/138, and this intent has been inserted into the WQS.
- Improved the temperature criteria

- The Division has worked with the Department of Fish and Wildlife to examine an extensive dataset on temperature in trout streams. As a result, a new temperature criterion has been proposed to complement existing temperature criteria, specifically to protect fishing uses for wild trout fishery waters designated to Class B1.
- In addition, a “no change from the natural condition” criterion has been proposed for waters designated as Class A1 for the same fishing uses.
- Incorporation of biological assessment procedures
 - WSMD is proposing to incorporate the biological assessment procedures long in use into an Appendix of the WQS. This will lend predictability and transparency to the assessment process. A new stream type – slow winding streams – is being added to these procedures.
 - This does not eliminate the authority to use other scientifically based studies and procedures. The Division is also contemplating insertion of procedures for the evaluation of aquatic life use affected by chlorides.
- Update to appendix c (toxic criteria)
 - A new EPA requirement that all toxic criteria are to be updated when new EPA guidance is issued, unless State has compelling reason why not to.
- Proposed reclassification of certain surface waters to A1
 - Based on a series of discussions with the Green Mountain National Forest, a series of surface waters are being proposed for designation to Class A1 for specifically identified designated uses.
- Antidegradation policy
 - The Division proposes to amend the language pertaining to socioeconomic justification to provide alignment with Federally-required language. In addition, the addition of public notification and alternatives analysis, also Federal requirements, is being proposed.

Questions and Answers

1. Will waters that are currently classified as A(2) and A(1) retain their classification under the proposed water quality standards (WQS)?

Answer: Yes. Waters that have been previously classified as A(1) or A(2) will maintain that classification for each individual use within those waters for which the waters were classified as A(1) or A(2). Note, A(1) waters were previously classified A(1) collectively for aquatic biota and wildlife, aquatic habitat, aesthetics, swimming, boating, and fishing. Under the proposed amendments, a water may be classified

A(1) for one or more of the individual uses of aquatic biota and wildlife, aquatic habitat, aesthetics, swimming, boating, or fishing. Note, A(2) waters were previously classified A(2) collectively for public water supply (now referred to as “public water source”), aquatic biota and wildlife, aquatic habitat, aesthetics, swimming, boating, and fishing. However, it is important to note that under the current and proposed standards A(2) waters have more stringent criteria applicable to the public water source, swimming, and aesthetic uses only.

2. Do the proposed WQS include any management objectives or criteria that are less stringent for the respective classes?

Answer: No. The protection afforded for all management objectives and criteria will be as stringent as the current version of the WQS. The narrative criteria for some of the use classifications have been changed to be consistent among uses and to adjust for the conversion from Water Management Types I, II, and III in Class B to Class B(1) and B(2). The changes that are being proposed involve the inclusion of numeric and temperature criteria for the cold water fishing use, and the addition of numeric nutrient criteria for streams classified as B(1) for the aquatic biota and wildlife use and for lakes classified as B(1) for the aesthetics use.

3. What would happen if reclassifying a particular use to a higher level threatens to jeopardize another use as a result?

Answer: If protecting a use at a higher classification threatened another use such that the other use might become impaired, the original use could not be reclassified. Under the WQS all current use classifications shall be protected and maintained.

4. In order for a waterbody be reclassified to B(1) or A(1) for aquatic biota and wildlife , does that waterbody have to meet the nutrient criteria as well?

Answer: No. The nutrient criteria protect the aquatic biota when no nutrient response variables exist for a particular water. Compliance with the nutrient criteria can be achieved by meeting the numeric nutrient criteria or all four of the response variables which include biological criteria.

5. If a waterbody does not meet one or more criteria for a use and there is very little or no activity in the watershed or apparent cause for this failure, is the water considered impaired?

Answer: Not necessarily. The current and proposed WQS allow for natural “impairments.” Subsection 301, Natural Influences, states that if a water does not meet one or more criteria due to natural influences, that water will not be considered in noncompliance with the applicable criteria. This recognizes the reality that even in the absence of human influences, variation in ambient conditions can sometimes result in exceedances of certain WQS criteria. A good example of this would be low

dissolved oxygen levels or pH levels in a stream immediately downstream of a large wetland complex. Waters of wetlands are commonly very low in oxygen and may exhibit low pH.

6. Is there more detailed information on sampling and analyzing data for sampling the aquatic biota in addition to that in Appendix G?

Answer: Yes. A more detailed description of sampling and analytical methods used in assessing the health of the aquatic biota is provided in the Department procedure document: Biocriteria for Fish and Macroinvertebrate Assemblages in Vermont Wadeable Streams and Rivers - Implementation Phase. Vermont Department of Environmental Conservation. Waterbury, Vermont, February 10, 2004. This document will be updated to be consistent with Appendix G.

7. Why were the aquatic biota and wildlife and the aquatic habitat uses separated into two uses since they are so closely related?

Answer: The Department recognizes that the biological integrity of fish and macroinvertebrate communities strongly relies on the protection and maintenance of the aquatic habitat. Because direct measures of a use provide the most accurate assessment of that use, the Department has determined that each use should be assessed using metrics that apply solely to its own attributes (e.g. species richness for biota, and stream flow requirements for habitat). Combining the disparate measures of biological integrity with physical habitat measurements into one set of use criteria (as the current Water Quality Standards do) is confusing and leads to difficulty in implementing appropriate management actions. The proposed version provides protections by stating criteria in clear unambiguous language for each use separately.

8. What factors are considered for elevating the boating use to a higher classification?

Answer: The boating use may be reclassified to a higher level based upon factors that contribute to particularized boating experiences. The best example is white water kayaking. If a river has good flows, a high number of rapids, a falls with a drop, and lengthy sections presenting challenging physical features that draw members of the public to white water kayaking, the boating use for that water could potentially be reclassified to a B(1) level based upon these natural features that enhance the boating experience. Such a reclassification would not, however, be contemplated where manipulation of flows would be necessary to maintain the particularized boating experience at the expense of the attainment of other uses at Class B(2) levels.

9. Why have the definitions for the terms “natural condition” and “reference condition” been changed?

Answer: The Department believes that the current definitions needed clarification because of the similarity of the two as presented in the present version. The “natural condition” is the standard of comparison on which many of the uses are based. This condition is represented by “reference waterbodies” which are selected because of their location in minimally disturbed watersheds. The quantifiable biotic and abiotic characteristics of reference waterbodies provide the basis for establishing numeric criteria that depict departure from the natural condition.

10. What is the reasoning behind the proposed amendments to the Antidegradation policy language?

Answer: The Agency is proposing amendments to the state Antidegradation Policy prior to undertaking development of the Antidegradation Implementation Rule. The goal is to have a Policy that can be translated into a workable and effective rule. As a brief background, federal law requires the State to adopt an antidegradation policy. The fundamental Federal intent of that policy is that waters should not be managed such that discharges result in the quality of waters being diminished until they just barely attain standards. Moreover, under the current policy, lowering of water quality is impermissible, unless not lowering that quality results in widespread social and economic impacts to citizens of the State.

Under federal law and the proposed Policy, DEC may never approve an activity that would not comply with the numeric and narrative criteria of the Vermont Water Quality Standards or that would result in an impairment of water quality. Antidegradation provides augmented protections beyond this. Specifically, the Policy states, “In all cases, the level of water quality necessary to maintain and protect all existing uses as well as applicable water quality criteria shall be maintained.” Therefore, although a “limited lowering of water quality” is permitted under the Policy after conducting a socio-economic justification, that lowering may never go so far as to impair existing or designated uses (i.e. if the uses of a water are Class A(1) the quality of the uses must remain A(1) even if a “limited lowering” is permitted).

The state policy as proposed is substantially stronger than the requirements of the federal policy. The federal policy allows for lowering water quality if “necessary to accommodate important economic or social development.” The state policy, as proposed, requires that a limited reduction only be allowed if “necessary to prevent substantial adverse economic or social impacts on the people of the State, in the area in which the waters are located” (emphasis represents a proposed addition to the existing language). The insertion of the geographic scope is intended render the policy more workable. Thru the development of the Antidegradation Rule itself, DEC

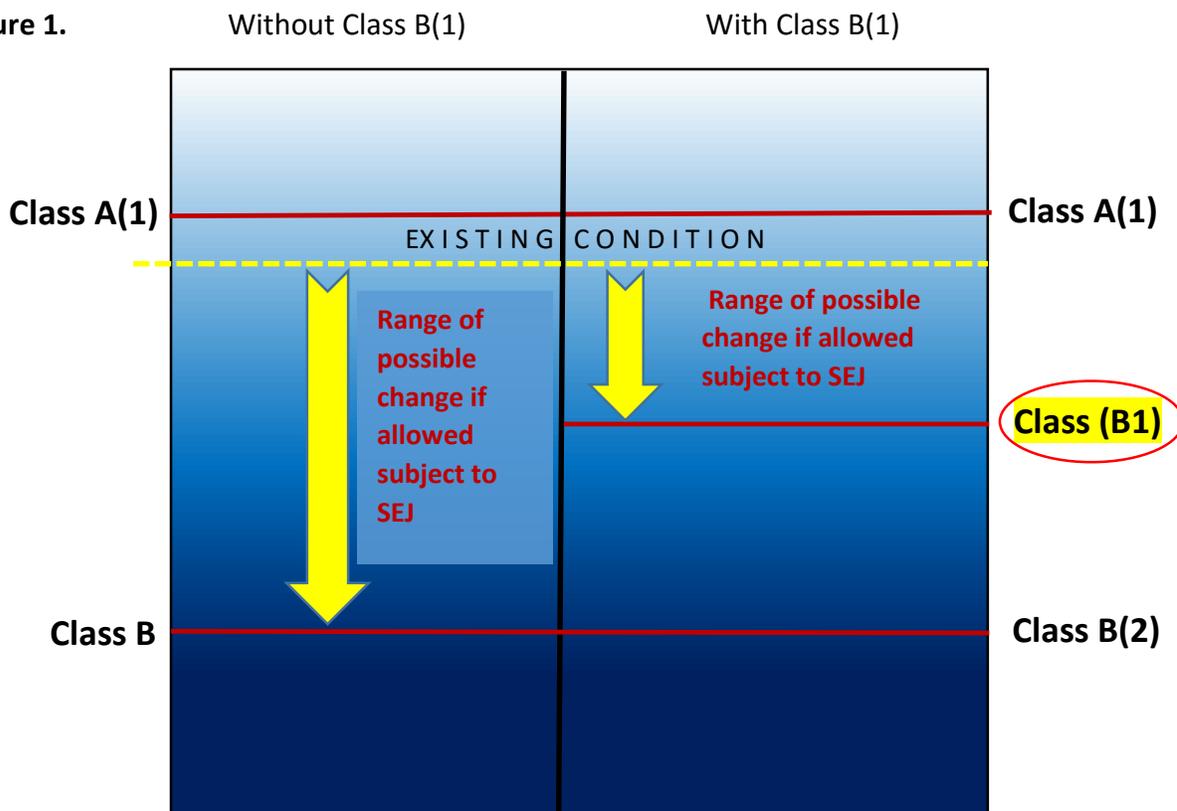
intends to define “limited reduction,” “substantial adverse economic or social impacts,” and “area in which waters are located.”

Two further additions to the Antidegradation Policy language; alternatives analysis and public notice requirements, are common-sense provisions that are part of most Vermont permitting programs already. Their insertion into the Antidegradation Policy is intended to achieve consistency with Federal requirements.

11. How does the new class of waters, (B1), affect an antidegradation review?

Answer: Under the State’s Antidegradation Policy, “[i]n all cases, the level of water quality necessary to maintain and protect all existing uses as well as applicable water quality criteria shall be maintained.” Under an antidegradation review, a limited lowering of water quality may only be allowed if the project meets the requirements of the socioeconomic justification test, however, in no case may the lowering cause an impairment. The current WQS could potentially allow a cumulative lowering of quality from the present condition to the minimum criteria for the class of water, if the socioeconomic impacts of disallowing the lowering were of such consequential magnitude. If the present condition of the water is at the higher end of Class B, the allowed lowering could be significant. Under the new classification structure in the WQS, the intermediate B(1) Class “floor”, substantially reduces the amount of lowering that could possibly be authorized. Figure 1 shows a hypothetical use condition that falls at the top of Class B range under present standards and at the top of Class B(1) under the proposed standards.

Figure 1.



12. How have the temperature criteria changed?

Answer: The changes to the temperature criteria included in the proposed standards apply only to cold water fish habitat; the warm water standards will remain the same. The current cold water standard of no more than a 1° F increase from the ambient temperature due to all discharges and activities applies to all three classes of waters. The proposed change divides cold water standards by class. The criterion will remain the same for Class B(2) cold water fisheries habitat. For waters that are classified B(1) for fishing, the 1° F increase criterion will apply to waters with a seven-day mean maximum daily temperature between June 1 and September 30 of less than 68° F. For B(1) waters over 68°, there shall be no increase in temperature due to all discharges and activities. For waters that are classified as A(1) for fishing, there shall be no increase in ambient temperature from the natural condition. The 68° F criterion was developed using a large Agency database from Vermont streams supporting wild Brook, Brown, or Rainbow trout populations.

13. Why has the concept of stream “equilibrium condition” been added to the Standards?

Answer: Equilibrium condition is a term defined in statute (10 V.S.A. § 1422(14)) and used in the definition of natural stream processes, which is proposed as a management objective

and criterion used to protect the designated aquatic habitat use, along with physical structures and flow characteristics. Natural stream processes explain the critical role of erosion, deposition, sorting, and distribution of bedload sediments and woody debris in the formation and maintenance of physical habitats. Equilibrium condition is an important governing concept in setting stream process as a criterion because it explains the extent and types of channel movement that are beneficial to aquatic habitat as compared to the vertical and lateral channel movements that may result from human activities in or near a stream.

14. Are the uses of any waters being proposed for reclassification as a part of this rulemaking, and if so, why?

Answer: In this update to the Water Quality Standards, the Department is proposing to reclassify uses of certain surface waters in the Green Mountain National Forest (GMNF) publically-owned lands to Class A(1). Specifically, the Department proposes to reclassify to Class A(1) the aquatic biota and wildlife, aquatic habitat, aesthetics, swimming, boating, and fishing uses for all surface waters in GMNF's Federally-designated Wilderness Areas, and most surface waters in GMNF National Recreation Areas. In addition, the Department is proposing reclassification of three streams that occur outside of these designated areas, in recognition that those waters have been documented within relevant Tactical Basin Plans to attain Class A(1) criteria for the aquatic biota, aquatic habitat, and in limited instances, fishing uses.

15. Why do the proposed A(1) reclassifications end at the borders of the GMNF's Wilderness, National Recreation Area, or Forest boundaries?

- Answer: In the document entitled [Proposal to reclassify certain surface waters to Class A\(1\) in areas of the Green Mountain National Forest](#), the permitting and management implications of Class A(1) designation are described. The management objectives of Class A(1) for all uses speak to managing surface waters in their natural condition, to protect the natural condition exhibited by the surface waters. Within the relevant boundaries of the GMNF, WSMD has confidence that the waters can in fact be managed to achieve that condition, since, in large part, they already are. There are certain management implications of Class A(1) designation, which are described in the Proposal, and which may not be appropriate to promulgate in areas of mixed land ownership. Therefore, the proposed reclassifications for Class A(1) waters are limited to the identified boundaries of USFS. However, in the limited instances where there are inholdings within the designated areas that are transected by surface waters proposed for A(1) designation, the reclassification is proposed for the area of inholding.*

16. Why are there so many updates to the 'Water Quality Criteria for the Protection of Human Health and Aquatic Biota' Appendix, and what is the basis for those updates?

Answer: In 2015 EPA revised 94 of the existing human health criteria to reflect the latest

scientific information, including updated exposure factors (body weight, drinking water consumption rates, fish consumption rate), bioaccumulation factors, and toxicity factors (reference dose, cancer slope factor). Under federal law, the State must incorporate these changes into its Water Quality Standards or justify to EPA why it is not incorporating them. The State is proposing to incorporate all of EPA's revisions to the human health criteria.

EPA's update of exposure factors such as body weight, drinking water, and fish consumption rates resulted in changes to criteria. EPA's default drinking water consumption rate went from 2 liters per day to 2.4 liters per day. The default fish consumption rate went from 17.5 grams per day to 22 grams per day. Changes in these factors alone led to significant revisions of the human health criteria.

17. Why have waters in the 'Water Quality Classification' and 'Fish Habitat Designation' appendices been moved and reorganized from 17 to 15 basins?

Answer: Historically, Vermont maintained a watershed basin numbering system comprised of 17 individual planning basins. During the development of the Vermont Surface Water Management Strategy and revised Tactical Basin Planning Process, these groupings were re-considered in the context of modern watershed management. While most of the 17 basins reflected true watershed boundaries or logical watershed groupings (e.g., Winooski River, or Lamoille River) others, such as Basin 4 (South Lake Champlain Small Direct Drainages), 13 (Southern CT River Small Direct Drainages), or 16 (Northern CT River Small Direct Drainages), reflected neither watershed boundaries per-se, nor logical groupings of communities that share a sense of common attachment to surface waters. These basins were awkward in terms of planning, and did not have defined constituencies. In 2011, the tactical planning process re-packaged surface waters among planning basins to recognize this issue; a change that was recognized in 10 V.S.A. § 1253(d) with passage of the Vermont Clean Water Act. The revisions to the Water Quality Classifications and Fish Habitat Designations simply reflect this change to 15 basins. The current basin map may be seen on page 14 of the Tactical Planning Guidelines:

http://dec.vermont.gov/sites/dec/files/documents/WSMD_swms_Chapter_4_Approach_to_TacticalBasinPlanning_Rev2_V5.pdf