State of Minnesota
Minnesota Pollution Control Agency
Attachment 2 to MPCA Post-Hearing Response to Public Comments
MPCA Detailed Responses to Public Comments
March 17, 2017

This document supplements information in the Statement of Need and Reasonableness (SONAR; Hearing Exhibit D) in the matter of proposed revisions of Minnesota Rules, chapters 7050 and 7052, relating to Tiered Aquatic Life Uses (TALU) and modification of Class 2 beneficial use designations.

This document contains the Minnesota Pollution Control Agency's (MPCA or Agency) detailed responses to public comments submitted during the pre-hearing comment period and during the public hearing held on February 16, 2017. The Agency thoroughly reviewed public comments, participated in the hearing, and reviewed the transcripts of the hearing. This review revealed comments on multiple topics, which are addressed in detail in this document. All comments received during the pre-hearing comment period, and the public hearing transcripts are posted in their entirety on the MPCA webpage for this rulemaking at: https://www.pca.state.mn.us/water/tiered-aquatic-life-uses-talu-framework.

The comment topics specifically addressed are:

A. Comments supporting adoption of the proposed amendments, TALU framework, or concepts underlying the TALU framework

Relates to:
Structure and language of entire rule.

Hearing Exhibit D (SONAR) discussion at:
Section 1, Introduction and statement of general need, pages 13-18;
Section 5, Reasonableness of the amendments, pages 39-51.

Summary of comments:
Multiple commenters expressed support for the proposed amendments as an improvement to the existing water quality standards framework. This includes commenters who expressed support for the whole rule and others who expressed support for the concept followed by comments regarding the implementation of the amendments. Other comments of support were focused on the use of biological tools to better monitor and assess the condition of Minnesota's streams[1]. One commenter expressed support for the removal of Class 2C. [Cannon River Watershed Partnership, Coon Creek, Minnesota Environmental Science and Economic Review Board, Browns Creek Watershed District/Carnelian-Marine-St. Croix Watershed District, WaterLegacy, Lenczewski, Red River Watershed Management Board, Callahan, B. Johnson, Markus, Arnosti]

MPCA response:
The primary goal of this rulemaking is to improve protection of Minnesota's water quality and the aquatic life (e.g., fish, insects, mussels, plants) that depend on healthy streams. This goal is consistent with the Clean Water Act's objective to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" 33 U.S.C. § 1251 (a). The TALU framework builds upon existing water quality standards with a goal of improving how water resources are monitored and managed. Because of improvements in biological, habitat, and water quality monitoring tools, amending Minnesota's water quality rules to include the TALU framework will lead to better outcomes for assessing and ensuring the protection of aquatic life, and better restoration efforts to reach water quality goals. The TALU framework is a reasonable mechanism to address issues that arise from the current "one-size-fits-all" framework for protecting aquatic life and reasonably sets standards for protecting and restoring aquatic life based on attainable biology (Hearing Exhibit D, SONAR [pp. 13-18, 39-51]).

[1] In this document and the proposed rule, the term "streams" refers to flowing or moving waters (i.e., lotic waters). These water bodies include streams, rivers, and ditches.

B. Comments related to designated use list and format

Relates to:
7050.0460, Subp. 1 (Waters specifically classified; Explanation of listings in part 7050.0470);
7050.0470, Subps. 1-9 (Classifications for surface waters in major drainage basins), and tables incorporated by reference in this section available on the MPCA website (e.g., https://www.pca.state.mn.us/sites/default/files/wq-s6-46h.pdf).

Hearing Exhibit D (SONAR) discussion at:
Section 1.B., Statement of general need, page 18;
Section 5.A.v., Updating the structure of 7050.0470, page 50;
Section 5.B., Proposed changes and specific reasonableness:
7050.0460, Subp. 1, page 60;
7050.0470, Subps. 1-9, page 61;
Appendix C, Example of 7050.0470 table for streams within a Hydrological Unit Code (HUC) 8 Watershed, pages Appendix 100-101.

Summary of comments:
Several commenters felt the lists of designated uses are not user friendly or that they could not determine which specific reaches have proposed TALU beneficial use designations. Commenters indicated that additional information should be included in the tables, including: the date the beneficial use was adopted; public land survey (PLS) sections; county; and adjacent stream reaches and tributaries. It was also suggested that having the information in 80 separate documents (i.e., one for each major watershed) makes them unsearchable and that they should all be in one text-searchable document. [Coon Creek Watershed District, WaterLegacy, Lenczewski, Red River Watershed Management Board]

MPCA response:
To enhance accessibility and respond to comments, the MPCA intends to include information suggested by the commenters either in the beneficial use tables or through an interactive map tool.

The proposed reformatting of the designated beneficial use tables does not in any way impact how water bodies are designated (Hearing Exhibit D, SONAR [p. 61]). The proposed reformatting merely creates a framework that provides more information in a more readily accessible format (Hearing Exhibit D, SONAR [p. 50]). The proposed table reformatting, while not ideal, is sufficient and it is an improvement over the current format in Minn. R. § 7050.0470 (e.g., Hearing Exhibit D, SONAR [Appendix C]). It is similar to the format used by the Ohio Environmental Protection Agency (Ohio EPA) for listing their beneficial uses (see Attachment 9).

The requested PLS information is included in the current Minn. R. § 7050.0470, but only for the small fraction of Minnesota stream reaches that are listed in rule. The majority of stream reaches (>10,000) are not currently listed in Minn. R. § 7050.0470 and the PLS information has not been compiled for each of these reaches which is why the MPCA did not include PLS information in the proposed reformatted tables. To make the reformatted tables more comprehensive and include all stream WIDs, it was not technically feasible at the time of the rulemaking to include the PLS information and ensure its accuracy. However, the MPCA intends to include the PLS information in revisions to the tables or through a map-based tool. The

revisions to include the PLS information are estimated to be made within the next year or two depending on the technical difficulty and how difficult it is to ensure this information is accurate.

The tables are proposed to be incorporated by reference as permitted by Minn. Stat. § 14.07, subd. 4. The term in the proposed rule stating the reference tables are "not subject to frequent change," means the tables may be changed no more than once per year according to the Minnesota Revisor of Statutes. Any changes to a document that is incorporated by reference must be available to the public in the same manner as the original document. MPCA will note any changes to the tables at the same website location as the original tables.

In addition, the MPCA recognizes that information is most often and effectively accessed using interactive tools. Therefore, the MPCA intends to develop a searchable map-based interface tool that can be used to access the information contained in the rule. This tool will make the tables text-searchable and display adjacent stream reaches and tributaries as requested by commenters.

It should be noted that the proposed designated beneficial use lists are an improvement over the existing list of streams in Minn. R. § 7050.0470 for a number of reasons (Hearing Exhibit D, SONAR [pp. 18, 50]):

1) They align the list to the existing water body cataloging system used by most programs at the MPCA involved with protecting and restoring designated beneficial uses. This system assigns a number (Waterbody ID or WID; also called an Assessment Unit ID or AUID) to discrete stream reaches which are used to structure the use designations. By providing use designation information catalogued by WID number in Minn. R. § 7050.0470, users can identify designated uses that are relevant to MPCA activities. Currently, Minn. R. § 7050.0470 does not provide WID information and in many cases streams listed in Minn. R. § 7050.0470 consist of multiple WIDs.
2) The revised tables provide more information. These enhancements include:
    a. WID number: as discussed above.
    b. Information regarding whether or not the use is default or confirmed: The information in Column 4 of the designated use tables contains this information (e.g., Hearing Exhibit D, SONAR [Appendix C]). It permits not only the documentation of Classes 1, 2A, 2Bd, and 7, it also documents the confirmation of General Use waters (Class 2B). In doing so this documents that a stream reach has been reviewed and thereby identifies the existing use. This is important for tracking existing use to ensure that a use is not downgraded.
    c. All stream WIDs are included in the new tables. Currently only a small subset of the stream reaches in the state are included in Minn. R. § 7050.0470 (e.g., Classes 1, 2A, and 7). The vast majority of streams are designated by default as Class 2B (see Minn. R. § 7050.0430) and are not included in this table.
3) The new format is more easily updated. Although any change to designated beneficial uses require a formal rulemaking regardless of the format of the use list (Hearing Exhibit D, SONAR [p. 18]), the updated list format can be updated more easily following rulemaking. The current process for tracking and making changes to the list in Minn. R. § 7050.0470 is cumbersome and requires considerable staff time both from the MPCA and the Revisor's office. The new format does not change the public participation requirements for making a use designation, but facilitates the logistics of documenting that change in rule.

C. Comments related to the documentation of the science supporting the proposed amendments

Relates to:
Science supporting the structure and language of entire rule

Hearing Exhibit D (SONAR) discussion at:
Section 2.D.ii., Minnesota's readiness for TALU, page 23
Section 5.A., General reasonableness of the amendments, pages 39-48;
Section 5.E., Minn. Stat. § 115.035, item (a), external peer review of water quality standards, pages 73-74;
Other relevant documents: Exhibits S-63, S-64, S-65, S-66, S-84, S-85, and S-86; Hearing Exhibits L.6, L.7, and L.8; Attachments 3, 4, and 5.

Summary of comments:
The MPCA received several comments related to the sufficiency and documentation of the science undertaken to support the proposed amendments. These comments ranged from general to the specific. One commenter questioned the data presented in the administrative record and the data analysis performed by the Agency in development of the TALU framework as generally insufficient based on the example of a low R^2 value. [Minnesota Environmental Science and Economic Review Board] Other commenters asked the MPCA to address year-to-year variability in the Index of Biological Integrity (IBI) scores, and stated that the IBI calculation mechanism needs to be available for public review and comment [US Steel, Minnesota Chamber of Commerce]. Finally, one commenter stated that they felt peer review of the science supporting the rule was not sufficient [Minnesota Environmental Science and Economic Review Board]

MPCA response:
The scientific supporting documentation for the TALU rule amendments is extensive and sufficient. The extensiveness of the documentation was necessary because it is important to the MPCA that the Agency provide thorough documentation of the science and to make transparent what science was relied upon by the Agency. A commenter extracted a small part of the science supporting the rule as evidence that the data and analyses are not sufficient. This takes the science out of context and is misleading. The science supporting the TALU rule amendment is constructed of many elements and the analysis noted by the commenter is only one part of the foundation of the science. The commenter noted that the R^2 for one of these analyses was low (note: the R^2 is a statistical measure that indicates how much of the variance in the dependent variable can be explained by the independent variable; in the example provided by the commenter the IBI scores are the dependent variable and the habitat score [i.e., MSHA] is the independent variable). The purpose of the R^2 analysis was not to develop a predictive model, but rather as an exploratory exercise to identify relationships between biological scores from different stream types and habitat scores. The habitat models that are actually used as part of the Use Attainability Analyses (UAA) are several steps removed from this preliminary analysis and are described in more detail in Exhibits S-66 and S-63.

In general, the use of biological data has the advantage of providing an integrated assessment of stressors over time due to the fact that many of these organisms are relatively long lived (Hearing Exhibit D, SONAR [p. 40]). However, there is still variability in these assemblages that needs to be understood. As part of Minnesota's biological monitoring framework, the Agency estimates the variability in sampling. Therefore, it is possible to determine IBI score variability associated with sampling the same sites across years (i.e., year-to-year variability). This is estimated by calculating 90% confidence limits for IBI scores using the residual

error term from an analysis of variance (ANOVA) (Exhibit S-85). The datasets used to estimate confidence limits included replicate samples collected from sites across years (including 1210 macroinvertebrate sample and 1531 fish samples). This variability is 4 points for macroinvertebrates and 3 points for fish samples. This variability is manageable and can be used as part of assessments and UAAs when scores are near thresholds. It should be noted that these values likely overestimate the variability that can be assigned to annual differences alone because it includes samples that were collected more than 10 years apart and because variability that is the result of changes caused by anthropogenic stressors (i.e., the changes in biological communities that the IBIs are designed to detect) cannot be partitioned out.

The documentation for the IBIs has been available on the MPCA's website for this rulemaking for public review for approximately 3 years. This was sufficient time for those interested in these tools to review them and provide feedback. As part of TALU outreach with Barr Engineering (August 2016), the Agency was asked to provide additional details on the mechanisms behind calculating the IBI model scores. The Agency indicated that it would compile this information and the information was made available publically on January 26, 2017 (macroinvertebrate IBIs; Hearing Exhibit L.7) and February 8, 2017 (fish IBIs; Hearing Exhibit L.8). These documents were also introduced as exhibits during the hearing on February 16, 2017. The information contained in these documents is largely contained within Exhibits S-64 and S-65 or was made available through correspondence with Barr Engineering staff. Although the Agency does not view these new documents as necessary for reviewing the merit of TALU rule amendments, the Agency has provided sufficient time for stakeholders to review the small amount of additional information in these new documents. In addition, the Agency has provided documents that further clarify methods by incorporating several existing protocols into two documents (Attachments 3 and 4).

The MPCA disagrees that the science used to support the TALU rule amendments was not sufficiently peer reviewed. Furthermore the Agency fully complied with Minn. Stat. § 115.035, which, in instances where the MPCA Commissioner does not convene an external peer review panel during the amendment of water quality standards, requires the MPCA Commissioner to state in the SONAR the reason an external peer review panel was not convened. Hearing Exhibit D (SONAR) includes this statement on pages 73-74. In addition, the following supplemental information on peer review during the development of the rule is provided in support of the Commissioner's decision.

The development of the technical tools supporting the proposed rule amendments span nearly a decade. These technical tools have undergone peer review both through formal independent peer reviews and through implementation of many of these tools. The development of the technical tools followed peer-reviewed scientific methods. For example, the IBIs were developed following the methods described in Exhibit S-86. For research that advanced the science of biological monitoring and assessment, the MPCA underwent a formal, external review to ensure that the science behind this research was sound. This includes the development of the biological criteria (Exhibit S-85) and the Biological Condition Gradient (BCG) models that underlie the biological criteria. The independent peer-review of the BCG models has also been completed and the resulting article is being readied for publication. The scientific journal publishing this article has approved the inclusion of a pre-publication version of the article as Attachment 5 to the MPCA's post-hearing response to comments (Gerritsen, et al, Calibration of the biological condition gradient in Minnesota streams: a quantitative expert-based decision system, Freshwater Science, February 6, 2017 [pre-publication version]). In addition, the research is fully documented in Gerritsen et al. (2013), which is Hearing Exhibit L.6.

In addition to formal peer review, the IBIs, biological criteria, and BCG models have been in use by the MPCA for more than 4 years for assessing Class 2A, 2Bd, 2B, and 2C waters (equivalent to the proposed General Use). They are used as numeric translators for narrative standards (Hearing Exhibit D, SONAR [pp. 41, 44]; Minn. R. § 7050.0150, Subp. 6) and are an update to the tools used in biological assessment extending back to 2002 (Hearing Exhibit D, SONAR [p. 23]). It is important to note here is that the proposed TALU rule amendments do not implement a new or wholly untested framework, as they are a refinement to the existing framework. As a result, stakeholders have seen these tools or earlier version of these tools since 2002.

The MPCA also received comments regarding the difficulty of accessing a peer-reviewed article published in an international journal. It is not always possible to get Open Access for copyrighted peer-reviewed articles. The MPCA cannot "republish" these articles on the Agency website unless permission has been purchased from the copyright holder. However, these articles are available for purchase online or they can be accessed through some libraries. In addition, the MPCA ensured that this research is readily available so the material in the peer-reviewed article (Exhibit S-85) is also available in a MPCA report (Exhibit S-84). The peer review did not change the substance of the research because the independent reviewers were supportive of the approach. Therefore, stakeholders interested understanding and reviewing the technical basis for the biological criteria and the tiered use goals can review Exhibit S-84.

D. Comments suggesting clarifications to proposed rule language

Relates to:
7050.0150, Subp. 4 (Definitions);
7050.0220, Subp. 1 (Purpose and scope);
7050.0220, Subp. 3a (Cold water sport fish, drinking water, and associated use classes);
7050.0220, Subp. 4a (Cool and warm water sport fish, drinking water, and associated use classes);
7050.0220, Subp. 5a (Cool and warm water sport fish and associated use classes);
7050.0222, Subp. 2c (Beneficial use definitions for cold water stream and river habitats (Class 2A));
7050.0222, Subp. 2d (Biological criteria for cold water stream and river habitats (Class 2A));
7050.0222, Subp. 3c (Beneficial use definitions for warm or cool water stream and river habitats (Class 2Bd));
7050.0222, Subp. 3d (Biological criteria for warm or cool water stream and river habitats (Class 2Bd));
7050.0222, Subp. 4c (Beneficial use definitions for warm or cool water stream and river habitats (Class 2B));
7050.0222, Subp. 4d (Biological criteria for warm or cool water stream and river habitats (Class 2B));
7050.0430 (Unlisted waters);
7050.0470, Subps. 1 -9 (Beneficial use tables by major basin).

Hearing Exhibit D (SONAR) discussion at:
Section 1.A., Summary of proposed amendments, pages 14-15;
Section 1.B., Statement of general need, pages 16-18;
Section 2.D.v., Implementation of TALU, pages 28-31;
Section 5.A.i., Incorporating numeric biological criteria directly into rule, page 41 (footnote 19);
Section 5.A.iii., Setting goals for streams affected by human-induced legacy habitat alterations, pages 46-48;
Section 5.A.iv., Removing Class 2C, pages 48-50;
Section 5.A.vi., Designating more accurate aquatic life uses for selected streams, page 51;

Section 5.B., Proposed changes and specific reasonableness:
7050.0150, Subp. 4(C), page 53;
7050.0220, Subps. 1, 3a, 4a, 5a, page 57;
7050.0222, Subps. 2c, 3c, and 4c, page 59;
7050.0430, page 60;
7050.0470, Subps. 1-9, page 61;
Section 6.A.ii., The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rules and any anticipated effect on state revenues, page p. 64;
Section 6.C.,Minn. Stat. 14.127, subds. 1 and 2, Cost of complying for small business or city, pages 72-73;
Section 6.F.i., Equity analysis, page 78;
Section 8., Consideration of economic factors, page 83;
Section 8.B.ii., Permitted dischargers, pages 85-86.

Summary of comments:
Several commenters requested specific clarifying changes to the proposed rule. Most of these comments did not criticize the intent of the proposed rule language, but rather sought clarification and shoring up of the rule amendments to ensure that the intended language was not ambiguous. In most instances, the MPCA found the comments constructive and the MPCA proposes modifications to the rule as proposed to address these comments. In some cases, however, the MPCA determined that revisions to the proposed rule language is not needed, and the Agency provides its reasoning below.

Specific comments and MPCA responses:

Guide to tracking modifications to the proposed rule language as published in the State Register on December 19, 2016: The black text, including black underlines and black strikethrough font, shows the applicable rule provisions as published. The red text, including red underlines and red strikethrough font, shows the MPCA's proposed modifications to those provisions. Red text with no underlined font is text that the MPCA, in the rule amendments as published, initially proposed to remove from existing rule provisions but has since decided to retain. Red underlined font shows new text the MPCA is proposing to adopt that was not in the rule amendments as published. Red strikethrough font shows newly-proposed text in the rule amendments as published that the MPCA now proposes to remove.

1. **7050.0150, Subp. 4; 7050.0222, Subp. 2c, Subp. 2d, Subp. 3c, Subp. 3d, Subp. 4c, and Subp. 4d (HEADINGS); and other locations where the term lotic is appropriately added**

   Comment: Two commenters requested that the MPCA clarify in rule that the TALU framework applies to only streams and other flowing waters. It is unclear if the TALU framework applies to wetlands. [Minnesota Department of Transportation, Minnesota Chamber of Commerce]

   MPCA response: The Agency proposes the following modifications to the proposed rule language to clarify that the original intent of the rule is that the TALU framework is applicable only to lotic/flowing waters.

Proposed modifications:

7050.0150, Subp. 4.
S. "Lotic water" means a flowing or moving water body such as a stream, river, or ditch.

7050.0222, Subp. 2c (HEADING)
Subp. 2c. **Beneficial use definitions for lotic cold water aquatic life and ~~stream and river~~ habitat~~s~~ (Class 2A).**

7050.0222, Subp. 2d (HEADING)
Subp. 2d. **Biological criteria for lotic cold water aquatic life and ~~stream and river~~ habitat~~s~~ (Class 2A).**

7050.0222, Subp. 3c (HEADING)
Subp. 3c. **Beneficial use definitions for lotic warm or cool water aquatic life and ~~stream and river~~ habitat~~s~~ (Class 2Bd).**

7050.0222, Subp. 3d (HEADING)
Subp. 3d. **Biological criteria for lotic warm or cool water aquatic life and ~~stream and river~~ habitat~~s~~ (Class 2Bd).**

7050.0222, Subp. 4c (HEADING)
Subp. 4c. **Beneficial use definitions for lotic warm or cool water aquatic life and ~~stream and river~~ habitat~~s~~ (Class 2B).**

7050.0222, Subp. 4d. (HEADING)
Subp. 4d. **Biological criteria for lotic warm or cool water aquatic life and ~~stream and river~~ habitat~~s~~ (Class 2B).**

In addition, the term "lotic" is added as appropriate in modified sections discussed below. These are modified sections: Minn. R. § 7050.0222 Subp. 2c, Subp. 3c, and Subp. 4c; and Minn. R. § 7050.0430.

2. 7050.0222 Subps. 3c.D.(1) and 4c.D.(1)

Comment: One commenter asked the MPCA to define or clarify the intended use of the terms "incapable" and "maintaining" as used in the phrase " incapable of supporting and maintaining the … beneficial use," and use of the word "potential" in proposed Minn. R. § 7050.0222, Subp. 3c.D.(1) and 4c.D.(1). [Coon Creek Watershed District]

MPCA response: The MPCA proposes the following modifications to the rule amendments as published in order to more clearly convey the purpose of the provision. The modifications are

reasonable because they more closely follow phrases in the Clean Water Act (CWA) (40 CFR § 131.10 (g)[2]) and clarify the original intent of the provision to remove ambiguity.

The word "incapable" is reasonably replaced by the term "not feasible" in the phrase "where it is determined that attainment of the beneficial use is not feasible…" because the term "not feasible" is used in the CWA (40 CFR § 131.10 (g)) in this context.

The use of the word "maintaining" is confusing because of the different meaning given that word in Minnesota drainage law (i.e., maintaining the capacity of a drainage ditch) versus the intent of the word in the TALU rule amendments (i.e., maintaining a beneficial use), so the word "maintaining" is removed. The concept of maintaining the beneficial use is captured in the phrase "where it is determined that attainment …"

The phrase "that preclude the potential for recovery of the fauna" refers to the feasibly attained use of a waterbody as determined through a UAA, so it is replaced by the term "attainment of the … beneficial use is not feasible…" where the concept "preclude the potential for the recovery of the fauna" is conveyed through the phrase "attainment of the … beneficial use is not feasible." "Recovery of the fauna" is one way of indicating attainment of the beneficial use.

Proposed modifications:

7050.0222, Subp. 3c., Item D
(1) To meet the definition in this item, waters must have been the subject of a use attainability analysis where it is determined that attainment of ~~and must have been found to be incapable of supporting and maintaining~~ the Class 2Bdg beneficial use is not feasible because of human-induced modifications of the physical habitat ~~that preclude the potential for recovery of the fauna~~. These modifications must be the result of direct alteration to the channel, such as drainageway maintenance, bank stabilization, and impoundments.

7050.0222, Subp. 4c., Item D
(1) To meet the definition in this item, waters must have been the subject of a use attainability analysis where it is determined that attainment of ~~and must have been found to be incapable of supporting and maintaining~~ the Class 2Bg beneficial use is not feasible because of human-induced modifications of the physical habitat ~~that preclude the potential for recovery of the fauna~~. These modifications must be the result of direct alteration to the channel, such as drainageway maintenance, bank stabilization, and impoundments.

3. **7050.0220, Subp. 1.; 7050.0220, Subp. 3a, Subp. 4a, and Subp. 5a; and 7050.0222, Subp. 2c, Subp. 3c, and Subp. 4c:**

Comment: Two commenters asked whether the standards that apply to 2A, 2Bd, and 2B also apply to Classes 2Ae, 2Ag, 2Bde, etc. [WaterLegacy, Minnesota Department of Transportation]

[2] "States may remove a designated use which is not an existing use, as defined in § 131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible…" (40 CFR § 131.10 (g))

MPCA response: All water quality standards that apply to Classes 2A, 2Bd, and 2B would also apply to Classes 2Ae, 2Ag, 2Bde, 2Bdg, 2Bdm, 2Be, 2Bg, and 2Bm with the only addition being an indication that the biological criteria for different TALUs also apply. The MPCA proposes the following modifications to the rule amendments as published. The modifications are reasonable because they more clearly convey this concept and remove ambiguity.

Proposed modifications:

7050.0220, Subpart 1.

A. cold water ~~sport fish (trout waters)~~ aquatic life and habitat, also protected for drinking water: Classes 1B~~,~~; 2A,~~;~~ 2Ae or 2Ag; 3A or 3B~~,~~; 4A and 4B~~,~~; and 5 (subpart 3a);

B. cool and warm water ~~sport fish~~ aquatic life and habitat, also protected for drinking water: Classes 1B or 1C~~,~~; 2Bd,~~;~~ 2Bde, 2Bdg, or 2Bdm; 3A or 3B~~,~~; 4A and 4B~~,~~; and 5 (subpart 4a);

C. cool and warm water ~~sport fish, indigenous aquatic life, and wetlands~~ aquatic life and habitat and wetlands: Classes 2B, ~~2C,~~ 2Be, 2Bg, 2Bm, or 2D; 3A, 3B, 3C, or 3D; 4A and 4B or 4C; and 5 (subpart 5a); and

7050.0220, Subp. 3a.

Subp. 3a. **Cold water ~~sport fish~~ aquatic life and habitat, drinking water, and associated use classes.** Water quality standards applicable to use Classes 1B, 2A,~~;~~ 2Ae or 2Ag; 3A or 3b~~,~~; 4A and 4B~~,~~; and 5 surface waters. The water quality standards in 7050.0222, subpart 2, that apply to Class 2A also apply to Classes 2Ae and 2Ag. In addition to the water quality standards in 7050.0222, subpart 2, the biological criteria defined in 7050.0222, subpart 2d, apply to Classes 2Ae and 2Ag.

7050.0220, Subp. 4a.

Subp. 4a. **Cool and warm water ~~sport fish~~ aquatic life and habitat, drinking water, and associated use classes.** Water quality standards applicable to use Classes 1B or 1C~~,~~; 2Bd,~~;~~ 2Bde, 2Bdg, or 2Bdm; 3A or 3B~~,~~; 4A and 4B~~,~~; and 5 surface waters. The water quality standards in 7050.0222, subpart 3, that apply to Class 2Bd also apply to Classes 2Bde, 2Bdg, and 2Bdm. In addition to the water quality standards in 7050.0222, subpart 3, the biological criteria defined in 7050.0222, subpart 3d, apply to Classes 2Bde, 2Bdg, and 2Bdm.

7050.0220, Subp. 5a.

Subp. 5a. **Cool and warm water ~~sport fish~~ aquatic life and habitat and associated use classes.** Water quality standards applicable to use Classes 2B, 2Be, 2Bg, 2Bm, ~~2C,~~ or 2D; 3A, 3B, or 3C; 4A and 4B; and 5 surface waters. See parts 7050.0223, subpart 5; 7050.0224, subpart 4; and 7050.0225, subpart 2, for Class 3D, 4C, and 5 standards applicable to wetlands, respectively. The water quality standards in 7050.0222, subpart 4, that apply to Class 2B also apply to Classes 2Be, 2Bg, and 2Bm. In addition to the water quality standards in 7050.0222, subpart 4, the biological criteria defined in 7050.0222, subpart 4d, apply to Classes 2Be, 2Bg, and 2Bm.

7050.0222, Subp. 2c., Item A

A. Subitems (1) to ~~(4)~~(5) apply to the beneficial uses in items B and C:
(5) The beneficial use subclass designators "e" and "g" are added to the Class 2A designator as specific additional designators. The additional subclass designators do not replace the Class 2A

designator. All requirements for Class 2A cold water stream and river habitats in 7050.0222 and 7052.0100 continue to apply in addition to requirements for Class 2Ae or Class 2Ag cold water stream and river habitats in 7050.0222. These subclass designators are only applied to lotic waters.

7050.0222, Subp. 3c., Item A
A. Subitems (1) to ~~(4)~~(5) apply to the beneficial uses in items B to D:
(5) The beneficial use subclass designators "e," "g," and "m" are added to the Class 2Bd designator as specific additional designators. The additional subclass designators do not replace the Class 2Bd designator. All requirements for Class 2Bd warm or cool water stream and river habitats in 7050.0222 and 7052.0100 continue to apply in addition to requirements for Class 2Bde, Class 2Bdg, or Class 2Bdm warm or cool water stream and river habitats in 7050.0222. These subclass designators are only applied to lotic waters.

7050.0222, Subp. 4c., Item A.
A. Subitems (1) to ~~(4)~~(5) apply to the beneficial uses in items B to D:
(5) The beneficial use subclass designators "e," "g," and "m" are added to the Class 2B designator as specific additional designators. The additional subclass designators do not replace the Class 2B designator. All requirements for Class 2B warm or cool water stream and river habitats in 7050.0222 and 7052.0100 continue to apply in addition to requirements for Class 2Be, Class 2Bg, or Class 2Bm warm or cool water stream and river habitats in 7050.0222. These subclass designators are only applied to lotic waters.

4. 7050.0430

Comment: One commenter asserted that water quality standards would cease to apply to waters designated as Class 2C in Minn. R. § 7050.0470 when the Class 2C is eliminated. [WaterLegacy]

MPCA response: As described in Hearing Exhibit D (SONAR) on pages 48-50 and Appendix A, each water body currently classified as Class 2C will fall into one of two categories once the TALU rule amendment is adopted; Class 2Bm or default Class 2Bg. A total of 7 Class 2C waters are proposed to be reclassified as Class 2Bm as part of this rule amendment, as listed in Appendix A of Hearing Exhibit D (SONAR). The remaining Class 2C waters will be designated as default Class 2Bg as specified in proposed rule amendment Minn. R. § 7050.0430. The MPCA proposes the following modifications to the rule amendments as published. The modifications are reasonable because they implement the intent to continue to apply water quality standards to all Class 2C waters and remove ambiguity. These modifications are also reasonable because they address the comment in comment 3 above.

Proposed modification:

7050.0430 UNLISTED WATERS.
Subpart 1. Statewide surface waters. Except as provided in subparts 2 and 3, all surface waters of the state that are not listed in part 7050.0470 and that are not wetlands as defined in part 7050.0186, subpart 1a, are hereby classified as Class 2B~~2Bg~~, 3C, 4A, 4B, 5, and 6 waters. Unlisted lotic waters are also assigned the beneficial use subclass designator "g" to the Class 2B designator.

5. 7050.0150, Subp. 4(C) – Definition of aquatic biota

Comment: One commenter suggested that consumption of aquatic biota should be included in the new definition of "aquatic biota." [WaterLegacy]

MPCA response: Protecting fish and other edible aquatic life for consumption by people or wildlife is an important and long-standing foundation of the Class 2 water quality standards. Comprehensive methods and numeric standards have been in place for the objective of protecting fish and aquatic life for consumption by people and wildlife since 1990. The consumption of aquatic life is a use specified in section 101(a)(2) of the CWA based on the CWA section 303(c)(2)(A) requirement that water quality standard (WQS) protect public health. As such, the Environmental Protection Agency (EPA) interprets the uses under section101(a)(2) of the Act to mean that not only can fish and shellfish thrive in a water body, but when caught, they can also be safely eaten by humans (see Minn. R. § 7050.0140, Subp. 3). The addition of the term "aquatic biota" in the proposed rule is meant to consolidate and clarify different terminology used in the rule that relate to the depth and breadth of many types of living organisms that need protection from adverse effects under our water quality standards and has no bearing on the many aspects of the narrative standards that address consumption of aquatic life (Minn. R. § 7050.0150, Subp. 7, Minn. R. § 7050.0217 to Minn. R. § 7050.0220, Minn. R. § 7050.0222). The narrative standards in the rule related to aquatic life consumption for humans and wildlife are maintained and would not benefit by stating "aquatic life" has the same definition as "aquatic biota." Based on the use of "aquatic life" in Minn. R. § 7050.0140, Subp. 3, it has an overarching definition consistent with MPCA and EPA expectations that include consumption of fish and other edible aquatic organisms and protection of the aquatic biota itself.

The objectives to protect consumption of aquatic biota by humans and wildlife is addressed in Minn. R. § 7050.0217. While the CWA and Minnesota rule include both the protection of aquatic consumption and the protection of aquatic biota, they are not the same. One protects the health of humans who consume fish and other edible aquatic life and the consumption of aquatic organisms by wildlife. The other protects the aquatic plants and animals in and of themselves. The chemical standards for the protection of consumption of aquatic biota by humans and wildlife are in Minn. R. § 7050.0222. The proposed biological water quality standards are reasonable because they do not replace the chemical standards that protect consumption of aquatic biota by humans and wildlife.

E. Comments related to adoption of documents by reference

Relates to:
7050.0150, Subp. 3a (Assessment criteria);
7050.0222, Subp. 2c (Beneficial use definitions for cold water stream and river habitats (Class 2A));
7050.0222, Subp. 3c (Beneficial use definitions warm or cool water stream and river habitats (Class 2Bd));
7050.0222, Subp. 4c (Beneficial use definitions warm or cool water stream and river habitats (Class 2B));
7050.0460 (Waters specifically classified; explanation of listings in part 7050.0470);
7050.0470, Subps. 1 -9 (Beneficial use tables by major basin).

Hearing Exhibit D (SONAR) discussion at:
Section 1.A., Summary of proposed amendments, page 15;
Section 1.B., Statement of general need, pages 17-18;
Section 2.D.v., Implementation of TALU, page 29;
Section 5.A.iv., Removing Class 2C, pages 48;
Section 5.A.v, Updating the structure of 7050.0470, page 50;
Section 5.A.vi., Designating more accurate aquatic life uses for selected streams, page 51;
Section 5. B., Proposed changes and specific reasonableness:
7050.0150, Subp. 3a, page 53;
7050.0222, Subps. 2c, 3c, and 4c, page 59;
7050.0460, Subp. 1, page 60;
7050.0470, Subps. 1-9, page 61;
Section 6.A.ii., The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rules and any anticipated effect on state revenues, page 64;
Section 6.C., Minn. Stat. 14.127, subds. 1 and 2, Cost of complying for small business or city, pages 72-73;
Section 8., Consideration of economic factors, page 83;
Section 8.B.ii., Permitted dischargers, pages 85-86;
Appendix C, Example of 7050.0470 table for streams within a Hydrological Unit Code (HUC) 8 Watershed, pages Appendix 100-101;
Other relevant documents: Exhibit S-7.

Summary of comments: Several commenters were concerned that the adoption of documents (i.e., assessment guidance manual, BCG and IBI background documents, and the designation of beneficial use tables) by reference gives the MPCA an ability to change rules without going through rule making, or to change documents too frequently. One commenter requested clarification for the term "frequent" in the proposed rule language "…are incorporated by reference and are not subject to frequent change." [Coon Creek Watershed District, WaterLegacy, Markus, Neprash, M. Johnson]

MPCA response:
Minn. Stat. § 14.07 subd. 4(a) provides for the incorporation of documents by reference into rule: "*An agency may incorporate by reference into its rules the text from Minnesota Statutes, Minnesota Rules, United States Statutes at Large, United States Code, Laws of Minnesota, Code of Federal Regulations, the Federal Register, and other publications and documents which are determined by the revisor of statutes, to be conveniently available to the public.*" There are many precedents within MPCA rules and other rules for incorporating documents by reference (see Minn. R. § 7050.0150, Subp., 4 Item BB (River nutrient region); Minn. R. 7052.0110, Subp. 3 (Bioaccumulation factors)).

Regarding the adoption of the assessment guidance manual by reference in proposed section Minn. R. § 7050.0150, Subp. 3a, the MPCA's intent for adding this reference into rule was to improve clarity and convenience in regards to how beneficial uses are assessed. The MPCA was not proposing to change the public process by which the Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: CWA §305(b) Report and CWA § 303(d) List is revised. The document is revised once every two years as part of the impaired waters listing process. As part of the impaired waters listing process, the assessment guidance manual is published for review and comment with a formal public notice. The intent was not to adopt these methods into rule or to change the process by which the documents are modified. As a result, the Agency will modify the proposed rule to eliminate this reference.

> **7050.0150, Subp. 3a.**
> ~~Subp. 3a. **Assessment criteria.** The criteria by which water bodies are assessed to determine if beneficial uses are supported, and definitions of the data and information required for that assessment, is in Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List (2014 and as subsequently amended), which is incorporated by reference. The guidance manual is not subject to frequent change and is available at http://www .pca.state.mn.us/lupg1125~~

Regarding the guidance documents in proposed sections Minn. R. § 7050.0222, Subps. 2c, 3c, and 4c, they are proposed for incorporation by reference due to their size which makes incorporation of their text into rule infeasible. The assessment criteria are made conveniently available to the public on the MPCA's website.

Regarding the proposed beneficial use tables described in proposed sections Minn. R. § 7050.0460 and Minn. R. § 7050.0470, Subps. 1-9, they are proposed for incorporation by reference in order to improve comprehensiveness and accessibility. See item 0 of this document for further discussion.

All of the documents that the Agency is proposing to include in the rule by reference are currently in use. Incorporating them by reference will make them more accessible and actually less subject to change.

The phrase "not subject to frequent change" can be confusing, however, it is standard wording required by statute: "…must state whether the material is subject to frequent change;" Minn. Stat. 14.07, Subd. 4(a). The Minnesota Revisor of Statutes interprets "…not subject to frequent change" to mean less than once a year. The TALU proposed rule language was reviewed and approved by the Revisor. Any changes to a document that is incorporated by reference must be available to the public in the same manner as the original document. MPCA will note any changes to the documents at the same website location as the original documents.

The process followed to make changes to documents incorporated by reference are specific to the document. As part of the TALU rule amendments, MPCA can group these into two types: 1) documents describing scientific methodologies/protocols; and 2) lists of beneficial use designations in Minn. R. § 7050.0470.

In the case of the documents describing scientific methodologies/protocols in proposed section Minn. R. § 7050.0222, Subps. 2c., 3c, and 4c, these can be updated without following the Minnesota Administrative Procedures Act (APA) although depending on the document some form of public participation is involved. These include the documents that describe the biological sampling methods (Attachments 3 and 4), the biological criteria (Exhibit S-84), and biological condition gradient (Hearing Exhibit L.6). These documents are inherently tied to the proposed TALU biological criteria. As such, materially changing the methods or models described by these documents would alter the biological criteria. Since the biological criteria cannot be changed without a formal rulemaking process following the APA, materially changing these documents is not possible without this formal process. However, more minor changes could be made to these documents. For example, if a stakeholder asks for language which clarifies the methods in these documents then the MPCA could update these documents without a formal rulemaking, but not more than once a year.

For the proposed lists which document the beneficial use designations for streams and rivers in proposed section Minn. R. § 7050.0470, these could not be changed without following the APA. This is described or noted in numerous locations in Hearing Exhibit D (SONAR) (see Hearing Exhibit D, SONAR [p. 15, pp. 17-18, p. 29, p. 48, p. 51, p. 61, p. 64, pp. 72-73, p. 83, pp.85-86]). The MPCA is not proposing to change the process by which designated uses are changed, only how they are listed in rule. Changes to designated uses, including TALUs and beneficial use classes (e.g., Classes 1, 2, 3, etc.), will require the same formal rulemaking process that is currently required. Therefore, reformatting the beneficial use list in these documents do not change the process by which beneficial uses are designated. They simply alter the formatting to include more information and make the actual updating of these lists logistically simpler. The beneficial use tables provided do in fact reflect the current rule because the agency has not yet adopted the TALU framework or any specific TALUs. Changes to these tables require rulemaking. Following adoption of the TALU rule amendments, the 141 stream WIDs that are proposed for designation will be updated in these tables.

F. Comments related generally to UAA implementation

Relates to:

7050.0222, Subp. 2c (Beneficial use definitions for cold water stream and river habitats (Class 2A));
7050.0222, Subp. 3c (Beneficial use definitions for warm or cool water stream and river habitats (Class 2Bd));
7050.0222, Subp. 4c (Beneficial use definitions for warm or cool water stream and river habitats (Class 2B)).

Hearing Exhibit D (SONAR) discussion at:

Section 2. D. v., Implementation of TALU, pages 28-31;
Section 5.A.vi., Designating more accurate aquatic life uses for selected streams, page 51;
Section 5. B., Proposed changes and specific reasonableness:
7050.0222, Subps. 2c, 3c, and 4c, page 59;
Section 6.A.i, Description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule, pages 62-63;
Section 6.A.ii, The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rules and any anticipated effect on state revenues, pages 63-64;

Section 6.A.vi, The probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals, page 66;
Section 6.C., Minn. Stat. 14.127, subds. 1 and 2, Cost of complying for small business or city, pages 71-73;
Section 8, Consideration of economic factors, pages 82-90;
Other relevant documents: Exhibit S-63.

Summary of comments:
Several comments were related to UAA implementation. Several commenters wanted to know who is responsible for determining water body type, possible Water body ID (WID) splits, and beneficial use designations; and what entity will bear the cost of performing UAAs. [Coon Creek Watershed District, Vermillion River Watershed Joint Powers Organization] Others asked if there will there be future revisions to the "Technical Guidance for Reviewing and Designating Tiered Aquatic Life Uses in Minnesota Streams and Rivers" document; and whether more than one IBI score should be required for designating TALUs. [Browns Creek Watershed District/Carnelian-Marine-St. Croix Watershed District, Red River Watershed Management Board]

MPCA response:
The UAA process would be unchanged from the current process for a UAA, with the exception that determination of TALUs would also be part of this process. The MPCA is responsible for determining water body type, possible Water body ID (WID) splits, and beneficial use designations with input from public stakeholders.

There are a number of pathways that could result in a change to a designated use. Changes to use destinations can be initiated by the MPCA as the result of the collection of data that demonstrates the current use is not appropriate. Any person may also petition the MPCA to consider a change to a use designation (Minn. R. § 7050.0405). For the most part, the cost of performing UAAs is largely borne by the MPCA (Hearing Exhibit D, SONAR [p. 64]), although the MPCA also encourages public input through stakeholder engagement (e.g., Intensive Watershed Monitoring [IWM] planning meetings, professional judgement group meetings [PJG]) and rulemaking since a change to a beneficial use designation requires a rule change.

Water body type determinations are made by the MPCA following protocols for fish (Exhibit S-64; Hearing Exhibit L.8; Attachment 3) and macroinvertebrates (Exhibit S-65; Hearing Exhibit L.7; Attachment 4). The information included in these documents also allow other parties to make these determinations.

WID splits related to TALUs are determined by the MPCA as part of the use review process that occurs before water quality assessments. Stakeholders have input in the location of these splits as part of the various stakeholder engagement activities (e.g., IWM planning meetings, PJG meetings). In addition, when the WID split is driven by the designation of an Exceptional or Modified Use, there will be opportunity for public participation as part of rulemaking to designation those uses.

The Agency will update the "Technical Guidance for Reviewing and Designating Tiered Aquatic Life Uses in Minnesota Streams and Rivers" as needed based on internal and external stakeholder input. This could include revisions to provide more information or clarifications or changes to the process for UAAs to

incorporate changing restoration technologies. For example, as best management practices are improved or developed, they can be included as proven restoration techniques that may be required in altered waters.

In most cases there are both macroinvertebrate and fish IBI scores used in the UAA determinations and often there are multiple visits either from the same or multiple stations on a stream reach. In addition, the UAA review is not performed in a vacuum using only biological information. This is important in all reviews, but it is especially important for reaches with one or two biological samples. This includes reviewing chemical, habitat, and land use information and data from adjacent or nearby stations. This process is described in Exhibit S-63.

G. Comments related to application of IBI models, biological criteria, and UAA tools

Relates to:
7050.0150, Subp. 4 (Definitions);
7050.0222, Subp. 2c. (Beneficial use definitions for cold water stream and river habitats (Class 2A));
7050.0222, Subp. 2d (Biological criteria for cold water stream and river habitats (Class 2A));
7050.0222, Subp. 3c (Beneficial use definitions for warm or cool water stream and river habitats (Class 2Bd));
7050.0222, Subp. 3d (Biological criteria for warm or cool water stream and river habitats (Class 2Bd));
7050.0222, Subp. 4c (Beneficial use definitions for warm or cool water stream and river habitats (Class 2B));
7050.0222, Subp. 4d (Biological criteria for warm or cool water stream and river habitats (Class 2B)).

Hearing Exhibit D (SONAR) discussion at:
Section 1.A., Summary of proposed amendments, pages 13-15;
Section 2. D. v., Implementation of TALU, pages 28-31;
Section 5.A.i., Incorporating numeric biological criteria directly into rule, pages 39-45;
Section 5.A.ii., Protecting high quality waters, pages 45-46;
Section 5.A.iii., Setting goals for streams affected by human-induced legacy habitat alterations, pages 46-48;
Section 5.A.v., Updating the structure of 7050.0470, page 50;
Section 5. B., Proposed changes and specific reasonableness:
7050.0222, Subps. 2c, 3c, and 4c, page 59;
7050.0222, Subps. 2d, 3d, and 4d, page 59;
Other relevant documents: Exhibits S-18, S-63, S-64, S-65, S-84, and S-85; Hearing Exhibits L.6, L.7, and L.8; Attachments 3, 4, 5, 6, and 7.

Summary of comments:
There were multiple comments related to the application of IBI models, biological criteria, and UAA tools. Because the comments were varied on this topic, specific comments are listed below followed by MPCA's response.

Specific comments and MPCA responses:

1. **Comment:** Several commenters suggested that the MPCA should better clarify the methods used as part of the TALU framework, including clearly describing the methodology for performing biological assessments and designation of uses. [WaterLegacy, Red River Watershed Management Board]

   MPCA response: In order to clarify the methods for the fish and macroinvertebrate IBI methods, the MPCA proposes a modification to two of the documents referenced in proposed section Minn. R. § 7050.0222. Specifically, the two IBI documents for fish and macroinvertebrates that are currently referenced in several places will be replaced by methods documents that describe in detail the protocols for sampling, sample processing, and IBI calculation. These documents describe the requirements for collecting data that can be used in UAAs and assessments of lotic waters in Minnesota. The new documents to be incorporated by reference are included as Attachments 3 and 4 to the MPCA's post-hearing response to comments. It is reasonable to clarify the IBI methods in documents that provide details in a more accessible manner.

   Following are the proposed modifications to the rule language as published:

   7050.0222, Subp. 2c., Item A, Subitem (2)
   (2) The attributes of species composition, diversity, and functional organization are measured using:
   (a) the fish ~~based~~ IBI as defined in ~~Development of a Fish-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014)~~ Fish data collection protocols for lotic waters in Minnesota (2017); or
   (b) the macroinvertebrate IBI as defined in ~~Development of a Macroinvertebrate-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014)~~ Macroinvertebrate data collection protocols for lotic waters in Minnesota (2017).

   7050.0222, Subp. 2c., Item A, Subitem (4)
   (4) The following documents are incorporated by reference and are not subject to frequent change:
   (a) Calibration of the Biological Condition Gradient for Streams of Minnesota, Gerritsen et al. (2012). The document is available on the agency's Web site at www.pca.state.mn.us;
   (b) ~~Development of a Fish-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014)~~ Fish data collection protocols for lotic waters in Minnesota (2017). The document is available on the agency's Web site at www.pca.state.mn.us;
   (c) ~~Development of a Macroinvertebrate-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014)~~ Macroinvertebrate data collection protocols for lotic waters in Minnesota (2017). The document is available on the agency's Web site at www.pca.state.mn.us; and
   (d) Development of Biological Criteria for Tiered Aquatic Life Uses, Minnesota Pollution Control Agency (2016). The document is available on the agency's Web site at www.pca.state.mn.us.

7050.0222, Subp. 3c., Item A, Subitem (2)

(2) The attributes of species composition, diversity, and functional organization are measured using:

(a) the fish ~~-based~~ IBI as defined in ~~Development of a Fish-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014)~~ Fish data collection protocols for lotic waters in Minnesota (2017); or

(b) the macroinvertebrate IBI as defined in ~~Development of a Macroinvertebrate-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014)~~ Macroinvertebrate data collection protocols for lotic waters in Minnesota (2017).

7050.0222, Subp. 3c., Item A, Subitem (4)

(4) The following documents are incorporated by reference and are not subject to frequent change:

(a) Calibration of the Biological Condition Gradient for Streams of Minnesota, Gerritsen et al. (2012). The document is available on the agency's Web site at www.pca.state.mn.us;

(b) ~~Development of a Fish-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014)~~ Fish data collection protocols for lotic waters in Minnesota (2017). The document is available on the agency's Web site at www.pca.state.mn.us;

(c) ~~Development of a Macroinvertebrate-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014)~~ Macroinvertebrate data collection protocols for lotic waters in Minnesota (2017). The document is available on the agency's Web site at www.pca.state.mn.us; and

(d) Development of Biological Criteria for Tiered Aquatic Life Uses, Minnesota Pollution Control Agency (2016). The document is available on the agency's Web site at www.pca.state.mn.us.

7050.0222, Subp. 4c., Item A, Subitem (2)

(2) The attributes of species composition, diversity, and functional organization are measured using:

(a) the fish ~~-based~~ IBI as defined in ~~Development of a Fish-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014)~~ Fish data collection protocols for lotic waters in Minnesota (2017); or

(b) the macroinvertebrate IBI as defined in ~~Development of a Macroinvertebrate-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014)~~ Macroinvertebrate data collection protocols for lotic waters in Minnesota (2017).

7050.0222, Subp. 4c., Item A, Subitem (4)

(4) The following documents are incorporated by reference and are not subject to frequent change:

(a) Calibration of the Biological Condition Gradient for Streams of Minnesota, Gerritsen et al. (2012). The document is available on the agency's Web site at www.pca.state.mn.us;

(b) ~~Development of a Fish-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014)~~ Fish data collection protocols for lotic waters in Minnesota (2017). The document is available on the agency's Web site at www.pca.state.mn.us;

(c) ~~Development of a Macroinvertebrate-based Index of Biological Integrity for Minnesota's Rivers and Streams, Minnesota Pollution Control Agency (2014)~~ Macroinvertebrate data collection protocols for lotic waters in Minnesota (2017). The document is available on the agency's Web site at www.pca.state.mn.us; and

(d) Development of Biological Criteria for Tiered Aquatic Life Uses, Minnesota Pollution Control Agency (2016). The document is available on the agency's Web site at www.pca.state.mn.us.

2. **Comment:** One commenter suggested the Class 2A narrative water quality standards should be more specific to native taxa to make it consistent with the IBI models; or, the IBIs should be altered to consider non-native trout; or, the Minnesota Department of Natural Resources should stock only native trout in Class 2A streams. The commenter also asked how new IBI models or site-specific standards would be implemented in cases where natural habitat conditions are limiting biological assemblages. [Vermillion River Watershed Joint Powers Organization]

   MPCA response: In developing biological assessment tools and biological criteria for cold water streams, the MPCA considered and accounted for cold water streams where native cold water fish species are naturally absent. As a result, the presence of native cold water species are not required for a stream to meet the goals for General Use cold water streams. Specifically, the development of the cold water fish IBIs and biological criteria included numerous streams were brook trout and other cold water obligate species may not have been historically present. First, these streams were part of the dataset used to develop the FIBIs (Exhibit S-64). Second, this type of stream was considered as part of the Biological Condition Gradient (BCG) models (Hearing Exhibit L.6 and Attachment 5). This is best illustrated by the metrics used in the models (see Table 8, p. 37 in Calibration of the Biological Condition Gradient for Streams of Minnesota; Hearing Exhibit L.6). There are two important points to make from Table 8. First, for BCG Levels 1-3, the metrics include alternate metrics for both streams with and without native brook trout populations. Second, BCG Levels 3 and 4 do not require the presence of native cold water taxa. BCG Levels 3 and 4 are important as most fish communities that attain this level of condition meet the General Use aquatic life use goals (Hearing Exhibit D, SONAR [p. 42]; see also Exhibits S-84 and S-85). Therefore, the biological criteria assigned to General Use cold water streams do not require the presence of native cold water taxa.

   Regardless of the fact that Minnesota's bioassessment tools account for streams where native cold water fish species are naturally absent, Minnesota Rules also provide mechanisms for modifying

standards in cases where a water body is atypical or unusual. Specifically, it may be appropriate to apply a site-specific modification to the standard (Minn. R. § 7050.0220, Subp. 7). The IBI models developed for assessing aquatic life were developed to apply to most streams, rivers, and ditches in the state, however, local conditions may result in the standards not being appropriate leading to the need to set a site-specific standard. UAAs are also a mechanism that can be used if certain criteria can be meet (e.g., natural habitat conditions are limiting biological communities).

Site specific standards are currently authorized under the CWA and Minnesota law and will continue to be available under the TALU framework. The MPCA will work with the commenter on the possibility of using this option.

3. **Comment:** Several commenters expressed concern that the TALU standards and IBIs might be applied to ephemeral waters. [Minnesota Department of Transportation, US Steel, Minnesota Chamber of Commerce] In response to rule language modifications proposed to Minn. R. § 7050.0222, Subp. 2d, Subp. 3d, and 4d at the hearing on February 16 (Exhibit L.5), the Agency received a comment that the modified language should be changed to say "fish and/or macroinvertebrates" instead of "fish and macroinvertebrates. [Markus]

   MPCA response: The MPCA does not routinely sample ephemeral, lotic waters for fish and macroinvertebrates because the IBIs are not developed for use in this type of habitat. The IBIs and the associated biological criteria are only applicable to waters where the IBI models can be appropriated applied. Specifically, the water needs to be suitable to allow for the colonization of fish or macroinvertebrates (Hearing Exhibit D, SONAR [p. 41, footnote 19]; Exhibit S-85 [p. 3]). The second comment regarding the commenter's proposed modification is based on the idea that the modification should not require both fish and macroinvertebrates to be able to colonize before the biological criteria are applied; but, rather, that the colonization of either fish or macroinvertebrates, or both, must be allowed before the biological criteria are applied. The intent was not to require both. The MPCA proposes changing "and" to "or" to better convey the intent that the stream should be suitable for the colonization of either fish or macroinvertebrates, or both, for the application of the biological criteria to be appropriate. Therefore, it is reasonable to make these modifications to rule to clarify the intent of the Agency regarding the applicability of the IBIs. To address these comments, the Agency proposes the following modifications:

   7050.0222, Subp. 2d, Subp. 3d, and Subp. 4d.

   7050.0222, Subp. 2d.
   A. The biological criteria for lotic cold water aquatic life and habitats (Class 2A) are applicable to perennial and intermittent waters that allow for colonization of fish or macroinvertebrates.

   7050.0222, Subp. 3d.
   A. The biological criteria for lotic warm or cool water aquatic life and habitats (Class 2Bd) are applicable to perennial and intermittent waters that allow for colonization of fish or macroinvertebrates.

7050.0222, Subp. 4d.

A. The biological criteria for lotic warm or cool water aquatic life and habitats (Class 2B) are applicable to perennial and intermittent waters that allow for colonization of fish or macroinvertebrates.

4. **Comment:** Two commenters stated that waters need to be first reviewed to determine if the IBIs can be appropriately applied. [US Steel, Minnesota Chamber of Commerce] Others commented that streamflow at the time of sampling should be considered. [Browns Creek Watershed District/Carnelian-Marine-St. Croix Watershed District, Red River Watershed Management Board]

   MPCA response: The review of waters to determine if the IBIs can be appropriately applied is already part of the UAA and assessment process. Specifically, the first phase of this determination is the site reconnaissance (Attachment 6) where it is determined if the station is appropriate for biological sampling. Reasons for rejecting a site include: no definable channel; insufficient wetted area for sampling; and wetland characteristics. A major reason for performing site reconnaissance is to determine if a water body is sufficient to allow for colonization of fish or macroinvertebrates. This is accomplished by both a fall and spring reconnaissance visits to ascertain these conditions and provides the MPCA with multiple data points to make this determination. During the sampling event, no sample may be collected if conditions are not suitable (e.g., insufficient wetted area) or the sample may be flagged as not reportable if a sufficient sample could not be collected (e.g., electrofishing equipment not functioning properly). Following sample collection, but before UAA analysis and assessment, the data are reviewed to determine if the data are assessable. For example, samples may be flagged as not assessable if it is determined that flow conditions were atypical. The UAA and use designation steps are also important to determine the assessability of the data and the attainability of the use (Attachment 7 [p.12]). The assessability is also considered through the assessment steps as well as during other steps such as the IWM planning meetings, PJG meetings, and stressor identification studies.

5. **Comment:** One commenter felt that because the Human Disturbance Sore (HDS) score used in the development of the biological criteria does not include percent mining, that, therefore the IBI scores in streams impacted by mining are inflated. [M. Johnson]

   MPCA response: The HDS is a generalized disturbance score that is used to "train" the IBI models (Exhibits S-64 and S-65). Specifically, it is used to select biological metrics that respond to a generalized disturbance gradient. Even though the HDS score that is used to develop the IBI models is not stressor or impact specific, biological communities have fundamental and predictable responses to stress. This means that although the HDS scores did not explicitly include mining land use, the impacts from these activities will still be reflected in the IBI scores. As a result, the IBIs are robust measures of biological health for a range of stressor types. In addition to the HDS not requiring a percent mining metric, the metrics within the HDS already directly and indirectly capture the potential impacts of mining on aquatic communities. The HDS includes a metric for the number of point sources per km^2 and a proximity correction factor for point sources which directly capture mining activity. In addition, there are other activities that are associated with mining that that are captured by the HDS score. These include: percent impervious surface, percent channelized stream per stream km^2, degree channelized at site, percent disturbed riparian habitat, condition of riparian zone, number of road crossings per km^2, and urban land use adjacent to site. It is reasonable to use

HDS scores that incorporate mining through multiple metrics that directly or indirectly capture the impacts of mining.

6. **Comment:** One commenter stressed that the index of biological integrity should include specific conductance as a metric. [M. Johnson]

   MPCA response: The inclusion of specific conductance as a metric in the IBIs is not logical. The metrics in the IBIs are biological metrics that measure different aspects of the biological community. As part of a stressor identification review, the IBI scores, biological metric scores, and raw biological data can be used to determine if specific conductance (or the constituents which are causing elevated specific conductance) are a stressor, but specific conductance cannot be part of the IBI itself. It is reasonable to not include specific conductance as a metric in the IBI because specific conductance is not a biological measure.

7. **Comment:** The CWA Section 101(a) objective is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 U.S.C. § 1251 (a)). One commenter felt that achieving the CWA objective means achieving the natural state of a water, which is equivalent to the Biological Condition Gradient Level 1, and therefore any water with a BCG designation less than Level 1 has room for improvement. This means that waters have the potential to meet the Exceptional Use should be designated as such. [M. Johnson]

   MPCA response: This is not an appropriate interpretation of the CWA and its objective. The CWA is clear that the 101(a)(2) goal of the CWA is consistent with the objective. The 101(a)(2) is an interim goal that provides for the protection of the and propagation of fish, shellfish and other wildlife[3] (sometimes called by the shorthand "fishable/swimmable"). This goal is not equivalent to the natural condition or BCG Level 1. The practice of managing water quality is tied to the 101(a)(2) goal and the CWA's definition of an existing use. The CWA protects beneficial uses that are "existing uses" (i.e., uses actually attained in a surface water on or after November 28, 1975 [40 CFR § 131.3(e)]). Because the "restore and maintain" objective of the CWA is tied to existing uses that were actually attained in a surface water on or after November 28, 1975, and some surface waters have not actually attained "natural" conditions on or after that date, the CWA does not require that "natural" conditions be attained for all surface waters. There must exist some evidence that water quality has been sufficient to support a given use at some point in time since November 28, 1975, for that use to be defined as an "existing use" for a water body. In addition, the CWA interim goal explicitly says that it is consistent with the Act's objective.[4] It is reasonable that the proposed TALU amendments do not require all waters to be classified as Exceptional Use. It should be noted that a General Use designation does not preclude efforts to improve the condition of a stream to the Exceptional Use.

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[3] *(2)it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water* (33 U.S.C. § 1251 (a)).

[4] *(a) The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective it is hereby declared that, consistent with the provisions of this Act…*
(2)it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983; (underline added) (33 U.S.C. § 1251 (a))

8. **Comment:** One commenter felt that the TALU approach, including the IBIs, must be informed by data on constructed and highly modified open channels, which are components of many public drainage systems. [Rice Creek Watershed District]

   MPCA response: The commenter is incorrect that the IBIs were not informed by data on constructed and highly modified open channels. Channelized systems were explicitly considered as part of the IBI and biological criteria development process. Approximately 1/3 of samples collected by the MPCA and used in IBI and biological criteria development were from stream reaches determined to be channelized (e.g., Exhibits S-84 [pp. 32-36], S-64 and S-65[5]). The MPCA has explicitly considered where the biological tools are applicable and designed these tools for assessing both natural and altered water bodies. Therefore, it is reasonable to use the biological tools (e.g., IBIs) and the proposed biological criteria to assess modified systems.

9. **Comment:** One commenter asked that the MPCA standardize the location of biological monitoring stations as part of the TALU approach. [Browns Creek Watershed District/Carnelian-Marine-St. Croix Watershed District]

   MPCA response: The MPCA is not clear about exactly what the commenter means by standardizing the location of stream sites. If it means that the Agency should use a protocol to select the location of sampling stations, then this is already the case. For example, site reconnaissance is performed to determine if a station is sampleable (described above in #4). In addition, consideration is given to locating stations on stream reaches that are representative of the WID. For example, if a WID channel is largely natural then the goal is to locate the sampling station on a natural reach.

   There are also broader strategies used by the MPCA for locating biological monitoring stations. These include:

   - **IWM Cycle 1:** Selection of biological monitoring sites for the Intensive Watershed Monitoring (IWM) program follows a systematic approach. The first cycle of IWM used a framework of subwatersheds within each major watershed as the basis for selecting the location of sites near the outlet of each minor (~ 5 mi^2) and major (~40 mi^2) watershed. Sites were established in close proximity to these outlet unless there were unique circumstances (e.g., lake or large wetland) that made it impossible. Sites were also selected irrespective of their channel condition (natural stream or channelized/ditch) at the road crossing closest to the watershed outlet.
   - **IWM Cycle 2:** Site selection for Cycle 2 of IWM also represents a systematic approach, though one that is slightly different than IWM Cycle 1. In Cycle 2 a shift in the watershed framework (to ~20-30 mi^2) and changes to the guidelines for selecting sites within each watershed occurred. Rather than selecting sites that were close to the watershed outlet of these subwatersheds, IWM Cycle 2 guidelines emphasize the selection of sites that best represent the watershed. For example, if watercourses in the watershed are predominantly channelized, then a representative stream sampling location should be located on a channelized section as well. Often times, sites selected in IWM Cycle 1 meet this new

[5] These SONAR exhibits do not explicitly call out channelized reaches, but that is because the channelized reaches were included in the analysis. In other words, if they were to be discussed in these documents it would have been to note that channelized streams were excluded from analyses.

criteria and will be retained in IWM Cycle 2, though on occasion new site locations will need to be selected to replace IWM Cycle 1 sites that do not satisfy the new guidelines.

- In addition to being representative of the predominant stream type in the watershed, IWM Cycle 2 site selection also considers the following:
  - Site access - sites should be reasonable to access and for which landowner permission is either not needed (e.g., public land or public right-of-way) or for which landowner permission has been granted previously.
  - Proximity to watershed outlet – sites that are closer to the outlet better reflect the condition of the watershed by "capturing" more of its area compared to a site that is closer to the headwaters of a watershed.
  - Co-location of sites – if a previously monitored station meets the IWM Cycle 2 guidelines, then it has preference over a new location, because there is less uncertainty regarding access to the site and the ability to effectively sample the biological communities there. It is also beneficial to co-locate biological monitoring and water quality (i.e., chemistry) monitoring sites as these combined data sets will provide a more comprehensive evaluation of watershed condition.

10. **Comment:** One commenter asserted that the IBI dataset was not sufficiently large because a larger dataset of chemical measurements was determined to be a "modest" number of samples. The commenter felt this would result in under protective biological criteria values. [B. Johnson]

    MPCA response: The commenter appears to be mixing the data needs of biological samples with chemical samples. Fewer biological samples are needed because these samples integrate multiple stressors over time as compared to one-time chemical grab samples (Hearing Exhibit D, SONAR [p. 40]). A small or insufficient dataset would not necessarily result in under protective biological criteria, but rather would increase the risk of setting inaccurate thresholds (i.e., either too high or too low). This was a concern for the Agency so several different analyses were performed to determine the dataset size necessary to set accurate and protective biological criteria (see Exhibits S-84 [Appendix] and S-85 [pp. 8-9]). As a result, the datasets used to set the proposed biological criteria thresholds were sufficient in size to set accurate and protective goals.

11. **Comment:** One commenter thought that because the macroinvertebrate data is collected in the fall it misses the sensitive organisms which occur in the spring. [B. Johnson]

    MPCA response: The MPCA uses a fixed index period (late-July through October) to reduce the variability in the biological communities (Attachment 4 [p. 6]). This is important because macroinvertebrate communities change seasonally and by sampling these communities within a fixed season reduces this variability. This means that the sampling of these organisms needs to be limited to defined time period. The selection of the late summer through fall index period was selected to sample macroinvertebrate communities during the period of greatest stress (i.e., lower water levels, higher temperatures, etc.). In doing so, these measurements are more likely to identify negative anthropogenic impacts than a spring sample where conditions (e.g., cooler temperatures, higher dissolved oxygen) might mask these impacts. There is also a practical reason to not use spring samples and that is avoiding high spring flows. These flows can make it impractical or dangerous to sample these waters. Sampling during high flows can also introduce unwanted sample variability as the IBI models were develop from streams sampled under normal flow conditions.

12. **Comment:** One commenter felt that the taxonomic resolution used by the MPCA for fish and macroinvertebrates is not sufficient or at least not clear. [B. Johnson]

    MPCA response: The MPCA has well-defined taxonomic resolution goals which takes most macroinvertebrate taxa to the genus level and fish to the species level (Hearing Exhibit D, SONAR [p. 13, footnote 4]). These are described in Exhibits L.7 and L.8 and in Attachments 3 and 4. This is a standard taxonomic resolution used by advanced biological monitoring programs (see Exhibit S-21). Although the macroinvertebrate IBI models and biological criteria are based on genus-level data, the MPCA currently identifies some groups to the species level (e.g., Odonata [dragonflies and damselflies], Plecoptera [Stoneflies], Ephemeroptera [mayflies], and Trichoptera [caddisflies]). This finer taxonomic resolution can be used now as part of standards development, stressor identification, and beneficial use reviews or in future refinements of the biological monitoring tools.

13. **Comment:** One commenter stated that the MPCA's watershed approach fails to follow the ecoregion approach in EPA guidance for developing biological tools. [B. Johnson]

    MPCA response: The use of ecoregions in biological tool development (e.g., IBIs) addresses natural variability in biological communities in order to maximize the ecological signal from anthropogenic impacts. For example, large rivers in southern Minnesota have naturally different biological communities than cold water streams in northern Minnesota. To address these dissimilarities, different models are developed so that comparisons are made between water bodies with similar natural characteristics. As mentioned by the commenter, ecoregions are one stream typology framework that can be used. However, this is not the only organizing framework that can used and other frameworks can be used if appropriate and if they are demonstrated to be effective. The ecoregion approach is *a priori* prediction of type, quality, and quantity of environmental resources. Ecoregions are classified based on similar geology, landforms, soils, vegetation, climate, land use, wildlife, and hydrology. Although ecoregions are useful, the MPCA relied on a more empirical approach to classifying streams using cluster analysis (the details of this are described in Exhibits S-64 [pp. 7-9] and S-65 [pp. 8-10]). As part of this analysis, ecoregions were evaluated as a possible classification framework, however it was determined that a different framework using geographic location, thermal regime, gradient, and stream size was more effective for grouping naturally similar streams (see proposed rule item Minn. R. § 7050.0150 Subp. 4. (NN)). As a result, the typology framework used in Minnesota was developed and determined to be more robust and effective than the ecoregion framework. This framework is also better tailored to Minnesota's lotic resources and the biological monitoring program. Because the Minnesota framework was determined to be effective for Minnesota streams, it is a reasonable approach to address natural variably.

14. **Comment:** One commenter suggested that draft criteria do not belong in proposed rules, specifically the Biological Criteria for TALU, 2014, p. 39 refers to "draft criteria" and Table 11 is "Draft." [M. Johnson]

    MPCA response: The biological criteria remained draft because until recently they had not been proposed and the Agency had been seeking feedback from stakeholders on these documents during the previous 2+ years that they have been available. Once the TALU rule amendment is adopted, this document can be updated to reflect that they are no longer draft, but rather adopted biological

criteria. In Hearing Exhibit D (SONAR) on page 43, the biological criteria are also referred to as "draft" and should be "proposed."

H. Comments related to the proposed Modified Use provisions

Relates to proposed rule parts:
7050.0150, Subp. 3 (Class 2 water, aquatic life and recreation);
7050.0150, Subp. 4 Item LL (definition of use attainability analysis);
7050.0222, Subp. 2c (Beneficial use definitions for cold water stream and river habitats (Class 2A));
7050.0222, Subp. 2d (Biological criteria for cold water stream and river habitats (Class 2A));
7050.0222, Subp. 3c (Beneficial use definitions warm or cool water stream and river habitats (Class 2Bd));
7050.0222, Subp. 4c (Beneficial use definitions warm or cool water stream and river habitats (Class 2B)).
7050.0460, Subp. 1 (Waters specifically classified; Explanation of listings in part 7050.0470);
7050.0470 (Classifications for surface waters in major drainage basins).

Hearing Exhibit D (SONAR) discussion at:
Section 1.A., Summary of proposed amendments, page 15;
Section 1.B., Statement of general need, pages 15-18;
Section 2.D.i., TALU framework overview, page 22;
Section 2.D.iii., Minnesota's watershed approach, page 26;
Section 2.D.v., Implementation of TALU, pages 28-31;
Section 4, Statutory authority, pages 37-39;
Section 5.A.iii., Setting goals for streams affected by human-induced legacy habitat alterations, pages 46-48;
Section 5.B., Proposed changes and specific reasonableness:
- 7050.0150, Subp. 4, Item LL – page 55;
- 7050.0222, Subps. 2c, 3c, and 4c, page 59;
- 7050.0222, Subps. 2d, 3d, and 4d, page 59;
- 7050.0460, Subp. 1, page 60;
- 7050.0470, Subps. 1-9, page 61;

Section 6.A.ii, The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rules and any anticipated effect on state revenues, pages 63-64;
Section 6.F.i., Equity analysis, page p. 78;
Section 8.C.i., Modified Use, pages 89-90;
Appendix A, Specific Use changes;
Other relevant documents: Exhibits S-27, S-63, S-84, S-85, and S-113; Hearing Exhibit L.6; Attachments 6, 7, and 10.

Summary of comments:
The development and implementation of a Modified Use in the proposed TALU rule elicited concerns from many commenters displaying divergent perspectives. These perspectives ranged from the view that all "artificial" watercourses should automatically be designated as Modified Use; to the view that the Modified Use creates a framework for unlawfully "downgrading" streams through a "mass reclassification." Several comments were received related specifically to the process for designating Modified Uses. This process includes both: the requirement in proposed section Minn. R. § 7050.0222, Subps. 3c and 4c, that a UAA be

conducted supporting the designation; and that a rulemaking be undertaken to change the stream's classification in Minn. R. § 7050.0470. Because the comments were varied on this topic, specific comments or groups of related comments are listed below followed by MPCA's response.

Several comments were explicitly concerned with the protection Class 2A waters and it should also be noted that the proposed rule amendments do not propose to change any water from Class 2A to Class 2B or *vice versa*. Nor does the rule propose to change how Class 2A or 2B designated uses are determined or changed.

Specific comments and MPCA responses:

1. **Comment:** There were several comments that were either concerned that the TALU rule amendments would result in broad reclassifications of waters or that the amendments need to include provisions to allow for broad reclassifications of waters. Some commenters were concerned that the Modified Use would create a framework for unlawfully "downgrading" streams through a "mass reclassification" [WaterLegacy and others]. Contrasting with this comment, another commenter suggested that "artificial" watercourses should automatically be designated as Modified Use [Red River Watershed Management Board].

   MPCA Response: The TALU rule amendments and supporting documentation create a framework for performing "individualized determinations," therefore, mass reclassifications do not occur for any group/class of streams such as drainage ditches. These individualized determinations are done through the CWA-required UAA process (40 CFR § 131.10(j)) as that process is defined in proposed rule section Minn. R. § 7050.0150, Subp. 4. (LL), and as that process is required by proposed rule sections Minn. R. § 7050.0222, Subp. 3c. D. (1) and Subp. 4c. D. (1). The UAA process is detailed on pages 28 through 31 of Hearing Exhibit D (SONAR) and in more detail in Exhibit S-63. Each of the 112 reaches proposed for designation to the Modified Use have been subjected to a UAA that demonstrates the General Use is not attainable. In Appendix A of Hearing Exhibit D (SONAR), data that were used in this evaluation along with narrative statements that describe the outcome of the data review are provided. It is reasonable to use a UAA process to make individualized determinations for the classification of Modified Use streams.

   If a UAA results in a classification that a stream is a Modified Use, it is not a "downgrading" of a stream from the current classification (i.e., default General Use); rather, it is a recognition that the current classification is not accurate. These are stream reaches where the use has not been assessed before, and therefore, the General Use is not an existing use. The UAA process does not result in a Modified Use (or Exceptional Use) classification without due consideration. The UAA process is rigorous as required by the CWA (40 CFR § 131.10), and must demonstrate that the existing use is not attainable because of natural conditions or human-induced changes that have been in place since the date on which the CWA established existing uses (i.e., November 28, 1975). The result of a UAA is an appropriate classification of a stream. A UAA cannot result in the loss of an existing use because a UAA cannot violate the antidegradation provisions of the CWA and state law, which prohibit the loss of an existing use. It is reasonable to use the CWA-authorized UAA process to assign appropriate classifications to streams.

   Finally, there is evidence from other states which have adopted a TALU framework into rule that it does not result in a mass reclassification of waters to uses below the CWA 101(a)(2) goal. Both Ohio

and Maine have documented improvements in water quality since adoption of these rules (Hearing Exhibit D, SONAR [p. 26]). For example, both Ohio and Maine have documented an increase in the number of stream reaches where the designated use is upgraded (Hearing Exhibit D, SONAR [p. 26], Attachment 7).

2. **Comment:** Several comments were received regarding how the Agency interprets the available data when performing UAAs. Some commenters disagreed with the bar for data sufficiency in determining what is attainable in waters maintained for drainage and indicated that these waters may be restorable now or in the future and should be protected for their potential restorability. [Harrington, Markus, M. Johnson, WaterLegacy] Related to this, a commenter expressed concern that UAAs would be based on the condition at the time of sampling meaning that a ditch might have recovered and been cleaned out sometime between Nov 28, 1975 and the time of sampling, thereby missing the existing General Use. [Arnosti] The commenter further suggested that the five-year natural restoration threshold be reconsidered because it is arbitrary. [Arnosti] One commenter suggested that the monitoring framework is not sufficient because stream reaches that are several miles long are being designated based on only 1-2 monitoring stations. [Lenczewski, Callahan] One commenter was concerned that the process for designating waters does not require the agency to demonstrate existing use and shifts that burden to a party opposing the designation [Lenczewski]

   MPCA Response: As part of the UAA, the MPCA is making a reasonable determination of the restorability of waters proposed for Modified Use designation. This includes a review of available data (i.e., biological, chemical, and physical data) whether current or historical, a determination of whether or not the modification predates the existing use date, and an assessment of the status of the drainageway (i.e., whether or not it will recovery on its own in the near term, if it is restorable, or if drainage maintenance is likely to continue). As part of this, the 5-year recovery period is intended as a guideline to determine if the modification to the channel is temporary and will recovery in a relatively short period of time or if the intent is to retain the channelized state through routine maintenance.

   Regarding the spatial extent of the monitoring framework, it is not feasible to sample every mile of stream in the state. However, the MPCA does use guidelines that limit extrapolation of a designated use beyond what is reasonable. For both the Modified and Exceptional Uses, the designation is typically only extrapolated 5 miles from the sampling station (see Exhibit S-63 [pp. 16-17]). This may vary and it is more likely that the extrapolated use will extend less than 5 miles from the biological station. The objective is to identify relatively homogenous stream sections with similar natural characteristics and anthropogenic influences. As a result, landuse changes, major tributary confluences, channel condition, and other landscape changes are considered as part of the UAA to determine the reasonable extent of the beneficial use between the monitored and unmonitored reaches.

   It is unreasonable to require the UAA to prove that the condition existed at every point in time after November 28, 1975. The use of available data to make a determination of the existing use is consistent with guidance provided by the EPA:

   > *"EPA recognizes, however, that all the necessary data may not be available to determine whether the use actually occurred or the water quality to support the use has been attained.*

> *When determining an existing use, EPA provides substantial flexibility to states and authorized tribes to evaluate the strength of the available data and information where data may be limited, inconclusive, or insufficient regarding whether the use has occurred and the water quality necessary to support the use has been attained. In this instance, states and authorized tribes may decide that based on such information, the use is indeed existing."* (Environmental Protection Agency, 40 CFR Part 131, Water Quality Standards Regulatory Revisions; Final Rule; Attachment 8 [p. 51027])

In making UAA determinations, the MPCA considers all available information – not only recent information. In Exhibit S-63 this is summarized as: "*This approach seeks to bring in all available current and historical information from a water body unit (identified as a WID) in order to build supporting evidence for the attainability of a beneficial use.*" In performing UAAs, the Agency considers historical information. For example, historical aerial imagery is important for determining the date when a stream was channelized to ensure the channelization was is an existing use (i.e., a use existing on or before November 28, 1975). In cases where limited historical information is available, the Agency must make a reasonable determination using available data. Although not necessarily germane to the current proposed rule amendment, any proposal to change a Class 2A to Class 2B or *vice versa* would include historical information if available to determine the existing use. Due to the interest in many Class 2A waters (i.e., trout waters), there is often considerable historical data that can be used to determine the existing use. It is reasonable to base UAA studies on a comprehensive review of all available data to make a determination of the appropriate beneficial use, which protects the existing use.

The burden of demonstrating the existing use for a stream does fall to the Agency (Hearing Exhibit D, SONAR [pp. 63-64]). The definition of a UAA in proposed section Minn. R. § 7050.0150, Subp. 4(LL) states "… A use attainability analysis is required to remove a designated use specified in section 101(a)(2) of the Clean Water Act that is not an existing use …" This statement indicates that a designated use cannot be removed if it is an existing use. If a designated use is not an existing use then a UAA is required before the designated use may be removed. In application, a Modified Use designation is below the General Use (i.e., the 101(a)(2) goal of the Clean Water Act), which is why a UAA is required. The General Use designation cannot be removed if the General Use is an existing use. It is reasonable to require a UAA before removing a designated use that is not an existing use.

For all the reasons stated, the data provided by the Agency as part of the Modified Use UAAs are reasonable.

3. **Comment:** A commenter suggested that the Modified Use designations should sunset after 5 years. [WaterLegacy]

   MPCA Response: The Modified Use does not create a permanent use without periodic review. Federal regulations require that, "*The State shall also re-examine any waterbody segment with water quality standards that do not include the uses specified in section 101(a)(2) of the Act every 3 years to determine if any new information has become available.*" (40 CFR 131.20(a)). The CWA "101(a)(2)" uses ("fishable, swimmable" uses) are equivalent to the proposed General Use. This means that as new data is available, it will be considered to determine if the Modified Use designation is still appropriate. This process to consider new data will occur within the well-

established "triennial review" that MPCA undertakes to comply with the CWA. Because of this required periodic review, it is unreasonable to automatically sunset Modified Use destinations every 5 years as one commenter suggested. It is reasonable to rely on the triennial review process for periodic review of Modified Uses.

4. **Comment:** Commenters suggested potential modifications to the Modified Use process in the rule as proposed. Several commenters suggested that a Modified Use should only be designated when the nonattainment of the General Use biological criteria is solely caused by a nonpollutant; not when the stream is impacted by any chemical pollutant. [WaterLegacy, Crawford et al.] A commenter further suggested there was a need to perform a stressor identification study as part of the UAA process for designating a Modified Use. [M. Johnson] Commenters also expressed concerns that chemical pollutants for which there are no promulgated standards would receive less scrutiny in water bodies designated as a Modified Use, [WaterLegacy, M. Johnson] and that wastewater treatment permits for discharges to Modified Use streams would be designed to only protect the lower biological goals. [Don Arnosti] One commenter suggested that water quality standards cannot be set to balance important socioeconomic needs. [WaterLegacy]

   MPCA Response: The TALU framework, and its tiered biological uses, is just one part of the larger structure of Minnesota's water regulations that are designed to reach the CWA objective of restoring and maintaining the chemical, physical, and biological integrity of our Nation's waters. The larger structure of water regulations includes distinct chemical water quality standards, as well as implementation of chemical and biological standards through Total Maximum Daily Loads (TMDL), Watershed Restoration and Protection Strategies (WRAPS), and permits. It is not reasonable to demand that TALU incorporate aspects of water regulation that already exist in other portions of statute and rule.

   The commenters who suggest that a Modified Use should not be available if a stream is impacted by any chemical pollutant overlook the fact that the proposed rule does not change any of the existing chemical water quality standards in Minn. R. ch. 7050. All existing water quality standards (e.g., chemical pollutant standards, antidegradation standards) continue to exist parallel to the proposed biological water quality standards in the TALU rule. The MPCA will continue to implement water quality standards for chemicals. In addition, as stated in Hearing Exhibit D (SONAR) on page 90, "*Designation to Modified Use will not change the standards that apply to Class 2 water bodies or affect existing permit conditions.*" Therefore, a Modified Use would not result in permits that are designed to protect a lower use. A redundant system for chemical water quality standards within the biological TALU water quality standard is not needed. It is unreasonable for the TALU rule to be expected to somehow contain and convey all previously adopted water quality standards.

   The MPCA will continue to implement chemical standards even in stream reaches that are determined to have a biological impairment. Indeed, that is exactly what the Agency has been doing using existing chemical standards and the narrative biological standard. During 2012-2013, the Agency assessed stream reaches to determine if they were impaired under the applicable chemical water quality standards and the narrative biological standard. If a stream reach was determined to be impaired for a chemical pollutant, the Agency included it on the 2016 impaired waters list. If the stream reach was determined to be impaired for aquatic life under the currently applicable narrative standard equivalent of the General Use, the agency included it on the 2016 impaired

waters list. Of the 112 stream reaches proposed for Modified Use designation, 67 (61%) were included on the 2016 impaired waters list for aquatic life use impairments. Aquatic life use impairments are biological impairments. In the future, under a TALU framework, the Agency will assess streams for both chemical impairments and for biological impairments relative to the stream's TALU tier. The difference from the past is only that the biological impairment assessments are more precise and appropriate for the stream.

The commenters who suggest that a Modified Use should not be available if a stream is impacted by any chemical pollutant also overlook the fact that the proposed rule requires that a Modified Use designation must be based on the demonstration that **habitat** is limiting one or both of the biological assemblages. This means that regardless of the chemical conditions, good or bad, the water body would still not meet the General Use biological criteria based on habitat conditions. This is stated in the WQS handbook (underline added):

> *"In some instances, physical factors may preclude the attainment of uses regardless of improvements in the chemistry of the receiving water. This is particularly true for fish and wildlife protection uses where the lack of a proper substrate may preclude certain forms of aquatic life from using the stream for propagation, or the lack of cover, depth, flow, pools, riffles, or impacts from channelization, dams, or diversions may preclude particular forms of aquatic life from the stream altogether."* WQS Handbook (Exhibit S-113)

It is reasonable to base biological water quality standards on an assessment that biological habitat is the limiting factor; and rely on water chemistry when assessing for separately authorized chemical water quality standards.

Regarding the setting of WQS using socioeconomic provisions, the CWA does have provisions for setting goals below the 101(a)(2) goal using socioeconomic reasons outside of antidegradation regulations[6]. 40 CFR § 131.10(g) (6) states as a reason for assigning goals below the 101(a)(2) goal: "Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact." However, the MPCA is not basing the Modified Use determinations on this reason, the MPCA would restate the statement provided in Hearing Exhibit D (SONAR) on page 14 and at the hearing to clarify the meaning.

> *"Adopting the TALU framework in rule:*
> - ***Will** better balance the requirement and need to protect and restore aquatic resources while recognizing that legacy, physical conditions may preclude the attainment of the CWA 101(a)(2) goal;"*

[6] "The Water Quality Standards Regulation allows States to establish uses that are inconsistent with the section 101(a)(2) goals of the Act if the more stringent technology required to meet the goals will cause substantial and widespread economic and social impact. These are impacts resulting specifically from imposition of the pollution controls and reflect such factors as unemployment, plant closures, and changes in the governmental fiscal base. The analysis should address the incremental effects of water quality standards beyond technology-based or other State requirements. If the requirements are not demonstrated to have an incremental, substantial, and widespread impact on the affected community, the standard must be maintained or made compatible with the goals of the Act." WQS Handbook (Exhibit S-113)

In reviewing this consideration it was determined that in Hearing Exhibit D (SONAR) in Appendix A, the reason stated for designating the Modified Use was incorrect. In Hearing Exhibit D (SONAR), 40 CFR § 131.10(g) (3) is used ("Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place;"). However, because these assessments are based on habitat limitation it is more appropriate to use 40 CFR § 131.10(g) (4) ("Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use;"). As a result the Agency will change all instances of this in Appendix A of Hearing Exhibit D (SONAR) (Attachment 10).

5. **Comment:** Several commenters expressed concerns about the protection of downstream waters when a Modified Use is designated upstream. [WaterLegacy, Arnosti, Marcus] Related to this, a commenter suggested that it should not be possible to assign Modified Uses upstream of waters impaired for chemical pollutants. [Markus] In some cases these concerns were specific to how Modified Uses might affect designated trout waters (2A streams) through downstream impacts or because trout may move from designated Class 2A streams to other waters (Class 2B) during certain periods of the year. [Lenczewski, Callahan]

   MPCA Response: In response to concerns regarding how the Modified Use process might affect downstream waters, commenters expressed concern with the protection of downstream waters when a Modified Use is designated upstream. The process of designating uses must protect downstream uses as required by 40 CFR 131.10(b), which states that "In designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters." This provision requires the MPCA to consider and to ensure the attainment and maintenance of downstream water quality standards during the establishment of designated uses. Therefore, a downstream Class 2A cold water stream is considered during the assessment to reclassify a stream to a Modified Use. It is reasonable to comply with federal requirements to protect downstream waters as part of the use designation process. To clarify this, the Agency will propose the modifications to the TALU amendments in a new part to explicitly include downstream use protection language that follows federal regulations:

   7050.0155 (new part)

   7050.0155 Protection of downstream uses.
   All waters must maintain a level of water quality that provides for the attainment and maintenance of the water quality standards of downstream waters, including the waters of another state.

   Although this language is an improvement to the rules, the proposed Modified Uses already comply with this requirement. The designation of Modified Uses is based on legacy modifications to local, physical habitat conditions, which are limiting the biological assemblages. As such, the TALU framework does not ignore chemical pollutants that can increase loading of these pollutants downstream and cause downstream impairments (see comment 4 above).

6. **Comment:** In their comments on the Modified Use process, commenters suggested potential modifications that would impact the entirety of the rule as proposed. One commenter suggested that the TALU rules should somehow prohibit future hydrological alterations in a watershed that could have an impact on stream biology. [WaterLegacy] Taking an opposite perspective, another commenter suggested that waters impacted by unregulated activities that cause hydrological alterations (such as tiling, private ditching) should be eligible for a Modified Use designation. [Vermillion River Watershed Joint Powers Organization] In addition, this commenter and another noted that since cold water streams (Class 2A) can be impacted by legal, physical habitat alterations, the Modified Use designation and biological criteria should be applicable to these streams. [Vermillion River Watershed Joint Powers Organization, Minnesota Department of Transportation]

   MPCA Response: In response to commenters suggesting changes to the proposed rule based on concerns about hydrological modifications, there are existing mechanisms in the CWA and state regulations that govern practices that impact hydrology in Minnesota watersheds and streams. These include: protection of existing uses (40 CFR 131.3); TMDL load allocations for non-point pollutant sources and related implementation strategies in WRAPS (CWA section 303(d); Minn. Stat. ch. 114D); stormwater management requirements under MS4 permits (Minn. R. ch. 7090); water withdrawal permits (Minn. Stat. ch. 103H); and drainage law (Minn. Stat. ch. 103E). The proposed TALU rule amendments do not alter these existing laws, which manage hydrological impacts. Rather, the TALU rule amendments create a framework within which these existing laws can be more precisely implemented using the best methods for each biological tier. Hearing Exhibit D (SONAR) as well the CWA is clear on how the concept of existing use is important for protecting beneficial uses and preventing hydrological alterations that impact attainment of beneficial uses. It is reasonable to rely on existing laws for the management of hydrological impacts and rely on water quality standards for establishing biological criteria to protect existing uses.

   The TALU framework is a proposed refinement of the Class 2 aquatic life beneficial use classification and related biological criteria. The proposed rule is not intended to substantively amend the narrative water quality standard in Minn. R. § 7050.0150 Subp. 3. The only amendment proposed in this rulemaking to the narrative water quality standard is to standardize the use of terms related to the TALU framework. The addition to the narrative standard language proposed by the commenter relates to regulating water flow. The need for an amendment of the narrative standard to control flow has not been established in this rulemaking.

   A Modified Use for cold water (Class 2A) streams (i.e., "coldwater Modified Use") was considered during the development of the tiered biological criteria. However, there are a relatively small number of channelized cold water streams with biological monitoring data in the state, which made the development of a Modified Use for these streams infeasible (Hearing Exhibit D, SONAR [p. 48]; Exhibits S-84 and S-85 [p. 14]). It is possible with the collection of additional data that a subset of legally altered cold water streams could support the development of a coldwater Modified Use. Regardless, the implementation of a TALU framework does not preclude use of a UAA to change the goals for a cold water stream if it can be demonstrated that the use is not feasibly attainable due to the one of the six reasons stated in 40 CFR § 131.10(g). It is reasonable to not include a coldwater Modified Use because development was not feasible and because of the small number of streams that it would affect.

7. **Comment:** The MPCA received a comment that the TALU UAA process should consider designation of Limited Use waters. [Rice Creek Watershed District, US Steel, Minnesota Chamber of Commerce]

   MPCA Response: Limited resource value waters (Class 7) are for the most part waters that are not appropriate (e.g., ephemeral) for application of the current biological tools (i.e., IBIs, biological criteria). As such, ephemeral stream reaches are avoided as part of biological monitoring, (Hearing Exhibit D, SONAR [p. 41, footnote 19]; Attachment 6) and therefore, are reasonably not part of the UAA process for TALUs.

8. **Comment:** One commenter expressed concern that Modified Use designations will reduce incentives to improve the condition of ditches, will lock in out-of-date restoration techniques, and set off a rush to clean out ditches. [Don Arnosti] Comments were also received with concerns that the designation of the Modified Use was an approach to remove waters from the Impaired Waters List thereby reducing workloads at the Agency [Lenczewski, Markus, B. Johnson].

   MPCA Response: As stated in Hearing Exhibit D (SONAR) on page 15, the TALU framework "is not a rationale for the *a priori* relaxation of pollution controls or the removal of waters from the impaired waters list." The TALU framework may affect existing pollution controls or water quality management activities, in some cases making them more or less stringent, but TALU designations are dependent on a rigorous and objective scientific assessment of the physical, chemical, biological, or economic factors that affect attainment of the uses in a water (i.e., UAA). This does not mean a decrease in workload, but rather a better allocation of efforts to maintain or improve water quality (Hearing Exhibit D, SONAR [pp. 17, 22, 89-90]). Ultimately, the TALU framework is reasonable because it will improve water quality outcomes by setting attainable goals which then drives better allocation of existing resources to protect or restore those goals.

I. Comments related to specific proposed use designations or the beneficial use tables

Relates to:
7050.0470 Subps. 1-9 (Classifications for surface waters in major drainage basins), and tables incorporated by reference in this section available on the MPCA website (e.g., https://www.pca.state.mn.us/sites/default/files/wq-s6-46h.pdf).

Hearing Exhibit D (SONAR) discussion at:
Appendix A, p. Appendix 30 [07040004-585]
Appendix A, p. Appendix 56-57 [07020007-525];
Appendix A, p. Appendix 63 [07020007-664];
Appendix A, p. Appendix 68-69 [07020007-688].

Summary of comments:
Several comments were received which expressed concerns about specific reaches that are proposed to be designated as Modified Use, the data used for the UAAs, or questioned designations for specific reaches listed in the beneficial use tables. Because the comments addressed specific stream reaches, the comments

and the MPCA's responses listed below are organized by each stream reach or group of associated stream reaches.

Specific comments and MPCA responses:

1. **Comment:** Concerns with the proposed Modified Use designation of 07020007-688, 07020007-525, 07020007-664, and 07040004-585. [Lenczewski, Callahan]

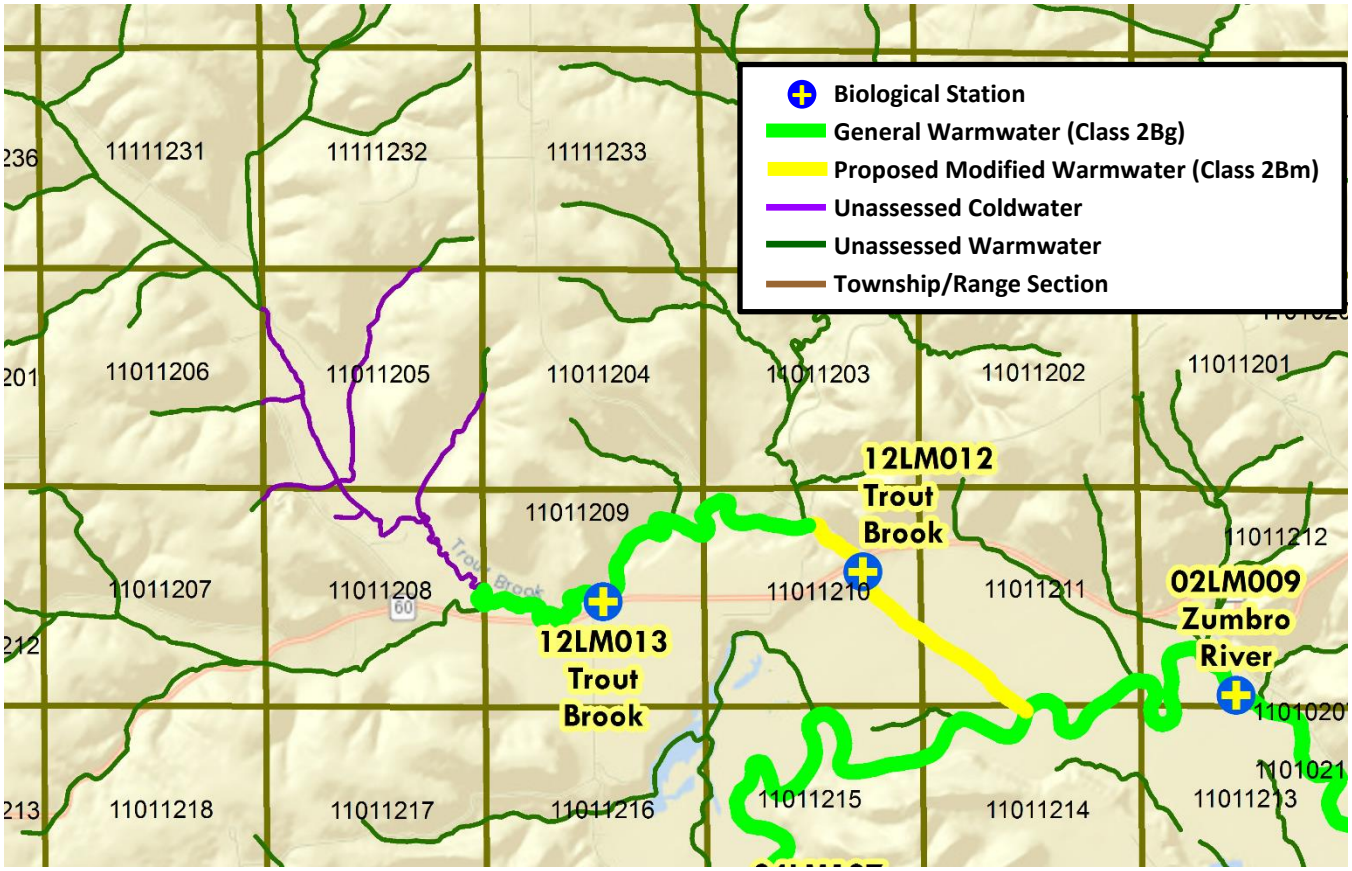
   MPCA Response:
   Fort Ridgely Creek and associated tributaries (07020007-525, 07020007-664, and 07020007-688): There are 3 reaches proposed for Modified Use designation upstream of the reach (Fort Ridgely Creek - 07020007-689) noted by the commenters. As noted by the commenter, the reach 07020007-689 is managed as a seasonal, put-and-take trout (rainbow and brown trout) fishery. However, due to habitat and temperature limitations there is no reproduction or year-to-year carryover of trout (meaning they do not survive through the summer months). This reach is not a designated trout water (Minn. R. § 6264.0050) or coldwater stream (Class 2A; Minn. R. § 7050.0470). There are currently no plans to change the designation of this water to a cold water reach due to the conditions which limit survival of trout.

   The commenter [Callahan] noted that the Minnesota River - Mankato Watershed Monitoring and Assessment Report (October 2016) listed some of the proposed Modified Use reaches upstream of 07020007-689 as supporting aquatic communities that meet the General Use (Class 2Bg) goals for aquatic life. However, this is not the case. The determination of support in this report is based on the Modified Use (Class 2Bm) goals, meaning that these reaches meet the Modified Use biological criteria, but not the General Use biological criteria. The MPCA cannot propose a Modified Use for reaches that meet the General Use for both fish and macroinvertebrates. As mentioned previously, Modified Use designations are supported by limitations to the biological communities are the result of habitat limitation and not other stressors. A review of chemical data collected from these stream reaches indicated that there was an occurrence of low dissolved oxygen in one reach. However, this corresponded with an impairment of the macroinvertebrate community (i.e., the macroinvertebrate community did not meet the Modified Use goals and was listed as impaired). This triggers a more in-depth stressor identification study and a report that will describe restoration recommendations (i.e., WRAPS). As a result, the Modified Use designations for these reaches are not expected to negatively impact the beneficial uses of the downstream reach (i.e., 07020007-689).

   In addition as noted by the commenter [Dan Callahan], Fort Ridgely Creek was misspelled in several locations (as "Ridgley") and will be corrected in the SONAR (Attachment 10) and in the MPCA waterbody databases.

   Trout Brook (07040004-585): This reach is proposed for designation as a Modified Use based on poor habitat which is limiting the fish communities. A detailed stressor identification study has been completed and also concluded that habitat was limiting the fish community and did not identify any other stressors. The stream reach upstream from 07040004-585, has been confirmed as General Use, but is currently designated a Class 2B (i.e., warmwater; see map below). Trout (brook trout) have been collected in this reach, but there are currently no plans to change the designation of this reach to coldwater. Regardless this is outside the scope of this rulemaking. Since the proposed Modified Use is

downstream of the designated trout waters and the reach is limited by habitat, it is not expected to negatively impact these waters.



Map of Trout Brook (07040004-585) and associated WIDs

2. **Comment:** Queries from the Agencies database indicate that there is not adequate information for assessment. Therefore there is not enough information to perform UAAs. [Harrington, Callahan]

   MPCA Response: The online database referenced by the commenters does not display the most up-to-date data. This information is based on the latest Impaired Waters List approved by the EPA. The last list approved by the EPA is the 2012 list, so these data are more than 4 years out of date. Recognizing this as an issue the Agency has begun a policy change that will update this database more regularly. This will make this information available to stakeholders in a more timely manner. However, for the reaches proposed for TALU designations as part of the TALU rule amendment, this information is contained in Appendix A of Hearing Exhibit D (SONAR). All of these reaches have sufficient data to perform the UAA and assessments.

3. **Comment:** "Colby Lake is a drinking water, so any water "within Colby Lake" should not have a lesser designation." [M. Johnson]

   MPCA Response: The listing of this WID in the St. Louis beneficial use table (https://www.pca.state.mn.us/sites/default/files/wq-s6-46c.pdf) is an error. This WID is an "Artificial

Flow Through Path" and it has no bearing on the designated uses for the lake. These artificial segments are needed to create continuity for the streams as they move other bodies of water. These "Artificial Flow Through Path" WIDs are intended to be eliminated the use tables and this WID will be removed.

J. Comments related to the proposed UAA process for designating Exceptional Uses

Relates to:
7050.0222, Subp. 2c. (Beneficial use definitions for cold water stream and river habitats (Class 2A));
7050.0222, Subp. 2d (Biological criteria for cold water stream and river habitats (Class 2A));
7050.0222, Subp. 3c (Beneficial use definitions for warm or cool water stream and river habitats (Class 2Bd));
7050.0222, Subp. 3d (Biological criteria for warm or cool water stream and river habitats (Class 2Bd));
7050.0222, Subp. 4c (Beneficial use definitions for warm or cool water stream and river habitats (Class 2B));
7050.0222, Subp. 4d (Biological criteria for warm or cool water stream and river habitats (Class 2B)).

Hearing Exhibit D (SONAR) discussion at:
Section 2.D.v., Implementation of TALU, pages 28-31;
Section 5.A.ii., Protecting high quality waters, pages 39-45;
Section 5.A.i., Incorporating numeric biological criteria directly into rule, pages 45-46;
Section 5. B., Proposed changes and specific reasonableness:
7050.0222, Subps. 2c, 3c, and 4c, page 59;
7050.0222, Subps. 2d, 3d, and 4d, page 59;
Other relevant documents: Exhibits S-11, S-63, S-84, S-85, and S-87; Hearing Exhibit L.6; Attachment 7.

Summary of comments:
Several comments were received relating to the proposed UAA process for designating Exceptional Uses. Because the comments were varied on this topic, specific comments are listed below followed by MPCA's response.

Specific comments and MPCA responses:

1. **Comment:** Some commenters suggested that the TALU rules create an improper presumption that streams not found to be "Exceptional" in a current assessment are not "Exceptional" existing uses. As a result, waters that attained the Exceptional Use on or after November 28, 1975, but which have been degraded below that goal before sampling would not be protected. [WaterLegacy, M. Johnson, Crawford et al.]

   MPCA Response: The proposed rule amendments are fully consistent with the CWA. There is a presumption that waters be protected to the interim goal of the CWA ("provides for the protection and propagation of fish, shellfish, and wildlife" (33 U.S.C. § 1251(a)(2)). However, the CWA does not provide a presumption for an Exceptional Use, and therefore, this use must be reasonably demonstrated. Currently, these determinations are made using fish and macroinvertebrate data along with supplemental information such as habitat, water chemistry, and land use data. However, at a minimum this currently requires sampling of both fish and macroinvertebrates using standard protocols (see

Attachments 3 and 4) and a demonstration that they meet or did meet these goals on or after November 28, 1975. Hypothetically, it is not unreasonable to designate an Exceptional Use using different information than is currently required and the proposed rule language does not preclude that. However, the MPCA has not encountered a case where such information was available and sufficient for an Exceptional Use designation. See Comment #2 in Item H for a more detailed response regarding data sufficiency for determining existing uses.

2. **Comment:** Several commenters suggested that some broad categories of waters should be designated as Exceptional Use including waters in the BWCA, Lake Superior, waters in Voyageurs National Park, scientific and natural areas, wilderness areas, wild river segments, and trout streams. [M. Johnson, WaterLegacy, Red River Watershed Management Board] Related to this were comments seeking clarification regarding the need to perform a UAA to designate Exceptional Use streams. [Neprash, WaterLegacy, M. Johnson]

   MPCA Response: The designation of an Exceptional Use requires sufficient data to demonstrate that it is an existing use (i.e., the data must demonstrate attainment of the biocriteria by both fish and macroinvertebrates). Although a UAA is not required by the CWA, a UAA-like process is needed (Attachment 7 [p. 5]; Exhibit S-63). The presumption of Exceptional Uses for these other broad categories of waters cannot on its own fulfill the demonstration of Exceptional attainment and to automatically designate them as such would result in assessment errors. The State of Ohio has experience with this where in the 1970s and 1980s Exceptional Uses were originally classified on a cultural basis and without a confirmation of biological status as Exceptional (Attachment 11). This has resulted in a correction process as biological data has become available via routine biological assessments. Other regulations and programs provide additional protection to these waters (antidegradation, general stormwater permits, etc.). However, conflating all ORVWs or natural scenic waters, for example, with the Exceptional Use does not recognize the differences in the programs.

3. **Comment:** One commenter asked for more guidance to define what Exceptional Use means in order to standardize its application. The commenter also felt the word "comparable" has little meaning in science. [M. Johnson]

   MPCA Response: The Exceptional Use is well defined in both rule and in the supporting documents. Specifically if stakeholders are interested in exactly what the Exceptional Use means biologically, they can reference Gerritsen et al. (2013) (L.6) for details. In this document Tables 5-13 transparently describe the rules for determining BCG levels. For example, to be considered a BCG Level 3, a fish sample in a Prairie River needs to have 11-16 species, 15-25% of the species need to be sensitive species (i.e., attribute 1, 2, and 3 species), individuals of the most numerous tolerant species (i.e., attribute 5a or 6a species) needs comprise less than 7-13% of the sample, etc. As described in the rule language, the biological criterion or threshold is based on the 75th percentile of IBI scores from a population of samples that score as BCG Level 3. As a result, Exceptional Use communities are represented by the 25% best sites in BCG Level 3 and most samples in BCG Levels 2 and 1. Although this can be somewhat confusing without a background in aquatic science and biological monitoring, the explicit details of what the Exceptional Use means and how it is measured is contained the TALU reference documents.

   The use of the term "comparable" mirrors the language accepted and used to defined biological integrity: "supporting and maintaining a balanced, integrated, adaptive community of organisms having

a composition and diversity comparable to that of the natural habitats of the region" (Exhibit S-11). It is also similar to the language used in Ohio's rule for establishing TALUs (Exhibit S-87).

4. **Comment:** One commenter stated there should be an effort to determine TALUs for trout waters and waters adjacent to Exceptional Use waters. [WaterLegacy]

   MPCA Response: The Agency does not disagree that efforts are needed to identify additional Exceptional Uses and that the classes of waters indicated by the commenter are a good suggestion. However, the monitoring efforts of the Agency are not unlimited and fulfil many roles so efforts to identify Exceptional Use waters will need to be balanced with these other goals.

K. Comments related to economic analysis, cost of compliance, and cost of implementation

Relates to:
7050.0222, Subp. 2c. (Beneficial use definitions for cold water stream and river habitats (Class 2A));
7050.0222, Subp. 2d (Biological criteria for cold water stream and river habitats (Class 2A));
7050.0222, Subp. 3c (Beneficial use definitions for warm or cool water stream and river habitats (Class 2Bd));
7050.0222, Subp. 3d (Biological criteria for warm or cool water stream and river habitats (Class 2Bd));
7050.0222, Subp. 4c (Beneficial use definitions for warm or cool water stream and river habitats (Class 2B));
7050.0222, Subp. 4d (Biological criteria for warm or cool water stream and river habitats (Class 2B)).

Hearing Exhibit D (SONAR) discussion at:
Section 4., Statutory authority, pages 37-39;
Section 5.A.iii., Setting goals for streams affected by human-induced legacy habitat alterations, pages 46-48;
Section 5. B., Proposed changes and specific reasonableness:
7050.0222, Subps. 2c, 3c, and 4c, page 59;
7050.0222, Subps. 2d, 3d, and 4d, page 59;
Section 6.A.i, Description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule, pages 62-63;
Section 6.A.ii, The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rules and any anticipated effect on state revenues, pages 63-64;
Section 6.A.vi, The probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals, page 66;
Section 6.C., Minn. Stat. 14.127, subds. 1 and 2, Cost of complying for small business or city, pages 71-73;
Section 8, Consideration of economic factors, pages 82-90;
Other relevant documents: Exhibit S-27.

Summary of comments:
Several commenters expressed concern about the sufficiency and accuracy of the MPCA's economic and cost analyses. Because the comments were varied on this topic, specific comments are listed below followed by MPCA's response.

Specific comments and MPCA responses:

1. **Comment:** One commenter expressed concern that the rules could hinder agricultural production. [Melberg]

   MPCA response: As discussed in Hearing Exhibit D (SONAR) sections 6 and 8, the Agency determined that the proposed TALU rule amendments should not result in new costs to agricultural producers. The proposed amendments provides more certainty for agricultural producers by setting appropriate goals for some waters maintained for drainage.

2. **Comment:** One commenter was concerned that considerable expense will be incurred to complete use attainability analyses. [Rice Creek Watershed District]

   MPCA response: As the MPCA stated at the rulemaking hearing, the cost of performing UAAs is largely borne by the MPCA (Hearing Exhibit D, SONAR [p. 64]), although the MPCA also encourages public input through stakeholder engagement (e.g., IWM planning meetings, PJG meetings) and rulemaking. The cost of conducting UAA's can be reasonably borne by the MPCA as evidenced by the 141 UAA's completed by the MPCA as part of this rulemaking effort.

3. **Comment:** One commenter suggested that cost savings or efficiencies could be obtained by not sampling ditches that are 100% man-made for the purpose of assessments. [Red River Management Board]

   MPCA response: Artificial or constructed ditches are "waters of the state" (Minn. Stat. § 115.01, subd. 22) and they are part of the framework of aquatic systems in Minnesota (see Hearing Exhibit D, SONAR and Exhibit S-27 for extensive discussions on this topic). It is important and reasonable to manage man-made ditches to protect the aquatic life that utilize these habitats, as well as the beneficial uses downstream. The analysis of costs to be incurred by the MPCA included in Hearing Exhibit D (SONAR) on pages 63 through 64 assumes that sampling of waters of the state include both natural and man-made waters.

4. **Comment:** One commenter asked how might an Exceptional Use designation affect a city with an MS4 permit; and whether it is possible to develop and urbanize a land area and still maintain an Exceptional Use? [Neprash]

   MPCA response: In preparing the response to this comment, the MPCA discovered an error in the economic analyses provided in Hearing Exhibit D (SONAR) on page 85. The analysis is characterized as being for MS4 cities. The analysis inadvertently pulled database information on individual stormwater NPDES permits, and did not pull information on MS4 cities. The analysis was accurate for individual stormwater NPDES permits (i.e., no expected impact because most permittees do not have offsite discharge under normal runoff events; and any current discharge is supporting the Exceptional Use) and will be corrected in Hearing Exhibit D (SONAR) (see Attachment 10).

   During the post-hearing comment period, the MPCA conducted additional analysis using the MS4 city database. The additional analysis did not identify any MS4 permits within a mile of any waters being proposed as Exceptional Uses as part of this rule. The additional analysis did identify four MS4 permits

that are within a mile of waters that have the potential to be designated as Exceptional Uses in future rulemakings, but which are not being proposed for designation in the current rulemaking.

The intent of both analyses was to use all available data to identify potential long-term economic effects of the TALU framework. The result of both analyses is consistent with the conclusion noted in Hearing Exhibit D (SONAR) on page 85; that no permits are expected to be impacted by the reaches being designated as Exceptional Use as part of this rule amendment.

Since the Agency has not identified any MS4s that would be impacted by proposed Exceptional Use designation in the current rulemaking, the commenter's question is only forward looking and the answer, by necessity, is speculative. The question becomes how might a city with an MS4 permit be affected if a stream reach within one mile of an MS4 permit is designated through a future rulemaking as Exceptional Use? The process to protect an Exceptional Use in a situation where an MS4 city may impact the use, would be similar to that described for NPDES permits (see Hearing Exhibit D, SONAR [pp. 87-88]). This involves determining if the activity will increase pollution to the Exceptional Use and determine if those levels would result in the loss of the use. If there is a risk to the beneficial use based on this analysis, the result would be to develop plans to avoid impact or to implement BMPs that prevent the loss of the Exceptional Use. In cases where the loss of the Exceptional Use occurs, restoration of the stream would be the first option, although stream mitigation could also be considered as an option. It is very important to note that the four potential Exceptional Use streams that are within one mile of an MS4 city are all Class 1B (i.e., drinking water) and Class 2A (i.e., coldwater) streams. That means the potential future Exception Use streams already receive increased protection under these classifications, regardless of a future potential TALU classification. So, the nearby cities should already be aware of these classifications and be planning for protection of these streams if urban expansion is anticipated.

L. Comments related to public participation

Relates to:
Structure and language of entire rule.

Hearing Exhibit D (SONAR) discussion at:
Section 1.A., Summary of proposed amendments, page 15;
Section 1.B., Statement of general need, pages 17-18;
Section 2.D.v., Implementation of TALU, page 29;
Section 3., Public participation and stakeholder involvement, pages 31-37;
Section 2.D.v., Implementation of TALU, page 29;
Section 5.A.iv., Removing Class 2C, page 48;
Section 5.A.v., Updating the structure of 7050.0470, page 50;
Section 5.A.vi., Designating more accurate aquatic life uses for selected streams, page 51;
Section 5. B., Proposed changes and specific reasonableness:
7050.0470, Subps. 1-9, page 61;
Section 6.A.ii., The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rules and any anticipated effect on state revenues, page p. 64;

Section 6.C., Minn. Stat. 14.127, subds. 1 and 2, Cost of complying for small business or city, pages 72-73;
Section F., Environmental justice policy, pages 74-79;
Section 8., Consideration of economic factors, page 83;
Section 8.B.ii., Permitted dischargers, pages 85-86;
Appendix A, Specific Use changes, pages Appendix 1-84;
Other relevant documents: Exhibits S-7 and S-63; Hearing Exhibit F.1.

Summary of comments:
Several comments were related to the sufficiency and extent of public participation during the development of the TALU rule. Other comments related to suggestions for expanded public participation during the implementation of the TALU rule. Specific comments and MPCA's responses are included below.

Specific comments and MPCA responses:

1. **Comment:** Several commenters felt that stakeholders did not have sufficient time nor sufficient access to review the technical support documents, the proposed rule, or the proposed use designations. Several commenters suggested improvement to the process for reviewing and changing classifications, asking that stakeholders be included before the formal rulemaking, and that proposals for Modified Uses be noticed more widely. [Harrington, Callahan, Lenczewski, M. Johnson, Schmalz]

   MPCA Response: The MPCA provided information throughout an extended public outreach period with stakeholders starting back in 2009 (Hearing Exhibit D, SONAR [pp. 31-37]). The goal of these interactions were to not only make stakeholders aware of the TALU framework and to receive feedback on the rule as it was being developed, but also to receive feedback on technical support documents. As a result, these supporting documents were available years (1-3 years depending on the document) before the rules were proposed. During stakeholder meetings, the MPCA routinely directed stakeholders to the TALU webpage and the documentation contained on that page in addition to requesting feedback from stakeholders on these materials. The public participation process was met and exceeded the APA requirements.

   Some commenters suggested ways to improve the documentation for the UAAs (e.g., providing raw IBI scores and biological criteria in tables) and the MPCA will consider these to improve communication with stakeholders.

   Use designations are required to be listed in rule by Minn. R. § 7050.0470 (Waters specifically classified; Explanation of listings in part 7050.0470); and any use designation requires a rulemaking to change the classification in Minn. R. § 7050.0470 (Classifications for surface waters in major drainage basins). The Agency followed all required steps as part of the APA for designating uses and exceeded them in some cases. The MPCA made the draft list of proposed use designations contained in this rule amendment available to the public on the Agency's website in June 2016 and actively encouraged review and comment. Future use designation proposals will also undergo a formal rulemaking along with the required public participation. In future rulemakings the MPCA will, as it always does, request and encourage public participation in the rulemaking process. The commenter's suggestion is noted and the Agency will consider reasonable proposals for improving the public process.

2. **Comment:** One commenter suggested that the MPCA consider how the TALU classifications will be used by other entities in their planning efforts. For example, other entities may develop more and improved best management practices (BMPs) to address non-point source pollutants. The commenter also expressed concern that resources from these other entities are likely to be focused on areas that are not categorized as Modified Use. [Lenczewski]

   MPCA Response: The Agency expects the TALU framework will provide benefits and prove to be useful for entities beyond the MPCA. The outcome of the TALU framework and biological monitoring in Minnesota in general will result in better BMPs. However, the Agency does not agree that the Modified Use designation necessarily means that these systems will be ignored, nor that resources will be directed elsewhere. By setting appropriate and attainable goals, the work that is needed to restore or protect Modified Use waters can be better targeted and is more likely to succeed. Over time as protection and restoration methods improve the goals for Modified Use waters can shift to match available technologies.

3. **Comment:** One commenter felt the process used to assess waters and designate their use does not involve sufficient public input especially from local partners. [Red River Watershed Management Board]

   MPCA Response: One of the first steps in the monitoring of watersheds involves engagement with local partners in IWM planning meetings to determine the sampling framework (i.e., where will sampling station be located and what parameters will be sampled). Local partners are also involved in the use designation and assessment of waters (e.g., PJG meetings, impaired water list comment period, and use designation rulemaking). The Agency is also interested in receiving feedback from stakeholders on rulemakings, including use designation rulemakings, and reasonably involves public stakeholders in these efforts.

4. **Comment:** One commenter asserted that TALU rulemaking process may violate the public participation requirements of the CWA. [Minnesota Environmental Science and Economic Review Board]

   MPCA Response: Revised regulations governing state adoption of water quality standards (WQS) took effect on October 20, 2015, including changes to 40 C.F.R. § 131.20 defining the state process for adoption of WQS. Many of the federal requirements are similar to requirements of the Minnesota APA. The federal law includes requirements that exceed the Minnesota Administrative Procedure Act (APA) hearing process in several ways, including: a 45-day public notice in advance of a hearing; and a record of the hearing made available to requesters at cost. The MPCA was aware of, and has satisfied, these additional federal requirements. The notice of hearing for this rulemaking included a 45-day notice period and all documents and data were made available throughout the notice period. A public hearing was held on February 16, 2017, and a transcript was made of the hearing and posted for free download by any person on the Agency's website within 10 days after the hearing. Paper copies of the transcript will be made available to any requester at cost.

5. **Comment:** Multiple commenters made the identical claim that the proposed use designations were not properly noticed, because the public notice for the proposed TALU rules did not say that any

water bodies would be downgraded if the rules were approved, let alone more than 100 waters. [Crawford et al., WaterLegacy, M. Johnson]

MPCA Response: The proposed use designations were properly noticed and met all APA requirements for rulemakings. The dual notice published in the *State Register* on December 19, 2016, contained the following information on page 662 (the third full page of the notice):

> **"1. 141 stream reaches will be reclassified based on 2012 and 2013 Intensive Watershed Monitoring (IWM) efforts in 14 watersheds.** The MPCA is proposing to reclassify specific streams using the TALU framework, where existing intensive monitoring data have demonstrated the need for a more accurate use designation. Based on monitoring data from fourteen (8-digit Hydrological Unit Code) watersheds representing the 2012 and 2013 IWM efforts, the MPCA is proposing to reclassify 141 stream reaches from the existing General Use to either Exceptional or Modified Use. The MPCA anticipates that future TALU reclassifications will occur annually following the IWM schedule."

This information provided in the notice as published satisfies the content requirements of Minn. R. § 1400.2080.

In support of the published notice, the SONAR was made available on the same date and the published notice directed interested persons to the SONAR for more comprehensive information. The SONAR contains detailed information on the reclassifications.

6. **Comment:** One commenter suggested that while the SONAR described the MPCA's efforts to address environmental justice issues, it did not seek the advice of the MPCA's Environmental Justice Advisory Committee, which was formed in mid-2016. [M. Johnson]

   MPCA Response: The Environmental Justice Advisory Committee did not meet for the first time until October 28, 2016. By this point, the analyses in the SONAR were significantly complete so there was no opportunity to involve the Environmental Justice Advisory Committee in these analyses.