Minnesota Pollution Control Agency

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January 27, 2016

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Re: In the Matter of the Proposed Revisions of the Minnesota Rules ch. 7050, relating to Nondegradation and minor supporting changes to Minnesota Rules chs.7001 and 7052

Dear Librarian:

The Minnesota Pollution Control Agency (MPCA) intends to adopt amendments to the state water quality standards governing nondegradation. We plan to publish a Notice of Hearing in the February 1, 2016 *State Register*.

The MPCA has prepared a Statement of Need and Reasonableness. As required by *Minnesota Statutes,* sections 14.131 and 14.23, the MPCA is sending the Library an electronic copy of the Statement of Need and Reasonableness at the same time we are mailing our Notice of Hearing.

If you have any questions, please contact me at 651-757-2597.

Sincerely

Carol Nankivel

Carol Nankivel
Rule Coordinator
Agency Rules Unit
Resource Management & Assistance Division

CN:jlr

Enclosure: Statement of Need and Reasonableness

Minnesota Pollution Control Agency

Environmental Analysis and Outcomes Division

STATEMENT OF NEED AND REASONABLENESS

In the Matter of Proposed Revisions of Minnesota Rules ch.7050, Relating to Nondegradation and minor supporting changes to Minnesota Rules chs. 7052 and 7001

Repeal of Minnesota Rules 7050.0180 (Nondegradation for Outstanding Resource Value Waters) and Minnesota Rules 7050.0185 (Nondegradation for All Waters);

Proposed Addition of New Rules, Minnesota Rules 7050.0250 through 7050.0335 (Antidegradation)

wq-rule3-60d

Revisor No.: 4030
OAH # 19-2200-32243

Availability of Rulemaking Documents

Upon request, this Statement of Need and Reasonableness (SONAR) can be made available in an alternative format, such as large print, Braille, or audio.

To make a request, contact Carol Nankivel at the Minnesota Pollution Control Agency (MPCA), Resource Management and Assistance Division, 520 Lafayette Road North, St. Paul, MN 55155-4194; telephone 651-757-2597; or e-mail carol.nankivel@state.mn.us. TTY users may call the MPCA at 651-282-5332 or 800-657-3864.

The MPCA will make the *State Register* notice and the proposed rule available during the public comment period on the MPCA's Public Notices website:

https://www.pca.state.mn.us/public-notices

Notice Regarding the Excerpted Language in this SONAR

The MPCA has excerpted language from the proposed rules and included those excerpts in this SONAR. However, there may be slight discrepancies between the excerpted language and the rules as they are proposed. The MPCA intends that the rule language that is published in the *State Register* at the time the rules are formally proposed is the rule language that is justified in this SONAR.

Notice Regarding Hyperlinked Documents

Throughout this SONAR the MPCA has provided, for the convenience of the reader, links to webpages where cited documents can be viewed. However, because of the transient nature of web pages, the links to webpages are not the official citation. The MPCA intends that the documents submitted into the rulemaking record are the print copies of the documents identified in the list of Exhibits.

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Acronyms or abbreviations

Army Corp of Engineers	ACE
Administrative Rules of South Dakota	ARSD
Bioaccumulative chemical of concern	BCC
Best management practice	BMP
Biochemical oxygen demand	BOD
Chapter	Ch.
Clean Water Act (i.e., Federal Water Pollution Control Act, 33 U.S.C. § 1251 et seq (Clean Water Act) (1972, as amended)	CWA
Code of Federal Regulations	CFR
Environmental Impact Statement	EIS
Environmental Protection Agency	EPA
Hydrologic Unit Code	HUC
Illinois	IL
Indiana	IN
Indices of Biological Integrity	IBI
Iowa	IA
Low impact development	LID
Maximum extent practicable	MEP
Michigan	MI
milligrams per liter	mg/L
Minimal impact design standards	MIDS
Minnesota	MN
Minnesota Board of Water and Soil Resources	MBWSR
Minnesota Center for Environmental Advocacy	MCEA
Minnesota Code of Administrative Rules	MCAR
Minnesota Department of Agriculture	MDA
Minnesota Department of Health	MDH
Minnesota Department of Natural Resources	MDNR
Minnesota Pollution Control Agency	MPCA
Minnesota Rule	Minn. R.
Minnesota Statute	Minn. Stat.
Municipal separate storm sewer system	MS4
National Pollutant Discharge Elimination System	NPDES
North Dakota	ND
Ohio	OH
Outstanding national resource water	ONRW
Outstanding resource value water	ORVW
Overriding public interest	OPI
Public Facilities Authority	PFA
Public Interest Review	PIR
Request for comment	RFC
Scientific and natural areas	SNA
Statement of Need and Reasonableness	SONAR
Subdivision	Subd.

Subpart	Subp.
Total maximum daily load	TMDL
Total Phosphorus	TP
Total Suspended Solids	TSS
United States Code	U.S.C.
Wisconsin	WI
Water Pollution Control (Minnesota Regulations)	WPC
Wastewater treatment plant	WWTP

1. Introduction

A. Executive summary

The objective of the Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." In order to achieve this objective states and authorized tribes develop water quality standards that consist of three elements:

- designated beneficial uses establish water quality goals;
- water quality criteria define the minimum conditions necessary to achieve the goals;
- antidegradation policies specify the framework used in making decisions regarding changes in water quality

Federal regulations require states and authorized tribes to adopt antidegradation policies and develop implementation methods that, at a minimum, reflect federal policy found in 40 CFR § 131.12. The policy specifies three levels, or Tiers, of protection.

- Tier 1 requires existing uses and the water quality necessary to support those uses to be maintained and protected. Existing uses are those that actually occurred on or after November 28, 1975.
- Tier 2 protects high water quality which is the quality that exceeds levels necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water. High water quality may be lowered only when:
  - it is necessary (Can degradation reasonably be avoided or minimized?);
  - it is important (Do the economic or social benefits outweigh the lowering of water quality?);
  - there is assurance that the highest statutory and regulatory requirements for point sources and best management practices (BMPs) for non-point sources are achieved;
  - there is an opportunity for public participation and intergovernmental cooperation in decisions to lower high water quality

  This Tier provides for the protection of existing water quality, not just the designated beneficial use.
- Tier 3 requires the maintenance and protection of water quality necessary to preserve specific water resources of outstanding value.

Antidegradation requirements are generally implemented through the issuance and enforcement of water quality control documents (e.g., National Pollution Discharge Elimination System (NPDES) permits), 401 certifications of federal licenses and permits).

The Minnesota Pollution Control Agency (MPCA) proposes replacing the existing nondegradation rules found in Minnesota Rules Chapter (Minn. R. ch.) 7050 with new antidegradation[1] rules. The last major revisions to these rules were made in 1988. Since that

[1] "*Nondegradation*" is the term currently used in the state rules, MPCA permits and guidance documents. However, the federal equivalent of "*nondegradation*" is "*antidegradation*" and in this rulemaking, MPCA is transitioning to the use of this term. In this Statement of Need and Reasonableness (SONAR) the MPCA will refer to "*antidegradation*" except where it is making a specific reference to nondegradation in the existing rules, permits and guidance. The need and reasonableness of the proposed change in terms is addressed in Section 5.

time, there have been significant changes to federal water quality regulations and Environmental Protection Agency (EPA) guidance regarding the implementation of antidegradation policy. In addition, the ability to accurately assess water quality and implement effective pollution controls has significantly improved since the last major rule revision.

The proposed rules:

- provide procedures for activities subject to antidegradation requirements
- clarify the information needed of applicants and sequence of MPCA actions taken to make antidegradation determinations
- identify the factors the MPCA considers in conducting reviews
- establish a process for determining the water quality baseline
- provide a framework to protect high quality waters
- meet federal antidegradation regulations

The proposed rules do not:

- expand the scope of activities currently subject to the nondegradation rules
- create new regulatory authority where it did not previously exist
- alter, other than housekeeping changes, nondegradation provisions found in Minn. R. ch. 7052 (Lake Superior Basin Water Standards) or Minn. R. ch. 7060 (Underground Waters)

The proposed rules provide the following improvements:

1. **Definitions of important terms**

   The proposed rules define key terms to provide greater clarity, not only for the rules themselves but also their subsequent implementation.

2. **Two sets of antidegradation standards**

   The proposed rules contain two sets of antidegradation standards described below.

   Standards when changes in existing water quality are reasonably quantifiable
   The types of activities subject to these standards include individual wastewater, industrial stormwater and construction stormwater NPDES permits, and activities requiring CWA section 401 certifications for individual federal licenses and permits. Each of these control documents regulates activities that have the potential to affect individual or a limited number of surface waters, the identity of which are known at the time the activity is proposed.

   Standards when changes in existing water quality are not reasonably quantifiable
   The types of activities subject to these standards include individual NPDES permits for municipal stormwater activities and general authorizations (i.e., general NPDES permits and CWA section 401 certifications of general federal licenses and permits). These types of activities may affect numerous surface waters, the identity of which are not known when the control document is issued.

Each set of standards meet the federal regulatory requirements for:

- the maintenance and protection of existing uses;
- unnecessary degradation of high water quality;
- maintenance and protection of outstanding resources (i.e., outstanding resource value waters (ORVWs));
- protection against potential water quality impairments associated with thermal discharges

3. Change in baseline date for measuring increased loading to high water quality

The current rules' baseline date for increased loading to non-ORVWs is January 1, 1988. The proposed rules' baseline date for loadings to high water quality (other than for water quality necessary to maintain exceptional ORVW characteristics[2]) is the effective date of the most-recently issued control document[3]. This is reasonable because the MPCA may make antidegradation determinations that allow for limited degradation deemed necessary to accommodate important economic or social development. The proposed rules ensure that entities interested in these determinations are allowed to participate in the decision to lower high water quality and that beneficial uses are fully protected.

4. Implementation procedures specific to regulated activities subject to antidegradation requirements

The process for issuing control documents is the mechanism through which antidegradation requirements are implemented. Because the activities to which antidegradation requirements apply vary, the proposed rules include implementation procedures for specific types of control documents. The implementation procedures clearly define the roles and responsibilities of the MPCA, the regulated community, and the public or other regulatory agencies interested in water quality protection.

5. Exemptions from procedures

The proposed rules provide exemptions from antidegradation procedures for activities impacting Class 7 waters and for temporary and limited impacts.

6. Removal of the significance threshold

Under the current rules, nondegradation review for discharges to waters other than ORVWs is only required for new or expanded significant discharges. Significant discharges are those that would 1) increase flow rates to waters (other than Class 7 waters) by greater than 200,000 gallons per day or 2) increase the concentration of a toxic pollutant to a level greater than 1% over that consistently attained by January 1, 1988. As explained in greater detail in Section 4.B.3., these significance tests are inadequate because they are not based on the consumption of assimilative capacity. The proposed rules do not contain any significance thresholds as a basis for determining the need for antidegradation review for reasons described in Section 5.G.1.

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[2] The baseline date necessary to maintain exceptional ORVW characteristics remains the date that the ORVW was designated. The proposed rules allow modifying that baseline to reflect decreased loadings.

[3] Control documents are authorizations issued by the MPCA commissioner that specify water pollution control conditions under which regulated activities are allowed to operate.

To ensure the proposed rules' reasonableness and subsequent effectiveness, the MPCA has:

- Extensively sought input from stakeholders including the regulated community, other regulatory agencies, including Region 5 of the EPA, and the public (Attachment 1 provides a list of meetings with and communications to interested parties regarding the rulemaking).
- Considered implementation issues with various internal permitting programs.
- Reviewed other states' antidegradation rules and implementation procedures.
- Reviewed court rulings, both in Minnesota and throughout the nation.

The results of these efforts are proposed rules that clearly align with the federal antidegradation regulatory requirements, and provide fair and transparent implementation procedures for regulated activities subject to water quality standards, including antidegradation requirements. Adoption and implementation of the proposed rules will reduce the risk of project delays and associated costs due to permitting delays or legal challenges. Most importantly, the proposed rules will benefit Minnesotans by providing a balanced approach for the protection of water quality and sustainable economic development.

B. Statement of need and reasonableness content

Minnesota's rulemaking process requires the MPCA to explain the facts establishing the need for and reasonableness of the rules being proposed, and to address specific procedural requirements. In this Statement of Need and Reasonableness (SONAR), the MPCA is making its affirmative presentation of facts on the need for and reasonableness of the proposed rules. The SONAR also provides the MPCA's documentation of how it has met the procedural requirements up to this point in rulemaking.

This SONAR is arranged so that the discussion of the need for and reasonableness of the proposed rules is presented first, followed by the discussion of how the MPCA has met the requirements of relevant Minnesota statutes and policies.

Referenced sources used in the development of the proposed rules and information that the MPCA considers to be especially pertinent to the proposed rules are identified as exhibits and listed in Section 11. Referenced current Minnesota Statutes (Minn. Stat.) and Minn. R. are not listed as exhibits because they are readily available. The following statutes and rules are the exception and are listed as exhibits because of their importance to this rulemaking.

- Minn. Stat. § 115.03 and Minn. Stat. § 115.44 are cited as exhibits because of their importance in providing the MPCA the statutory authority to conduct this rulemaking.
- Minn. R. 7050.0180 and Minn. R. 7050.0185 are cited as exhibits because of their importance as current rules proposed to be repealed.

  The following documents are referenced extensively throughout the SONAR. The exhibit number for each document is found only the first time it is referenced. This was done for ease of reading.
- Minn. R. 7050.0180 (Nondegradation for outstanding resource value waters.) (Exhibit 2)
- Minn. R. 7050.0185 (Nondegradation for all waters.) (Exhibit 3)

- Federal Water Pollution Control Act, 33 U.S.C. § 1251 (Clean Water Act section 101) (1972, as amended) (Exhibit 12)
- Advanced Notice of Proposed Rulemaking, 63 Fed. Reg. 36741 (1998) (Exhibit 14)
- 40 Code of Federal Regulations (CFR) § 131.12 (Antidegradation policy and implementation methods) (Exhibit 20)
- Water Quality Standards Handbook, Second Edition, Chapter 4, U.S. EPA (1994), (Exhibit 21)
- Federal Water Pollution Control Act, 33 U.S.C. § 1342 (CWA section 402) (1972, as amended) (Exhibit 61)
- Federal Water Pollution Control Act, 33 U.S.C. § 1341 (CWA section 401) (1972, as amended) (Exhibit 62)
- Federal Water Pollution Control Act, 33 U.S.C. § 1344 (CWA section 404) (1972, as amended) (Exhibit 69)

Supplemental supporting information is presented as attachments at the end of the SONAR. Exhibits and attachments are also available to the public on the MPCA's nondegradation webpage (http://www.pca.state.mn.us/index.php/water/water-permits-and-rules/water-rulemaking/nondegradation-rulemaking.html).

C. Rule development history

1. Early stages

Initial consideration of this rulemaking began in 2002 when the Minnesota Court of Appeals remanded the NPDES general permit for Municipal Separate Storm Sewer Systems (MS4s) to the MPCA to address nondegradation issues. The MPCA addressed the court's concerns and issued a revised general permit in 2006. In 2007, the MPCA received a petition for rulemaking (Exhibit 1)[1] identifying concerns with the state's existing nondegradation rules (Minn. R. 7050.0180 (Exhibit 2)[2] and Minn. R. 7050.0185 (Exhibit 3)[3]) and requesting that the MPCA conduct rulemaking to address those concerns. The MPCA contracted with the consulting firm Tetra Tech, Inc. (Pasadena, California) to assist with developing background information for the rulemaking. To this end, Tetra Tech, Inc. provided the following three memorandums:

- Technical Memorandum #1: Nondegradation Loading Assessment Evaluation and Recommendations for Selected Municipal Separate Storm Sewer Systems, Tetra Tech, Inc. (August 20, 2007) (Exhibit 4)[4];
- Technical Memorandum #2: Overview of State, Federal, and Judicial Guidance on Antidegradation, Tetra Tech, Inc. (August 20, 2007) (Exhibit 5)[5];
- Technical Memorandum # 3: Recommendations for Nondegradation Rulemaking, Tetra Tech, Inc. (August 20, 2007) (Exhibit 6)[6].

2. Stakeholder engagement

Following the completion of that contract, the MPCA conducted an extensive, year-long (June, 2008 to June, 2009) series of stakeholder meetings to obtain broad input on a number of fundamental topics relating to antidegradation. Those stakeholder meetings included participation from industry, agriculture, environmental interests and representatives of federal, state and local government and were essential in the

development of the proposed rules. The MPCA responded to questions raised in these meetings by posting a response entitled Responses to Questions Raised in the Written Comments Received from Stakeholders Attending the Nondegradation Rulemaking Stakeholder Meetings, MPCA (2009) (Exhibit 7)[7] on October 6, 2009 on the MPCA's antidegradation webpage. Following the initial round of stakeholder meetings, the MPCA continued its dialogue with external stakeholders, internal programs, and state and federal agencies. On July 13, 2010, the MPCA posted a document entitled Proposed Antidegradation Rule and Implementation Changes, MPCA (2010) (Exhibit 8)[8] on the rulemaking webpage. Interested parties were invited to review and comment on this document, which provided an outline of MPCA's intentions regarding specific issues related to antidegradation. Subsequently two draft rules – Draft Antidegradation Rule, MPCA (2011) (Exhibit 9)[9] and Proposed Permanent Rules Relating to Antidegradation of State Waters, MPCA (2012) (Exhibit 10)[10] – were posted on the rulemaking webpage in May, 2011, and September, 2012, respectively. Again, interested parties were invited to comment and the MPCA revised the rules in response. Draft Proposed Antidegradation Rules, 6/02/2014 (Exhibit 11)[11], which are very similar to those published for comment in the *State Register*, were posted on the rulemaking webpage on June 2, 2014.

2. Background

To provide context to the proposed rules it is important to have a basic understanding of antidegradation policy and its history in Minnesota Rules.

A. What is antidegradation policy?

The objective of the Clean Water Act (CWA) is to "*restore and maintain the chemical, physical, and biological integrity of the Nation's waters.*" Federal Water Pollution Control Act, 33 U.S.C. § 1251 (CWA section 101(a)) (Exhibit 12)[12]. In order to achieve this objective, section 303 of the CWA (Exhibit 13)[13] requires states and authorized tribes to develop water quality standards. Water quality standards consist of three basic elements: designated beneficial uses, criteria necessary to meet those uses and antidegradation policy. As described by the EPA:

> *Designated uses establish the water quality goals for the water body, water quality criteria define the minimum conditions necessary to achieve the goals and the antidegradation policy specifies the framework to be used in making decisions regarding changes in water quality.* Advanced Notice of Proposed Rulemaking, 63 Fed. Reg. 36741 (1998) (Exhibit 14)[14], pp. 36779-80 (emphasis added)

The federal antidegradation policy has its roots in the Water Quality Act of 1965, which stated in its declaration of policy:

> *The purpose of this Act is to enhance the quality and value of our water resources and to establish national policy for the* ***prevention****, control, and abatement of water pollution.* Public Law 89-234 (1965) (Exhibit 15)[15], (emphasis added)

The Secretary for the Department of the Interior, Stewart Udall, further defined federal antidegradation policy in 1968 by stating that the water quality standards of each state were to include a statement similar to the following:

> *Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at their existing high quality. These and other waters of a State will not be lowered in water quality unless and until it has been affirmatively demonstrated to the State water pollution control agency and the Department of the Interior that such change is justifiable as a result of necessary economic or social development and will not interfere with or become injurious to any assigned uses made of, or presently possible in, such waters. This will require that any industrial, public or private project or development which would constitute a new source of pollution or an increased source of pollution to high quality waters will be required, as part of the initial project design, to provide the highest and best degree of waste treatment available under existing technology, and, since these are also Federal standards, these waste treatment requirements will be developed cooperatively.* Compendium of Department of the Interior Statements on Non-degradation of Interstate Waters, U.S. Department of the Interior, Federal Water Pollution Control Administration, Office of the Secretary, 1968, pp. 1-2 (Exhibit 16)[16]

In 1975, the EPA promulgated its first water quality standards regulations in the *Federal Register* (Exhibit 17)[17]. These standards, codified at 40 CFR § 130.17 (Exhibit 18)[18] in 1976, required states to develop and adopt antidegradation policy and identify implementation procedures. The federal antidegradation policy was refined and re-promulgated in 1983 (Exhibit 19)[19] and later in 2015 to its current form:

> *(a) The State shall develop and adopt a statewide antidegradation policy. The antidegradation policy shall, at a minimum, be consistent with the following:*
>
> *(1) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.*
>
> *(2) Where the quality of the waters exceeds levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.*

(i) The State may identify waters for the protections described in paragraph (a)(2) of this section on a parameter-by-parameter basis or on a water body-by-water body basis. Where the State identifies waters for antidegradation protection on a water body-by-water body basis, the State shall provide an opportunity for public involvement in any decisions about whether the protections described in paragraph (a)(2) of this section will be afforded to a water body, and the factors considered when making those decisions. Further, the State shall not exclude a water body from the protections described in paragraph (a)(2) of this section solely because water quality does not exceed levels necessary to support all of the uses specified in section 101(a)(2) of the Act.

(ii) Before allowing any lowering of high water quality, pursuant to paragraph (a)(2) of this section, the State shall find, after an analysis of alternatives, that such a lowering is necessary to accommodate important economic or social development in the area in which the waters are located. The analysis of alternatives shall evaluate a range of practicable alternatives that would prevent or lessen the degradation associated with the proposed activity. When the analysis of alternatives identifies one or more practicable alternatives, the State shall only find that a lowering is necessary if one such alternative is selected for implementation.

(3) Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

(4) In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with section 316 of the Act.

(b) The State shall develop methods for implementing the antidegradation policy that are, at a minimum, consistent with the State's policy and with paragraph (a) of this section. The State shall provide an opportunity for public involvement during the development and any subsequent revisions of the implementation methods, and shall make the methods available to the public. 40 CFR § 131.12 (Exhibit 20)[20]

The first three elements of the federal antidegradation regulations (i.e., 40 CFR § 131.12(a)(1), 131.12(a)(2) and 131.12(a)(3)) are referred to as the three levels or Tiers of antidegradation protection.[4] Briefly:

- Tier 1 protection requires the maintenance of existing uses;

[4] These Tiers are often referenced in the remaining text of the SONAR as Tier 1, Tier 2 and Tier 3.

- Tier 2 protection prohibits the lowering of high water quality unless specific conditions are met;
- Tier 3 protection requires the water quality of outstanding resource waters to be maintained

In regards to Tier 2 protection, EPA guidance states:

> *Antidegradation is not a "no growth" rule and was never designed or intended to be such. It is a policy that allows public decisions to be made on important environmental actions. Where the State intends to provide for development, it may decide under this section, after satisfying the requirements for intergovernmental coordination and public participation, that some lowering of water quality in "high-quality waters" is necessary to accommodate important economic or social development.* Water Quality Standards Handbook, Second Edition, Chapter 4, U.S. EPA (1994), pp. 7-8 (Exhibit 21)[21]

To summarize, antidegradation provisions are a decision-making process a state or authorized tribe uses to determine whether and to what extent water quality may be lowered. The EPA succinctly describes antidegradation this way:

> *Antidegradation plays a critical role in allowing States and Tribes to maintain and protect the finite public resource of clean water and ensure that decisions to allow reductions in water quality are made in a public manner and serve the public good.* Advanced Notice of Proposed Rulemaking, 63 Fed. Reg. 36741 (1998), p. 36780

B. History of Minnesota's nondegradation rules

Minnesota's first water quality standards were adopted into Water Pollution Control (WPC) regulations (WPC 1 (Exhibit 22)[22], WPC 2 (Exhibit 23)[23] and WPC 3 (Exhibit 24)[24]) in 1963 to protect segments of the Mississippi River and associated tributaries. Between 1963 and 1966, additional water quality standards were adopted to protect other individual water bodies. The first state-wide water quality standards protecting intrastate waters and interstate waters were adopted into rule in 1967 (WPC 14 (Exhibit 25)[25] and WPC 15 (Exhibits 26[26] and 27[27]), respectively).

Although not entitled "nondegradation," nondegradation-like policy language first appeared in rules governing intrastate waters in 1969:

> *Waters which are of quality better than the established standards will be maintained at high quality unless a determination is made by the State that a change is justifiable as a result of necessary economic or social development and will not preclude appropriate beneficial present and future uses of the waters. Any project or development which would constitute a source of pollution to high quality waters will be required to provide the highest and best practicable treatment to maintain high water quality and keep water pollution at a minimum. In implementing this policy, the Secretary of the Interior will be provided with such information as he requires to discharge his responsibilities under the Federal Water Quality Act, as amended.* WPC 15(a)(4) (1969, Supplement) (Exhibit 27)

In 1973, WPC 14 and WPC 15 were amended to include identical nondegradation policies in state-wide water quality standards:

> ***Non-Degradation.*** *Waters which are of quality better than the established standards shall be maintained at high quality unless a determination is made by the Agency that a change is justifiable as a result of necessary economic or social development and will not preclude appropriate beneficial present and future uses of the waters. Any project or development which would constitute a source of pollution to waters of the state shall be required to provide the best practicable control technology currently available not later than July 1, 1977 and the best available technology economically achievable not later than July 1, 1983 and any other applicable treatment standards as defined by and in accordance with the requirements of the Federal Pollution Control Act, 33 U.S.C. 1251 et seq., as amended, in order to maintain high water quality and keep water pollution at a minimum. In implementing this policy, the Administrator of the U. S. Environmental Protection Agency will be provided with such information as he requires to discharge his responsibilities under the Federal Water Pollution Control Act, as amended.* WPC 14(a)(8)(1973) (Exhibit 28)[28] and WPC 15(a)(7)(1973) (Exhibit 29)[29]

In 1982, the rules governing the protection of Minnesota's surface waters changed from the WPC classification system to the Minnesota Code of Administrative Rules (MCAR) classification system. Nondegradation provisions found in WPC 14 and WPC 15, were included, unchanged, in 6 MCAR §§ 4.8014 (Exhibit 30)[30] and 4.8015 (Exhibit 31)[31].

The classification system was changed again in 1983 to the current administrative Minnesota Rules system and MCAR rules governing intrastate waters were codified in Minn. R. ch. 7050. In 1984, the MPCA repealed the original nondegradation policy found in the MCAR rule and replaced it with Minn. R. 7050.0180 (Nondegradation Policy, Exhibit 32)[32] which provided protection only to waters designated as ORVWs, and removed language providing for the protection for high water quality. The reasoning for abandoning nondegradation policy for non-ORVW waters is expressed in the accompanying SONAR:

> *The difficulties experienced with the [non-ORVW] policy are two: (1) identifying waters that are of such special or unique quality that their natural state must be protected; and (2) establishing restrictions on discharges to these waters such that their quality is protected. Statement of Need and Reasonableness, In the matter of the proposed Revision of 6 MCAR §§ 4.8014 and 4.8024 and Proposed Repeal of 6 MCAR §§ 4.8015 and 4.8025,* Relating to the Standards and Classification of Waters of the State, MPCA, (1984) pp. 8-9 (Exhibit 33)[33]

Region 5 of the EPA approved these 1984 water quality standards revisions in 1985 (Exhibit 34)[34]. Later in the same year, Region 5 advised the MPCA (Exhibit 35)[35] that the revised nondegradation policy did not meet federal antidegradation regulations – specifically, Minn. R. 7050.0180 did not include language for the protection of all high quality waters, as specified in 40 CFR § 131.12(a)(2). In addition, Region 5 also commented that the MPCA must assure protection of high quality waters from nonpoint sources as well as point source sources.

Minnesota's nondegradation rules were substantially changed again in 1988, in response to EPA's concerns. Major changes included the following:

- The title of Minn. R. 7050.0180 (Exhibit 36)[36] was changed from "Nondegradation Policy" to "Nondegradation for Outstanding Resource Value Waters." Additional ORVWs were designated in rule. Included as ORVWs were scientific and natural areas (SNAs), lakes suitable for the management of lake trout, and calcareous fens.
- A new rule entitled "Nondegradation for All Waters" (Minn. R. 7050.0185, Exhibit 37)[37] was adopted to provide protection for all of the state's waters from significant degradation and to maintain existing uses:

> *It is the policy of the state of Minnesota to protect all waters for significant degradation from point and nonpoint sources and to maintain existing water uses, aquatic habitats, and the level of water quality necessary to protect these uses.* Minn. R. 7050.0185, subp. 1.

The 1988 rule governing nondegradation for all waters required nondegradation review for all significant new or significant expanded discharges. New discharges are those which were not in existence before January 1, 1988, while expanded discharges are those that result in an increased pollutant loading after the same date. January 1, 1988 was the date upon which the Minn. R. 7050.0185 became effective. A significant discharge is defined either by an increase in:

- Flow – discharges greater than 200,000 gallon per day to waters other than Class 7 (i.e., limited resource value waters);
- Mass loading of a toxic pollutant – discharges likely to increase the concentration of the pollutant to a level greater than 1% over the baseline quality in the receiving water. Baseline quality is the quality consistently attained by January 1, 1988.

For significant discharges the MPCA determines whether additional control measures can reasonably be taken to minimize the impact. The determination is based on the importance of the economic and social impacts of the project, changes in the water quality, the cumulative impacts to water quality of all new or expanded discharges, and costs of additional treatment. The opportunity for public input regarding the MPCA's determination is provided when the draft permit is noticed. Discharges that do not impact ORVWs and do not meet the significance threshold are considered *de minimis* and are not required to undergo review under the current provisions.

The 1988 rule governing nondegradation of ORVWs does not contain a significance threshold for discharges to the restricted category of ORVWs – meaning that all discharges to these waters are required to undergo review. Note that new or expanded discharges are not allowed to the prohibited category of ORVWs.

In 1988, the MPCA also provided final guidance manuals to accompany the revised rules. These documents are entitled "*Guidance Manual for Applying Nondegradation Requirements for All Waters (Non-ORVW) in Minnesota*" (Exhibit 38)[38] and "*Guidance Manual for Applying Nondegradation Requirements on Outstanding Resource Value Waters in Minnesota*" (Exhibit 39)[39].

In 1989, the EPA approved the 1988 nondegradation revisions to Minn. R. ch. 7050 (Exhibit 40)[40]. The EPA headquarters and Region 5 provided an additional comprehensive review of Minnesota's nondegradation rules and draft implementing procedures and found (Exhibit

41)[41] that the rules did indeed satisfy the 40 CFR § 131.12 requirements. However, Region 5 advised that implementation procedures did not adequately follow EPA guidance in two areas: 1) nondegradation requirements should not be limited only to NPDES-permitted discharges; and 2) there should be an opportunity for public participation in all decisions allowing the lowering of water quality.

Rule revisions in 1990 to Minn. R. 7050.0180 (Exhibit 42)[42] changed the effective date for new and expanded discharges to ORVWs from November 5, 1984 to the date ORVWs are designated in rule. This was done to accommodate future ORVW designations, such as the calcareous fens added in 1990.

Revisions in 1994 to Minn. R. 7050.0180 (Exhibit 43)[43] designated additional SNAs and calcareous fens as ORVWs. The same year additional nondegradation policy language to protect wetlands (subp. 9) was added to Minn. R. 7050.0185 (Exhibit 44)[44].

Current Minn. R. 7050.0180 includes the 1988 addition of portions of Lake Superior as a prohibited ORVW. The same year Minn. R. ch. 7052 (Lake Superior Basin Water Standards) was adopted. This chapter, including its nondegradation rules (Exhibit 45)[45], provides protection against pollution from bioaccumulative pollutants in the Lake Superior basin. EPA approved the standards in 2000. (Exhibit 46)[46]

Current Minn. R. 7050.0185 includes policy language changes made in 2008 which provides better alignment with federal antidegradation regulations. The policy provided for the protection of existing uses (Tier 1 protection) and explicitly required the protection of high water quality (Tier 2 protection):

> *Existing beneficial uses and the water quality necessary to protect the existing uses must be maintained and protected from point and nonpoint sources of pollution.*
>
> *It is the policy of the agency that water quality conditions that are better than applicable water quality standards and are better than levels necessary to support existing beneficial uses must be maintained and protected unless the commissioner finds that, after full satisfaction of this part, a lowering of water quality is acceptable. In allowing a lowering of water quality, the existing beneficial uses must be maintained and protected and the provisions in subpart 3 must be applied.* Minn. R. 7050.0185, subp. 1.

3. Statutory authority

The MPCA is given and charged with powers and duties to adopt standards and rules "*in order to prevent, control or abate water pollution.*" Minn. Stat. § 115.03, subd. 1(e) (Exhibit 47)[47] Further, Minn. Stat. § 115.44 (Exhibit 48)[48] provides additional authority.

4. General statement of need and reasonableness

Minn. Stat. § 14.131 requires the MPCA to prepare, review, and make available for public review a SONAR of the proposed rules. This general statement provides a broad overview of necessity and reasonableness for this rulemaking. Section 5. provides greater detail on individual provisions of the proposed rules.

A. Importance of maintaining water quality to Minnesota citizens

The proposed rules are needed to ensure protection of the state's surface water quality. Minnesota's water resources include about 105,000 river miles, 4.5 million acres of lakes and reservoirs including approximately 1.4 million acres of Lake Superior, and about 9.3 million acres of wetlands. Within Minnesota's borders lie the headwaters of three major continental watersheds, the Great Lakes/ St. Lawrence River, the Mississippi River, and the Red River of the North/Hudson Bay watersheds. Thus, Minnesotans have the privilege and, with that, the responsibility, of living upstream of millions of users of these major waterways. Our lakes, rivers, and streams play a vital role in the state's economy and the quality of life residents and visitors enjoy. The enormous opportunities for water-related recreation these resources provide, such as aesthetic enjoyment, swimming, fishing, boating and canoeing, depend to a great extent on good water quality.

Travel and tourism in Minnesota generates:

- $12.5 billion in gross sales;
- More than 245,000 full- and part-time jobs;
- $4.3 billion in wages;
- $811 million in state sales tax. (Tourism and Minnesota's Economy, Explore Minnesota Tourism, 2014) (Exhibit 49)[49]

The value of preserving Minnesota's surface water quality is tied to these tangible economic values.

Communities and regions benefit economically from water-based outdoor recreation as visitors eat, shop, and stay in gateway communities. Municipalities such as Ely and Brainerd have transitioned into tourism destinations based primarily on water-recreation. Sustaining Minnesota's reputation as a premier recreation destination fundamentally depends upon maintaining and improving water quality.

Property values are enhanced by the presence of water, especially when good water quality is preserved. Studies in several states have shown that people are willing to pay more for properties associated with water resources of higher quality. Research conducted in Maine, Vermont and New Hampshire shows a direct correlation between water clarity and the market value of shore land property. The Maine study examined the relationship between Secchi disk transparency and the selling price of 543 properties on 34 lakes in the state from 1990 to 1994 (Water Quality Affects Property Prices: A Case Study of Selected Maine Lakes, 1996) (Exhibit 50)[50]. The authors found that a one meter improvement in lake water clarity resulted in changes in average property prices ranging from $11 to $200 per foot of lakeshore frontage. When aggregated for an entire lake, these values translate to millions of dollars in improved property prices per lake.

Closer to home, a study conducted in the late-1980s estimated the contribution of water clarity to lake-front property values on 53 lakes in northern Minnesota (Measuring the Economic Value of Water Quality: The Case of Lakeshore Land, 1992) (Exhibit 51)[51]. A significant correlation was demonstrated between water transparency and measures of lake lot price. The author found that a 1-foot increase in Secchi disk transparency raised lakeshore prices by an average of $206 to $240 per lakeshore lot (average lake frontage of lots was 121 feet). Other variables tested, including lake size, lake depth and accessibility did not prove to have a significant effect on lakeshore land value. This study compiled estimates

from land value assessments that, although influenced by market factors, were less direct than actual market sales data.

Another Minnesota study that used actual property sales data found lakeshore property values increase when water clarity increases and decrease when water clarity decreases (Lakeshore Property Values and Water Quality: Evidence from Property Sales in the Mississippi Headwaters Region, 2003) (Exhibit 52)[52]. This study was patterned after the Maine study mentioned above. The authors report that a 1-meter improvement in Secchi transparency increased the value of lakeshore property by an average of $45.64 for each frontage foot on the lake (median increase, $13.59; range $1.08 to $423.58). A 1-meter decrease in Secchi transparency decreased lakeshore property values by an average of $69.36 per frontage foot (median decrease, $22.92; range $1.43 to $594.16)[5].

The value of Minnesota's sport fishery, which relies on high quality surface waters, may also be expressed in economic terms. A recent study published by the American Sportfishing Association indicates that Minnesota sportfishing in 2011 provided 35,462 jobs, generated $1.3 billion in wages and salaries, accounted for $2.4 billion in direct annual expenditures, and contributed $264 million in state and local tax revenues (Sportfishing in America, 2013) (Exhibit 53)[53]. The study further states that the economic impact of the state's sportfishing activities in 2011 exceeded $4.2 billion when adjusted for expenditures on gas, lodging and the fishing-related services.

Other additional values of surface water quality are not readily quantifiable in economic terms. These values include those that enrich the intellectual, psychological, emotional, spiritual, cultural and/or creative aspects of the human experience. A prime example of such values relevant in Minnesota is the spiritual and cultural value placed on wild rice by American Indians.

Protecting water quality is important to Minnesotans as demonstrated in the 2008 general election when voters approved the Clean Water, Land and Legacy Amendment (Laws of Minnesota of 2008, Chapter 151, Amendments added to the Minnesota Constitution, Article XI, § 15) (Exhibit 54)[54]. The Amendment increases the sales and use tax rate by three-eighths of 1% on taxable sales, starting July 1, 2009, and continuing through 2034. Of those funds, approximately 33% is dedicated to the Clean Water Fund (Minn. Stat. § 114D.50) to protect, enhance, and restore water quality in lakes, rivers, streams, and groundwater.

Likewise, the Clean Water Legacy Act calls for protecting, restoring and preserving the quality of Minnesota's surface waters. The Legislature, in passing the law, noted that:

> *(1) there is a close link between protecting, enhancing, and restoring the quality of Minnesota's groundwater and surface waters and the ability to develop the state's economy, enhance its quality of life, and protect its human and natural resources;*
>
> *(2) achieving the state's water quality goals will require long-term commitment and cooperation by all state and local agencies, and other*

[5] The lake with both the largest increase ($423.58) and largest decrease ($594.16) in dollar value with a 1-meter change in water clarity is Leech Lake. The lake with both the smallest increase ($1.08) and smallest decrease ($1.43) in dollar value with a 1-meter change in water clarity is Balsam Lake in Itasca County.

public and private organizations and individuals, with responsibility and authority for water management, planning, and protection; and

(3) all persons and organizations whose activities affect the quality of waters, including point and nonpoint sources of pollution, have a responsibility to participate in and support efforts to achieve the state's water quality goals. Minn. Stat. § 114D.10, subd. 2

Simply put, surface water quality is central to our well-being as a state. Decisions regarding the protection of water quality must be balanced with other needs of the state, including economic and social development. Antidegradation, as a regulatory tool, provides a decision-making process to determine whether, and to what extent, water quality may be lowered to meet those needs.

B. Inadequacies of the current rules

1. The current rules are outdated

The last major revisions to rules governing nondegradation found in Minn. R. ch. 7050 were made in 1988. Since that time there have been changes to federal water quality regulations. For example, most regulated stormwater activities came under NPDES permitting authority after 1988. There are no stormwater-related provisions in the current rules. The EPA has also provided additional guidance since 1988 regarding the implementation of antidegradation. In addition, the ability to accurately assess water quality and implement effective pollution controls has significantly improved since the last major rule revision.

2. The standard by which lowering of high water quality is allowed is different than federal regulatory requirements

The current rules do not align well with current federal antidegradation regulations in regard to demonstrating necessity when lowering high water quality is proposed. Federal regulations prohibit the lowering of high water quality unless it is "*…**necessary** to accommodate important economic or social development…*" 40 CFR § 131.12(a)(2) (emphasis added) The current rules do not provide the same protection standard – rather requiring that high water quality be maintained and protected unless "*…a lowering of water quality is **acceptable**.*" Minn. R. 7050.0185, subp. 1 (emphasis added)

3. The current rule governing nondegradation for all waters (Minn. R. 7050.0185) allows for de minimis discharges without considering the consumption of assimilative capacity

Federal antidegradation regulations do not specify how states should determine when antidegradation procedures are required and EPA guidance provides states with considerable discretion on the matter. Some states, including Minnesota, require antidegradation procedures only for those activities that are not considered *de minimis* based on a significance threshold. The intent of allowing for *de minimis* activities is to focus limited resources where they may result in the greatest environmental benefit. EPA guidance recommends that significance thresholds be defined in terms of assimilative capacity, unless the state can justify another approach that is equally or more protective (Tier 2 Antidegradation Reviews and Significance Thresholds, U.S. EPA memorandum from Ephraim S. King (Office of Science and Technology) to Water

Management Division Directors, Regions 1-10, (2005)) (Exhibit 55)[55]. The guidance defines available assimilative capacity of a water body as:

> *…the difference between the applicable water quality criterion for a pollutant parameter and the ambient water quality for that pollutant parameter where it is better than the criterion.* Tier 2 Antidegradation Reviews and Significance Thresholds, U.S. EPA memorandum from Ephraim S. King (Office of Science and Technology) to Water Management Division Directors, Regions 1-10, (2005)

To address cumulative impacts, the same memorandum recommends that states incorporate cumulative caps based on the use of total assimilative capacity, defined as:

> *…the baseline assimilative capacity of a waterbody established at a specific point in time.* Tier 2 Antidegradation Reviews and Significance Thresholds, U.S. EPA memorandum from Ephraim S. King (Office of Science and Technology) to Water Management Division Directors, Regions 1-10, (2005)

In other words, under federal guidance, when a predetermined amount of total assimilative capacity is consumed, antidegradation procedures are required regardless of the amount of remaining assimilative capacity.

Under the current state rule governing nondegradation for all waters, procedures for discharges to waters other than ORVWs are only required for new or expanded significant discharges. Significant discharges are those that would 1) increase daily flow rates to waters (other than Class 7 waters) by greater than 200,000 gallons or 2) increase the concentration of a toxic pollutant to a level greater than 1% over that consistently attained by January 1, 1988. The current rule's significance tests are inadequate for several reasons. First, the flow-based test does not consider the impacts of the proposed activity on the assimilative capacity. Thus a proposed sub-significant discharge of 199,000 gallons per day to a small stream with little assimilative capacity would not require review and would be treated similarly to a discharge to a large water body with a large amount of assimilative capacity. Second, although the toxic-based threshold is based on an increase of toxicant in the receiving water, it also does not address the consumption of assimilative capacity. A 1% increase in concentration of a toxic pollutant may not be significant in a water body with a large amount of assimilative capacity, but could be very consequential to a water body on the verge of being impaired. Third, the current rule does not contain a means of addressing cumulative *de minimis* discharges. As such, multiple *de minimis* discharges may result in significant water quality impacts without triggering nondegradation review.

Environmental groups have successfully challenged other states' antidegradation rules that inappropriately use significance thresholds for review exemptions (Ohio Valley Environmental Coalition v. Horinko, 279 F. Supp. 2D 732 (S.D.W.V. 2003) (Exhibit 56)[56], Kentucky Waterways Alliance v. Johnson, 540 F.3d 446 (6th Cir. 2008) (Exhibit 57)[57] and Greater Yellowstone Coalition v. EPA, Case No. 12-CV-60, (D. Idaho, 2013)) (Exhibit 58)[58].

4. The current rules are susceptible to legal challenges

Two important Minnesota appeals court decisions prompted the need for revised antidegradation rules. These decisions raised two key issues and influenced the development of the proposed rules.

- The current rules do not provide for the implementation of nondegradation through general permits.

In 2002, the MPCA issued an NPDES general permit for stormwater discharges from MS4s. Minnesota Center for Environmental Advocacy (MCEA) filed for an appeal alleging that where there is a showing in the record that the discharges to be covered under a general permit are expanded significant discharges, the MPCA must determine whether additional control measures are necessary under Minn. R. 7050.0185 to prevent degradation of state waters. The Minnesota Court of Appeals agreed and ruled that the MPCA needed to determine whether the discharges are in fact expanded discharges and that the MPCA still has discretion to determine whether additional control measures can reasonably be taken to minimize the impacts (MCEA v. MPCA, 660 N.W.2d 427 (Minn. App. 2003)) (Exhibit 59)[59].

- Nondegradation review requires a thorough alternatives analysis and an assessment of existing water quality before degradation is allowed.

The second case involved a challenge to the MPCA's issuance of an NPDES permit to the City of Princeton for a proposed wastewater treatment discharge to a segment of the Rum River designated as a restricted ORVW. New or expanded discharges to this category of ORVWs are only allowed when there is not a prudent and feasible alternative to the discharge.

In 2005, the Minnesota Court of Appeals remanded the permit back to the MPCA stating that:

> *Under Minnesota's nondegradation rules, the City of Princeton must analyze the prudence and feasibility of a downsized WWTP [wastewater treatment plant] used in conjunction with acceptable decentralized treatment to meet additional anticipated population growth before such an alternative can be rejected by the city and MPCA as not prudent or feasible. The MPCA must establish the existing water quality of the Rum River and impose necessary requirements and restrictions on Princeton's proposed WWTP to protect that quality.* MCEA v. MPCA, City of Princeton, 696 N.W.2d 95, 108-109 (Minn. App. 2005) (Exhibit 60)[60]

5. The current rules do not include adequate implementation methods thereby limiting the effectiveness of nondegradation protection

Minn. Stat. § 115.03, subd. 1 gives the MPCA regulatory authority to administer and enforce all laws related to pollution of any waters of the state. The MPCA grants authorization to activities that impact water quality through the issuance of control documents including CWA section 402 (Exhibit 61)[61] permits (i.e., NPDES permits) and CWA section 401 (Exhibit 62)[62] certifications of federal licenses and permits. These control documents specify the conditions under which the activity is allowed to operate in order to protect water quality and are therefore mechanisms through which water quality standards and antidegradation requirements are enforced. Because the activities to which antidegradation regulatory requirements apply vary considerably, the

proposed rules include implementation procedures specific to the above control documents through which they are regulated.

The following EPA guidance indicates that antidegradation protection applies to all regulated activities that are required to comply with water quality standards:

- Guidance for Antidegradation Policy Implementation for High Quality Waters, U.S. EPA Region 1, March 10, 1987. Pages 2-4 (Exhibit 63)[63]
- 40 CFR § 132, Appendix E, Water Quality Guidance for the Great Lakes System (Exhibit 64)[64]
- EPA guidance memorandum, "Questions and Answers on Antidegradation," 1985 (Exhibit 65)[65]
- Water Quality Standards Handbook, Second Edition, Chapter 4 (Antidegradation), U.S. EPA (1994), p. 7
- EPA Region V Guidance for Antidegradation Policy Implementation for High Quality Waters, December 3, 1986 (Exhibit 66)[66]

One piece of EPA guidance in particular articulates the applicability of antidegradation with clarity:

> *It is the position of EPA that, at a minimum, States and authorized Tribes must apply antidegradation requirements to activities that are ''regulated'' under State, Tribal, or federal law (i.e., any activity that requires a permit or a water quality certification pursuant to State, Tribal or federal law, such as CWA § 402 NPDES permits or CWA § 404 dredge and fill permits, any activity requiring a CWA § 401 certification, any activity subject to State or Tribal nonpoint source control requirements or regulations, and any activity which is otherwise subject to State or Tribal regulations that specify that water quality standards are applicable).* Advanced Notice of Proposed Rulemaking, 63 Fed. Reg. 36742 (1998), p. 36780

Although the current rules' policy statements broadly call for the protection and maintenance of water quality from point and nonpoint sources, they do not contain adequate implementation procedures to address the various regulated activities to which antidegradation regulatory requirements apply. In all fairness, the current rules were adopted at a time when the focus of nondegradation protection was on review of proposed new and expanded wastewater treatment facilities regulated under individual NPDES permits. Stormwater discharges, for example, came under the NPDES regulatory program after 1988 – the year the last major revision was made to the nondegradation rules. As illustrated in the first court ruling described above, the current rules do not adequately address discharges covered under general NPDES permits. The current rules also do not adequately address how nondegradation is to be implemented for dredge and fill activities regulated under CWA section 404, especially for surface waters other than wetlands. For these reasons the MPCA has, until recently, limited nondegradation implementation to wastewater treatment activities covered under individual NPDES wastewater permits. Where nondegradation requirements have been considered outside of individual wastewater permits (primarily through the issuance of stormwater

permits), reviews have been limited to achieve the broad intent of nondegradation policy.

Note that although states have discretion to apply antidegradation requirements more broadly than minimally required by federal regulation, application of state antidegradation requirements to activities that are otherwise unregulated under state or federal water law is not required. Federal antidegradation requirements and these proposed rules do not create, nor were they intended to create state regulatory authority over otherwise unregulated activities (Advanced Notice of Proposed Rulemaking, 63 Fed. Reg. 36742 (1998), p. 36780). On the other hand, some states have attempted to exempt certain types of regulated activities from antidegradation requirements. For example, the State of Kentucky attempted to provide an exemption from antidegradation requirements for stormwater activities covered under general permits alleging that the discharges were *de minimis*. The EPA's approval of Kentucky's antidegradation procedures was challenged and the Sixth Circuit Court of Appeals vacated and remanded the EPA's approval of Kentucky's *de minimis* exemptions, including discharges under stormwater general permits. (Kentucky Waterways Alliance v. Johnson, 540 F.3d, 446, 492-493 6th Cir. 2008) (Exhibit 57)

C. Petition for rulemaking

In 2007, the MPCA received a formal petition for rulemaking to revise the current nondegradation rules in Minn. R. ch. 7050 (Petition for Rulemaking to the Minnesota Pollution Control Agency, Petitioner: Minnesota Center for Environmental Advocacy, MCEA, (April 30, 2007) (Exhibit 1). The MPCA responded that it intended to proceed with the rulemaking (letter dated June 29, 2007, from Brad Moore, Commissioner, MPCA to Ms. Sigford and Mr. Reuther, MCEA) (Exhibit 67)[67].

5. Need and reasonableness of individual rule parts

The MPCA is proposing to replace the term "*nondegradation*" found in current rules with "*antidegradation*". This change is reasonable because the term "*antidegradation*" more accurately describes federal policy. While "*nondegradation*" may be an accurate description for Tiers 1 and 3 antidegradation protection, which respectively prohibit the removal of existing uses and the permanent degradation of outstanding national resource waters (ONRWs) (equivalent to the prohibited category of Minnesota's ORVWs), it is not an accurate term to describe Tier 2 protection. Tier 2 protection does not prohibit degradation when, through public participation, a determination is made that a lowering of high water quality is necessary to accommodate important economic or social development. The change is reasonable also because it creates consistency with federal regulations, EPA guidance and other states' rules and implementation procedures.

The proposed rules contain 14 parts, grouped into the following general categories:

- Purpose (Minn. R. 7050.0250)
- Definitions (Minn. R. 7050.0255)
- Determining existing water quality (Minn. R. 7050.0260)
- Antidegradation standards (Minn. R. 7050.0265 and Minn. R. 7050.0270)
- Exemptions from antidegradation procedures (Minn. R. 7050.0275)

- Antidegradation procedures (Minn. R. 7050.0280 to Minn. R. 7050.0325)
- Designated ORVWs (Minn. R. 7050.0335)

Minor additional changes are being made to other rule chapters to eliminate obsolete cross references and provide supporting references to the rules being proposed. Those changes are discussed at the end of this Section and Section 6.

A. Antidegradation purpose (Proposed Minn. R. 7050.0250)

[6]The purpose of the antidegradation provisions in parts 7050.0250 to 7050.0335 is to achieve and maintain the highest possible quality in surface waters of the state. To accomplish this purpose:

A. existing uses shall be maintained and protected;

B. degradation of high water quality shall be minimized and allowed only to the extent necessary to accommodate important economic or social development;

C. water quality necessary to preserve the exceptional characteristics of outstanding resource value waters shall be maintained and protected; and

D. proposed activities with the potential for water quality impairments associated with thermal discharges shall be consistent with section 316 of the Clean Water Act, United States Code, title 33, section 1326.

The purpose statement is needed to articulate the goal of the proposed rules. The items contained in the statement clearly comport with federal antidegradation requirements found in 40 CFR § 131.12.

The proposed purpose statement improves upon the current rule's policy governing nondegradation for all waters (Minn. R. 7050.0185). Although the current rule's policy statement provides Tier 1 protection, it lacks clarity because the term "*uses*" is expressed in four different ways:

> *The **beneficial uses** inherent in water resources are valuable public resources. It is the policy of the state to protect all waters from significant degradation from point and nonpoint sources and wetland alterations and to maintain **existing water uses** and aquatic and wetland habitats. **Existing beneficial uses** and the water quality necessary to protect the **existing uses** must be maintained and protected from point and nonpoint sources of pollution.* Minn. R. 7050.0185, subp. 1 (emphasis added)

Without defining these terms in the current rule the reader may be confused as to their meanings. The proposed purpose statement clearly reiterates the federal requirement that existing uses must be maintained and protected, and, unlike the current rules, the proposed rules provide definitions for both existing uses and beneficial uses.

The policy statement contained in the existing nondegradation rule for all waters allows for the lowering of high water quality when the MPCA determines it is "*acceptable*":

> *It is the policy of the agency that water quality conditions that are better than applicable water quality standards and are better than levels*

[6] Text of proposed rule shown in large type for reference

> *necessary to support existing beneficial uses must be maintained and protected* ***unless the commissioner finds that****, after full satisfaction of this part,* ***a lowering of water quality is acceptable****.* Minn. R. 7050.0185, subp. 1 (emphasis added)

The proposed rules strengthen Tier 2 protection by changing the standard for which the degradation (i.e., lowering) of high water quality is allowed from what the MPCA[7] deems "*acceptable*" to what is deemed "*necessary,*" thus bringing Tier 2 protection in alignment with federal regulations.

The purpose statement (and subsequent procedures) adds clarity that the proposed rules apply to surface waters of the state. This is reasonable because the CWA and federal regulations governing water quality standards, including 40 CFR § 131.12, apply to surface waters. Note that Minn. R. 7060.0500 provides nondegradation policy for groundwater, but is not part of this rulemaking.

B. Definitions (Proposed Minn. R. 7050.0255)

Minn. R. 7050.0255 provides the definitions for important terms found in the proposed rules. Including these definitions is essential to understanding the proposed rules.

1. Subpart 1. **Applicability.** For purposes of parts 7050.0250 to 7050.0335, the following terms have the meanings given in this part. Terms in parts 7050.0250 to 7050.0335 that are not specifically defined in applicable federal or state law shall be construed in conformance with the context, in relation to the applicable section of the statutes pertaining to the matter and current professional usage.

   This subpart defines the scope of rule parts to which the definitions apply. It is reasonable to provide a broad directive regarding terms that are not specifically defined because it would be overly burdensome to define every term within the proposed rules. The definition ensures that terms not defined in the proposed rules are to be taken in the context of the proposed rule language using the professional usage of the term in question.

2. Subp. 2. **Agency.** "Agency" has the meaning given under Minnesota Statutes, section 115.01, subdivision 2, unless otherwise specified.

   Minn. Stat. § 115.03 provides the MPCA regulatory authority for controlling pollution of waters of the state. The statute defines "*agency*" as "*the Minnesota Pollution Control Agency.*" (Minn. Stat. § 115.01, subd. 2). Referencing the statutory definition instead of repeating statutory language is Minnesota Rule drafting convention.

3. Subp. 3. **Applicant.** "Applicant" means a person requesting a control document.

   This definition is reasonable because it clearly identifies the person requesting MPCA authorization to discharge to or otherwise adversely impact surface waters.

[7] When referring to "commissioner" in rule language, the SONAR uses the term "Minnesota Pollution Control Agency" or "MPCA." This was done for ease of reading. "Commissioner" is defined in the proposed rules as "the commissioner of the Minnesota Pollution Control Agency or the commissioner's designee." (Minn. R. 7050.0130, subp. 4.)

4. Subp. 4. **Beneficial use.** "Beneficial use" means a designated use described under part 7050.0140 and listed under parts 7050.0400 to 7050.0470 for each surface water or segment thereof, whether or not the use is being attained.

   The classification of state waters, as required under Minn. Stat. § 115.44, identifies seven beneficial use classifications found in Minn. R. 7050.0140:

   - Class 1 – Domestic consumption
   - Class 2 – Aquatic life and recreation
   - Class 3 – Industrial consumption
   - Class 4 – Agriculture and wildlife
   - Class 5 – Aesthetic enjoyment and navigation
   - Class 6 – Other uses and protection of border waters
   - Class 7 – Limited resource value waters

   Minnesota's term "*beneficial use*" is equivalent to the federal term "*designated use,*" which is defined in water quality standards federal regulations as:

   > *…those uses specified in water quality standards for each water body or segment whether or not they are being attained.* 40 CFR § 131.3(f) (Exhibit 68)[68]

   The proposed definition is reasonable because it reiterates the federal definition and provides reference to where the uses are described and listed in Minnesota Rules. Although the meanings are the same, it is reasonable to use the term "*beneficial use*" rather than "*designated use*" because the former term is found throughout Minn. R. ch. 7050 and other Minnesota Rules. Defining this term also provides a distinction between beneficial uses and existing uses as defined in subp. 17 of the proposed rule.

5. Subp. 5. **Calcareous fen.** "Calcareous fen" means an area listed in part 7050.0335, subpart 1, item E and described under part 8420.0935, subpart 2.

   Including this definition is reasonable because it points the reader to where calcareous fens are listed (proposed Minn. R. 7050.0335, subp. 1(E)) and provides reference (Minn. R. 8420.0935, subp. 2) to how calcareous fens are identified and the exceptional characteristics that make them restricted ORVWs.

6. Subp. 6. **Class 2 surface water.** "Class 2 surface water" means a surface water that is protected for aquatic life and recreation beneficial uses and to which water quality standards described in part 7050.0222 apply.

   Class 2 surface waters are protected for aquatic life and recreation beneficial uses. Tier 2 antidegradation protection prevents the unnecessary degradation of high water quality. The MPCA may allow the lowering of existing high water quality in a Class 2 surface water resulting from a regulated source, but only through a determination that the degradation is necessary to accommodate important economic or social development. The definition references Minn. R. 7050.0222 where Class 2 water quality standards are found.

7. Subp. 7. **Class 7 surface water.** "Class 7 surface water" means a surface water that is protected for limited resource value beneficial uses and to which water quality standards described in part 7050.0227 apply.

   This definition is needed because the proposed rules provide an exemption from antidegradation procedures for activities resulting in net increases in loading or other causes of degradation to Class 7 waters, but only when:

   - Existing uses are maintained;
   - Class 7 water quality standards are attained;
   - Downstream high water quality is not degraded;
   - Water quality essential to preserving exceptional characteristics of ORVWs is not degraded

   The definition is reasonable because it is consistent with Minn. R. 7050.0227 which describes Class 7 surface waters as those protected for limited resource beneficial uses and are protected for aesthetic qualities, secondary body contact use, and groundwater for use as a potable water supply. Although these waters are protected by standards and may contain aquatic life, they are not considered to meet the CWA section 101(a)(2) interim goal:

   > *…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;…* Federal Water Pollution Control Act, 33 U.S.C. § 1251 (1972, as amended)

8. Subp. 8. **Clean Water Act.** "Clean Water Act" means the federal Water Pollution Control Act, United States Code, title 33, section 1251 et seq.

   One of the origins of federal antidegradation policy is found in the objective of the CWA which is "*…to restore and **maintain** the chemical, physical, and biological integrity of the Nation's waters.*" (Federal Water Pollution Control Act, 33 U.S.C. § 1251 (CWA section 101(a)) (emphasis added). The proposed rules are implemented through the issuance and enforcement of control documents for which there is CWA regulatory authority. These activities include those regulated under the NPDES program and CWA section 401 certification actions related to federal licenses and permits.

9. Subp. 9. **Compensatory mitigation.** "Compensatory mitigation" means the restoration, establishment, or enhancement of surface waters to replace the loss of an existing use resulting from a physical alteration of a surface water after all prudent and feasible alternatives have been implemented to avoid and minimize degradation.

   Federal antidegradation regulations at 40 CFR § 131.12(a)(1) require that existing uses be maintained and protected. EPA guidance in the interpretation of maintaining and protecting existing uses specifically allows compensatory mitigation for lost uses, stating that:

   > *If a planned activity will foreseeably lower water quality to the extent that it no longer is sufficient to protect and maintain the existing uses in*

> *that water body, such an activity is inconsistent with EPA's antidegradation policy, which requires that existing uses are to be maintained. In such a circumstance, the planned activity must be avoided or* ***adequate mitigation*** *or preventive measures must be taken to ensure that the existing uses and the water quality to protect them will be maintained.* Water Quality Standards Handbook, Second Edition, Chapter 4, U. S. EPA (1994), pp. 3-4 (emphasis added)

The above mentioned guidance further states that:

> *A literal interpretation of 40 CFR 131.12(a)(1) could prevent certain physical modifications to a water body that are clearly allowed by the Clean Water Act, such as wetland fill operations permitted under section 404 of the Clean Water Act.* Water Quality Standards Handbook, Second Edition, Chapter 4, U. S. EPA (1994), p. 5

Note that compensatory mitigation for lost uses is limited to physical modifications allowed under the CWA. Compensatory mitigation would not, for example, be allowed for wastewater discharges resulting in the loss of an existing use.

The MPCA anticipates that only those physical alterations permitted under CWA section 404 (Exhibit 69)[69] will be allowed to provide compensatory mitigation for the loss of existing uses. This section of the CWA establishes programs to regulate the discharge of dredged or fill material into waters of the United States[8]. The program is jointly administered by the Army Corps of Engineers (ACE) and the EPA. The fundamental rationale of the program is that no discharge of dredged or fill material should be permitted if there is a practicable alternative that would be less damaging to aquatic resources. Permit review and issuance follows a sequential process that encourages avoidance of impacts, followed by minimizing impacts and, finally, requiring compensatory mitigation for unavoidable impacts to the aquatic environment.

Compensatory mitigation for the losses of aquatic resources resulting from dredge and fill activities is regulated through 33 CFR § 332. The proposed definition is reasonably derived from these regulations:

> *Compensatory mitigation means the restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved*. 33 CFR § 332.2 (Exhibit 70)[70]

The proposed definition requires that compensatory mitigation **replace the loss of existing uses** rather than **offsetting unavoidable adverse impacts** as found in 33 § 332.2. This is because the MPCA interprets the requirement to maintain existing uses in 40 CRF § 131.12(a)(1) and EPA's guidance to mean a no net loss of existing uses. The proposed definition excludes preservation as a means of mitigation. This is reasonable because preserving a water body in its existing condition cannot reasonably compensate

[8] The term "waters of the United States" is defined in 40 CFR § 122.2. The EPA and ACE recently proposed rules to clarify the scope of waters protected under the CWA (see Proposed Rules, 79 Fed. Reg., 22188 (2014)).

for the loss of an existing use. In other words, preserving an existing use that has not been lost simply does not replace a lost use. Allowing preservation as a means of compensatory mitigation would result is a net loss of existing uses.

The preferred order of compensatory mitigation is restoration, followed by establishment and enhancement. Different situations may dictate different approaches, including a combination of these methods.

Restoration means reclaiming the use of water body to bring back one or more functions that have been lost. It is the preferred form of mitigation because the likelihood of success is greater than establishment and the potential gains (e.g., an increase in acreage or linear footage of aquatic resources) in terms of aquatic resource functions and services are greater than enhancement.

Establishment means constructing a new water body and has the potential to result in a gain in aquatic resource area and functions. It is generally applied to wetlands because of the difficulties in creating other types of water bodies. There is less assurance of success in creating new wetlands than in restoring degraded ones. Many created wetlands have not persisted over time or have not provided the functions for which they were designed. Success rates are improving as wetland construction technology is advancing. Careful design, monitoring, and long-term maintenance are critical. Although establishment may result in an increase in the acreage or linear footage of aquatic resources, this method of compensatory mitigation will only be considered where there is a high likelihood of success in replacing lost functions.

Enhancement means heightening, intensifying, or improving specific aquatic resource functions. It involves altering an existing water body to increase selected functions and benefits. Enhancement is often short-lived unless carefully designed and maintained, perhaps indefinitely. The water body often returns to the equilibrium state that existed prior to enhancement. Enhancement may involve questions of trade-offs. It typically focuses on habitat improvement which could result in the loss of one habitat type to create another. Gains for some species may result at the expense of lost habitat for other species. Enhancement will only be considered when it does not cause the loss of another existing use. It should only be considered as appropriate mitigation in the rare instance when the trade-offs are limited to habitat and when other important functions in the enhanced water body are not impaired by the alterations.

Further discussion of compensatory mitigation is provided in Section 5.D.3.

10. Subp. 10. **Control document.** "Control document" means an authorization issued by the commissioner that specifies water pollution control conditions under which a regulated activity is allowed to operate. Control document includes Clean Water Act authorizations used to administer NPDES permits and section 401 certifications. For purposes of parts 7050.0250 to 7050.0335, total maximum daily loads are not control documents.

Antidegradation procedures are limited to activities impacting surface waters of the state that are regulated by the MPCA. These activities are controlled through the issuance and enforcement of authorizations such as NPDES permits and CWA section 401 certifications. The definition creates flexibility in the event that other types of MPCA authorizations are

established which would regulate currently unregulated activities impacting surface water quality.

The last sentence clarifies that total maximum daily loads (TMDLs) are, for the purpose of the proposed rules, not control documents because they do not create any regulatory authorizations. A TMDL is a scientific study that contains a calculation of the maximum amount of a pollutant that may be introduced into a surface water and still ensure that applicable water quality standards for that water are restored and maintained. A TMDL also is the sum of the pollutant load allocations for all sources of the pollutant, including a wasteload allocation for point sources, a load allocation for nonpoint sources (i.e., unregulated sources) and natural background, an allocation for future growth of point and nonpoint sources, and a margin of safety to account for uncertainty about the relationship between pollutant loads and the quality of the receiving surface water. TMDL's are often used to develop the terms and conditions of control documents.

11. Subp. 11. **Degradation** or **degrade.** "Degradation" or "degrade" means a measurable change to existing water quality made or induced by human activity resulting in diminished chemical, physical, biological, or radiological conditions of surface waters. For municipal sewage and industrial waste discharges, degradation is calculated at the edge of the mixing zone upon reasonable allowance for dilution of the discharge according to part 7053.0205, subpart 5.

    The proposed definition is derived from statute, which defines "*pollution of water*", or "*water pollution,*" as:

    > *…the alteration made or induced by human activity of the chemical, physical, biological, or radiological integrity of waters of the state.* Minn. Stat. § 115.01, subd. 13(b)

    The term "*alterations*" in the statutory definition is replaced with "*measurable change*" to more clearly articulate that adverse changes to water quality are to be quantifiable. The last sentence in the proposed definition is included to comport with Minn. R. 7053.0205, subp. 5, which provides for the dilution of wastewater effluents in mixing zones. Since Minnesota rules already identify mixing zones as areas where water quality standards may be exceeded, it is reasonable to acknowledge that existing provision in the definition of "*degradation*" and "*degrade*".

12. Subp. 12. **Discharge.** "Discharge" means the addition of pollutants to surface waters.

    This definition is reasonable because it derived from the statutory definition of "*discharge*":

    > *…the addition of any pollutant to the waters of the state or to any disposal system.* Minn. Stat. § 115.01, subd. 4

    The proposed definition differs from the statutory definition in that the former considers the addition of pollutants to surface waters and not "*to any disposal systems.*" The difference is reasonable because "*surface waters*" are already defined in Minn. R. ch. 7052 as:

    > *…waters of the state excluding groundwater as defined in Minnesota Statutes, section 115.01, subdivision 6.* Minn. R. 7050.0130, subp. 6

"*Waters of the state*" as defined in Minn. R. ch. 7050 has the meaning found in Minn. Stat. § 115.01, subd. 22 except that:

> *…disposal systems or treatment works operated under permit or certificate of compliance of the agency are not "waters of the state."* Minn. R. 7050.0130, subp. 2

13. Subp. 13. **Effective date.** "Effective date" means:

    A. for the protection of high water quality:
        (1) when applied to a previously unregulated activity, the date when the control document is issued; or
        (2) when applied to a currently regulated activity, the date of the most recently issued control document.
    B. for the protection of exceptional characteristics of outstanding resource value waters, except as provided in (1) and (2), the date when the outstanding resource value water was designated in rule.
        (1) When the commissioner determines there is an improvement in exceptional characteristics of the outstanding resource value water as a result of changes to water pollution control conditions specified in a reissued control document, the effective date is the date when the control document was reissued.
        (2) When the commissioner determines there is an improvement in exceptional characteristics of the outstanding resource value water as a result of a regulated activity ceasing to discharge to or otherwise adversely impact an outstanding resource value water, the effective date is the expiration date of the associated control document.

    The effective date sets the baseline from which loading or other causes of degradation are measured. A baseline is critical in determining whether antidegradation procedures are required and whether or to what extent water quality degradation may be allowed.

    Item A defines the effective date for high water quality not associated with exceptional ORVW characteristics. In this case the effective date is tied to the date of control document issuance. This is reasonable because antidegradation requirements are implemented through the issuance and enforcement of control documents, through which the MPCA grants permission for a regulated activity to discharge to, or otherwise impact, surface waters of the state. The effective date for previously unregulated activities that are not regulated by an existing control document (sub-item (1)) is the date the first control document was issued for that specific activity. This is reasonable because these activities have not previously been required to obtain antidegradation approval through the issuance of a control document. The effective date may change for currently regulated activities (sub-item (2)) to the date of the most recent control document issuance. This is reasonable because antidegradation requirements do not prohibit the degradation of high water quality, but such degradation is allowed only when a final determination has been made that the lowering of high water quality is necessary to accommodate important economic or social development. Thus when the MPCA makes a finding that Tier 2 requirements are satisfied and a lowering of high

water quality results from the regulated activity, the effective date reasonably changes to the date of the most recently issued control document.

Item B defines effective date for the protection of ORVWs which are designated through rulemaking. Therefore it is reasonable that the effective date for these waters is the effective date of the rule designating them as ORVWs. Sub-items (1) and (2) provide two exceptions to this provision. The first, sub-item (1), addresses situations when the reissuance of a control document results in an improvement on an ORVW's exceptional characteristics. In such cases, the effective date changes to the date of the control document reissuance. For example, consider a regulated activity which existed prior to an ORVW being designated in rule. This activity would be allowed to continue discharging to the ORVW at loadings established in the existing control document because the discharge is "grandfathered in". However, if that same activity were to reduce its loading as a result of changes to water pollution controls specified in a more recent control **and** such changes result in the improvement of the ORVW's exceptional characteristics, the effective date changes to the date of when the control document was reissued. This is a reasonable approach because it provides for the water quality improvement of the State's most special or unique water resources. It would not be prudent for the MPCA to allow water quality to improve, and then allow degradation of the resource back to its grandfathered condition.

Sub-item (2) is similar to the first, but addresses regulated activities that cease to exist. In this case the effective date changes to the expiration date of the associated control document. The reasonableness of this provision is the same as stated above.

14. Subp. 14. **Exceptional characteristics of outstanding resource value waters.** "Exceptional characteristics of outstanding resource value waters" means characteristics for which an outstanding resource value water is designated, including wilderness, scientific, educational, ecological, recreational, cultural, or aesthetic resource characteristics or other special qualities that warrant stringent protection from degradation.

    The current rule governing nondegradation of ORVWs identifies exceptional characteristics in two subparts:

    > *The agency recognizes that the maintenance of existing high quality in some waters of outstanding resource value to the state is essential to their function as* ***exceptional recreational, cultural, aesthetic, or scientific resources****. To preserve the value of these special waters, the agency will prohibit or stringently control new or expanded discharges from either point or nonpoint sources to outstanding resource value waters.* Minn. R. 7050.0180, subp. 1 (emphasis added);

    and

    > *"Outstanding resource value waters" are waters within the Boundary Waters Canoe Area Wilderness, Voyageur's National Park, and Department of Natural Resources designated scientific and natural areas, wild, scenic, and recreational river segments, Lake Superior, those portions of the Mississippi River from Lake Itasca to the southerly boundary of Morrison County that are included in the Mississippi*

> *Headwaters Board comprehensive plan dated February 12, 1981, and other waters of the state with* ***high water quality, wilderness characteristics, unique scientific or ecological significance, exceptional recreational value, or other special qualities*** *which warrant stringent protection from pollution.* Minn. R. 7050.0180, subp. 2 (emphasis added)

The proposed definition consolidates the exceptional characteristics of ORVWs, removes reference to "*high water quality*", and adds "*educational*" as an exceptional characteristic. Consolidating the attributes of ORVWs reduces the length of the proposed rules and provides greater clarity. "*High water quality*" was removed because some waters may be designated as ORVWs for reasons other than high water quality as defined in the proposed rules. For example, some bogs listed as ORVWs may have naturally occurring low dissolved oxygen concentrations that are not better than the water quality standard, yet are outstanding ecological resources and therefore listed as ORVWs. The proposed definition adds "*educational*" resources as an exceptional characteristic because ORVWs include SNAs established by the MDNR. One criterion used in the establishment of SNAs is educational value (Minn. Stat. § 86A.05, subd. 5(b)(1)).

15. Subp. 15. **Existing uses. "**Existing uses" means those uses actually attained in the surface water on or after November 28, 1975.

Federal antidegradation regulations require that existing uses, and the level of water quality necessary to protect those uses, be maintained and protected. This level of protection is often referred to as Tier 1 antidegradation protection and is the absolute baseline below which water quality may not be degraded. The term "*existing uses*" is defined in federal regulations as:

> *…those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.* 40 CFR § 131.3(e) (Exhibit 68)

The proposed definition is reasonable because it is consistent with the federal definition of "*existing uses.*" Note that the federal definition requires the consideration of uses "*whether or not they are included in the water quality standards.*" Uses are specified in two places within the CWA. The interim goal of the CWA:

> *…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.* Federal Water Pollution Control Act, 33 U.S.C. § 1251 (CWA section 101(a)(2)) (emphasis added) (Exhibit 12)

Section 303(c)(2)(A) of the CWA requires states to incorporate specific uses in their water quality standards:

> *Whenever the State revises or adopts a new standard, such revised or new standard shall be submitted to the Administrator. Such revised or new water quality standard shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses. Such standards shall be such as to protect the public health or welfare, enhance the quality of water and serve the*

> *purposes of this chapter. Such standards shall be established taking into consideration their use and value for* ***public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation****.* Federal Water Pollution Control Act, 33 U.S.C. § 1313 (CWA section 303) (emphasis added) (Exhibit 13)

Minnesota's water quality standards found at Minn. R. 7050.0140 include all of the specified uses found in CWA sections 101(a)(2) and 303(c)(2)(A).

16. Subp. 16. **Existing water quality.** "Existing water quality" means the physical, chemical, biological, and radiological conditions of a surface water, taking into account natural variability, on the effective date. Existing water quality is expressed either as a concentration of a water quality parameter or by other means to describe the condition of a surface water.

    For proposed regulated activities that are anticipated to result in a net increase in loading or other causes of degradation it is essential to have an understanding of existing water quality conditions, when such assessments are reasonable. Without an understanding of baseline conditions the MPCA cannot make determinations of whether and to what extent water quality may be lowered. The proposed definition is reasonable because it:

    - establishes a point in time when existing water quality is to be established (see the definition of "effective date");
    - accounts for natural variability not associated with human-induced activities;
    - describes how existing water quality is to be expressed

    The last sentence of this definition states that existing water quality may be described either as a concentration of a water quality parameter or by other means. Although existing water quality may be expressed in terms of the concentration of a chemical parameter, other means may necessary to describe physical and biological conditions of a water body. For example the physical condition of stream may be described as natural, channelized, ditched or impounded. The health of aquatic ecosystems may be expressed in terms of fish, invertebrate or plant Indices of Biological Integrity (IBI).

17. Subp. 17. **Feasible alternative.** "Feasible alternative" means a pollution control alternative that is consistent with sound engineering and environmental practices, affordable, legal, and that has supportive governance that can be successfully put into practice to accomplish the task.

    The term "*feasible alternative*" is an important concept in alternatives analyses. Under the proposed rules, when a prudent and feasible alternative is not available to **prevent** a net increase in loading or other causes of degradation, the prudent and feasible alternative that **minimizes** degradation (when existing water quality can reasonably be determined) or net increases in loading or other causes of degradation (when existing water quality cannot reasonably determined) must be identified.

    Although this term is found in the current rule governing nondegradation for ORVWs (Minn. R. 7050.0180) and other MPCA water rules, it is not defined in those rules. It is, however, defined in MPCA rules governing solid waste planning:

> *"Feasible" refers to an alternative that is consistent with sound engineering and environmental practices, is economically affordable, is legally possible, and has supportive governance that can be successfully put into practice to accomplish the task.* Minn. R. 9215.0510, subp. 8b

The proposed definition is essentially the same as that found in Minn. R. 9215.0510. The proposed definition requires that a feasible alternative be consistent with sound engineering practices. This ensures only proven and reliable alternatives are considered. Pollution control technologies are continually evolving and improving. Some newer pollution control technologies hold promise in their ability to treat wastewater. An applicant may propose the implementation of such technologies but will need to provide adequate information regarding effectiveness and reliability. The SONAR supporting Minn. R. ch. 9215 amendments provides further explanation of why "*sound engineering practices*" are included in the definition:

> *Defining feasible as being consistent with sound engineering practices is reasonable because it is based on judicial interpretation such as found in Lakes Region Legal Defense Fund, Inc. v. Slater, 986 F. Supp. 1169, 1207 (N.D. Iowa 1997)("There is no 'feasible alternative' [to using protected parklands for highway purposes]… if ["]'as a matter of sound engineering it would not be feasible to build the highway along any other route.' '' (quoting Committee to Preserve Boomer Lake Park, 4F. 3d 1543, 1549 (10th Cir. 1993) quoting Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 411 (1971).* Statement of Need and Reasonableness, Proposed Revisions to Rules Governing Solid Waste Management Planning Requirements, Minnesota Rules Chapter 9215 (MPCA, 2007), p. 17 (Exhibit 71)[71]

The proposed definition also requires that a feasible alternative be consistent with sound environmental practices. This requirement ensures that environmental impacts other than to surface water quality are considered.

The proposed definition provides that an alternative be affordable, recognizing that, given the unique economic conditions of each applicant, what might be feasible for one applicant may not be for another. For example, economic considerations for public projects may include factors related to demographics, such as changes in tax base, resulting from changes in the work force. The economic condition of private projects may include factors such as changes in profitability over time. Further discussion on how affordability will be addressed through alternatives analyses is provided in Section 5.G.2.a. and Attachment 4.

A feasible alternative must also be legally possible. This reasonably ensures that a selected alternative can indeed be legally implemented. An example of an alternative that is not feasible because is it not legally possible is a treatment method involving the use of chemicals prohibited under federal or state law.

The alternative must also have supportive governance. "Governance" refers to policies or regulations of the local government where the alternative is to be implemented. "Supportive governance" refers to policies or regulations that support the implementation of the alternative under consideration and do not present barriers to implementation of the alternative. An infiltration alternative for stormwater treatment

provides an example. The infiltration alternative is a feasible alternative only when the local government proposing the infiltration alternative has adopted policies and regulations supporting stormwater infiltration. An example is a stormwater and erosion control ordinance that includes preferences for stormwater infiltration over holding ponds. The infiltration alternative is not feasible if the local government has in place policies or regulations that prohibit stormwater infiltration. An example is planning guidance that discourages infiltration of stormwater runoff around private wellheads to protect drinking water. While the prohibition on stormwater infiltration around private wellheads may be sound policy to protect drinking water sources, it is not supportive of the infiltration alternative in the areas of the prohibition.

In summary, the proposed definition provides flexibility by recognizing that what may be feasible for one project may not be for another because of the unique conditions of each project.

18. Subp. 18. **Federally designated recreational river segment.** "Federally designated recreational river segment" means a surface water or segment thereof designated as a recreational river under the federal Wild and Scenic Rivers Act, United States Code, title 16, sections 1271 to 1287.

    Federal antidegradation regulations provide for the maintenance and protection of water quality for waters considered to be outstanding national resources:

    > *…such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance…"* 40 CFR § 131.12(a)(3)

    It is therefore reasonable that recreational rivers designated under the federal Wild and Scenic Rivers Act (16 U.S.C. §§ 1271-1287) (Exhibit 72)[72] receive protection as outstanding resources. Specifically, federally designated recreational river segments are protected under the restricted category of ORVWs which requires water quality protection necessary to maintain their recreational characteristics.

    The proposed definition provides reference to the federal program (i.e., federal Wild and Scenic Rivers Act) under which recreational river segments are designated and which describe the exceptional characteristics that make them outstanding resources. The federal Wild and Scenic Rivers Act defines "*recreational river areas*" as:

    > *…those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.* 16 U.S.C. § 1273(b)(3) (Exhibit 72)

19. Subp. 19. **Federally designated scenic river segment.** "Federally designated scenic river segment" means a surface water or segment thereof designated as a scenic river under the federal Wild and Scenic Rivers Act, United States Code, title 16, sections 1271 to 1287.

    Just as federal recreational river segments designated under the federal Wild and Scenic Rivers Act are protected as outstanding resources, scenic rivers designated under the same Act receive protection as restricted ORVWs. The protection of federally designated scenic river segments requires water quality protection necessary to maintain their

scenic characteristics. The proposed definition provides reference to the federal program under which scenic river segments are designated and that describes the exceptional characteristics that make them outstanding resources. The federal Wild and Scenic Rivers Act defines "*scenic river areas*" as:

> *…those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.* 16 U.S.C. § 1273(b)(2) (Exhibit 72)

20. Subp. 20. **Federally designated wild river segment.** "Federally designated wild river segment" means a surface water or segment thereof designated as a wild river under the federal Wild and Scenic Rivers Act, United States Code, title 16, sections 1271 to 1287.

    The federal Wild and Scenic Rivers Act defines "*wild river areas*" as:

    > *…those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.* 16 U.S.C. § 1273(b)(1) (Exhibit 72)

    Federally designated wild river segments are protected as prohibited ORVWs because the federal Wild and Scenic Rivers Act's definition makes explicit reference to unpolluted waters. The protection of prohibited ORVWs is equivalent to Tier 3 protection specified under 40 § CFR 131.12(a)(3) – meaning that new or expanded discharges to federally designated wild river segments are not allowed.

21. Subp. 21. **High water quality or of high quality.** "High water quality" or "of high quality" means water quality that exceeds, on a parameter-by-parameter basis, levels necessary to support the protection and propagation of aquatic life and recreation in and on the water.

    Federal water quality standard regulations require states to develop designated use classifications that:

    > *…take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation.* 40 CFR § 131.10(a) (Exhibit 73)[73]

    Minnesota's Class 2 Aquatic Life and Recreation beneficial use, defined at Minn. R. 7050.0140, subp. 3, provides for the protection and propagation of aquatic life, and protection of recreation in and on the water.

    Federal antidegradation regulations state that:

    > *Where the quality of the waters exceeds levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to*

> *accommodate important economic or social development in the area in which the waters are located.* 40 CFR § 131.12(a)(2)

As used here, the term "*levels*" generally means numeric or narrative water quality standards necessary to protect Class 2 beneficial uses. The lack of a Class 2 numeric standard does not preclude Tier 2 protection for a given parameter. For example, standards may not yet exist for some contaminants of emerging concern. In such situations the MPCA will need to make case-by-case decisions regarding the level of water quality necessary to protect aquatic life and recreation. The MPCA anticipates that these situations will be very rare. As with other aspects of antidegradation review, the public and other interested entities will have the opportunity to comment on the MPCA's case-by-case decisions.

It is also important to note that human health is tied to Class 2 beneficial uses where fish consumption and recreation are at issue. For example, the definition of high water quality includes that increment of water quality better than the mercury numeric standard established for safe fish consumption.

The proposed definition differs from that found in 40 CFR § 131.12(a)(2) in that the proposed definition uses the term "*aquatic life*" rather than "*fish, shellfish, and wildlife*" as found in regulation. The use of the term "*aquatic life*" is reasonable because it is a term used throughout Minnesota Statutes and Rules. For example, Minn. Stat. 115.01 uses the term "*aquatic life*" as part of the definition of water pollution; and Minn. R. 7050.0140 subp. 3 defines Class 2 waters to be those protected for "*aquatic life and recreation.*" The term "*aquatic life*" in the proposed rule is intended to have the same meaning as "*aquatic life*" in Minn. Stat. 115.01 and Minn. R. 7050.0140, provisions that were previously adopted by Minnesota to implement the Clean Water Act water quality standards provisions. Consistency in terms in such closely related provisions is reasonable.

Federal antidegradation regulations at 40 CFR § 131.12(a)(2)(i) provides states with the option of identifying high water quality either on a parameter-by-parameter basis or on a water body-by-water body basis. The EPA describes each approach as follows:

> *Existing approaches for identifying high quality waters fall into two basic categories: (1) pollutant-by-pollutant approaches, and (2) water body-by-water body approaches. States and Tribes following the first approach determine whether water quality is better than applicable criteria for specific pollutants that would be affected by the proposed activity. Thus, available assimilative capacity for any given pollutant is always subject to tier 2 protection, regardless of whether the criteria for other pollutants are satisfied. Such determinations are made at the time of the antidegradation review (i.e., as activities that may degrade water quality are proposed). States and Tribes following the second approach weigh a variety of factors to judge a water body segment's overall quality. Such determinations may be made prior to the antidegradation review (i.e., the State or Tribe may assign ''high quality'' designations in the State or Tribal standards), or during the course of the antidegradation review. Under this water body-by-water body approach, sometimes referred to as the ''designational'' approach, assimilative capacity for a given pollutant may not be subject to tier 2*

protection if, overall, the segment is not deemed ''high quality.''
Advanced Notice of Proposed Rulemaking, 63 Fed. Reg. 36741 (1998), pp. 36782.

The MPCA is proposing to identify and protect high water quality on a parameter-by-parameter basis providing clarity that individual parameters must be evaluated independently. A water body may be considered of high quality for one parameter, yet not support aquatic life and recreation for another. Judgments of high quality are not made for a water body as a whole.

Identifying and protecting high water quality is reasonable for the following reasons.

- The parameter-by-parameter approach is easier to implement because it eliminates the need for an overall assessment weighing various qualitative criteria.
- Decisions are driven by individual data points rather than judgments concerning a water body's overall value or quality, and thus may be less susceptible to challenge.
- Compared to the water body-by-water body approach, the parameter-by-parameter approach is more likely to result in more waters receiving some degree of Tier 2 protection because it would cover waters that are clearly not attaining goal uses (i.e., waters which are not supporting the ''fishable/swimmable'' goal uses but that still possess assimilative capacity for one or more parameters).
- Under the water body-by-water body approach, decisions regarding whether a water is of high quality are typically made in advance of a proposed activity and are designated in rule. Pre-designating water bodies avoids having to make high water quality decisions at the time a prospective applicant seeks authorization to lower water quality. However, pre-designating high water quality waters would be a daunting task given the amount of Minnesota's surface water resources.
- Under the water body-by-water body approach, a potential problem can arise if the process of identifying high quality waters becomes so complicated, resource-intensive, and data-intensive that a primary purpose of Tier 2 protection (i.e., seeking to maintain and protect existing quality by identifying whether there are reasonable less degrading or non-degrading alternatives) is not adequately accomplished. In other words, when limited resources available for water quality protection are spent on the identification process, it may be at the expense of analysis that could avoid and minimize degradation.

Although the MPCA currently practices a parameter-to-parameter approach when conducting nondegradation reviews, it is not explicit in the current rules. Articulating how to identify high water quality provides greater clarity in the proposed rules.

22. Subp. 22. **Loading.** "Loading" means the quantity of pollutants, expressed as mass, resulting from a discharge or proposed discharge to a surface water.

    Defining this term is needed because an anticipated net increase in loading is a means by which antidegradation procedures are triggered. The term is also important to the alternatives analysis where loading offsets may be used to avoid and minimize degradation. The definition limits loading to mass. In scientific terms, mass is commonly used to express the measurement of the amount of material contained and causes it to have weight in a gravitational field (see http://www.merriam-webster.com/dictionary/mass). Limiting loading to mass is reasonable because it

provides a practical and tangible means to quantify the amount of pollutants (defined in proposed subp. 31) entering a surface water.

23. Subp. 23. **Loading offset.** "Loading offset" means reductions in loading from regulated or unregulated activities, which reductions create additional capacity for proposed net increases in loading. A loading offset must occur concurrent with or prior to the proposed net increase in loading and must be secured with binding legal instruments between any involved persons for the life of the project that is being offset.

    This definition is needed to describe a means by which net increases in loading to high water quality may be avoided or minimized. This is accomplished by creating additional loading capacity in the surface water where a net increase in loading is proposed. In order for this to happen there must be a reduction in loading upstream or up-gradient of the proposed loading. The definition includes two stipulations. The first is that the offset must occur concurrent with or prior to the proposed net increase in loading. This is reasonable because it avoids possible environmental damage, as well as the administrative burden of enforcing the load reduction after the net increase in loading has already occurred. The second stipulation is that the offset must be secured using binding legal instruments between the parties involved in the offset. Offsets involving only regulated activities could rely on applicable control documents to secure the load reductions. The second stipulation is particularly needed for offsets involving unregulated activities which are not subject to control documents.

24. Subp. 24. **Measurable change.** "Measurable change" means the practical ability to detect a variation in water quality, taking into account limitations in analytical technique and sampling variability.

    Evaluations of degradation require measurement of changes in water quality. The proposed definition includes the phrase "*…practical ability to detect a variation in water quality…*" to reasonably limit the analysis of water quality changes to standard procedures that are commonly available. It is also reasonable to allow for limitations in analytical procedures and for sampling variability to ensure confidence in measured outcomes.

25. Subp. 25. **National pollutant discharge elimination system or NPDES.** "National pollutant discharge elimination system permit" or "NPDES permit" means an authorization issued by the agency under sections 307, 318, 402, and 405 of the Clean Water Act, United States Code, title 33, sections 1317, 1328, 1342, and 1345. A general NPDES permit means an NPDES permit issued pursuant to Code of Federal Regulations, title 40, section 122.28.

    Minn. Stat. § 115.03 grants the MPCA authority to administer the NPDES program. Permits issued under the NPDES program are control documents granted by the MPCA to govern discharges of pollutants to waters of the state. Under this program the MPCA has the authority to establish standards, procedures, rules and permit conditions that are consistent with, and therefore not less stringent than, the provisions established under http://www.gpo.gov/fdsys/pkg/USCODE-2011-title33/pdf/USCODE-2011-title33-chap26-subchapIV-sec1342.pdf.

26. Subp. 25. **Net increases in loading or other causes of degradation.** "Net increases in loading or other causes of degradation" means:

    A. when applied to a proposed activity that is not regulated by an existing control document, any loading or other causes of degradation resulting from the proposed activity; or
    B. when applied to a proposed activity that is regulated by an existing control document, an increase in loading or other causes of degradation exceeding the maximum loading or other causes of degradation authorized through water pollution control conditions specified in the existing control document as of the effective date.

    Defining this term is needed because an anticipated net increase in loading or other causes of degradation is the means by which antidegradation procedures are triggered. Terms that are found within this definition and that are defined in the proposed rule include: "*loading*"; "*degradation*"; "*proposed activity*"; "*control document*"; "*water pollution control conditions*"; and "*effective date.*"

    It is reasonable to include the phrase "*other causes of degradation*" because an increase in loading, as defined, may not be the sole cause of degradation. For example a regulated activity that causes an increase in *E. coli* numbers or temperature within a surface water cannot reasonably be expressed in mass. Physical alterations to a surface water – the extreme being the removal of an entire water body – are also causes of degradation not quantifiable in terms of mass loading.

    Item A applies to new regulated activities (i.e., those not previously authorized through a control document). It is reasonable for these activities to undergo antidegradation procedures because the proposed loading or other causes of degradation resulting from the new activity was not previously regulated by a control document.

    Item B applies to regulated activities that are seeking to expand and that expansion is anticipated to result in a net increase in loading or other causes of degradation. The definition clarifies that changes in water pollution control conditions resulting in an exceedance of the maximum loading or other causes of degradation authorized in the existing control document results in a net increase in loading or other causes of degradation – thus triggering antidegradation procedures. An example of a net increase in loading for a wastewater discharge is when a change in numeric effluent limits causes an increase in the mass of a pollutant being discharged to a surface water. An example of how a net increase in loading would trigger antidegradation procedures for stormwater activities would be an increase in population and/or impervious surfaces within the regulated entity's site or jurisdiction without corresponding BMPs to prevent the net increase.

27. Subp. 27. **Outstanding resource value waters.** "Outstanding resource value waters" mean waters of the state designated under part 7050.0335 for their exceptional characteristics.

    Federal antidegradation regulations require that:

    > *Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and*

> *waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.* 40 CFR § 131.12(a)(3)

Minnesota designates waters with exceptional characteristics as ORVWs, of which there are two categories; "*prohibited*" and "*restricted.*" The current rule's definition of "*outstanding resource value waters*" broadly identifies designated ORVWs:

> *"Outstanding resource value waters" are waters within the Boundary Waters Canoe Area Wilderness, Voyageur's National Park, and Department of Natural Resources designated scientific and natural areas, wild, scenic, and recreational river segments, Lake Superior, those portions of the Mississippi River from Lake Itasca to the southerly boundary of Morrison County that are included in the Mississippi Headwaters Board comprehensive plan dated February 12, 1981, and other waters of the state with high water quality, wilderness characteristics, unique scientific or ecological significance, exceptional recreational value, or other special qualities which warrant stringent protection from pollution.* Minn. R. 7050.0180, subp. 2A

Broadly listing the ORVWs in definition is redundant because the detailed list of ORVWs is found in Minn. R. 7050.0180, subp. 3 through 7050.0180, subp. 6b. The proposed rules remove the redundancy by simply providing a reference to the part of the proposed rules (proposed Minn. R. 7050.0335) where the ORVWs are listed.

28. Subp. 28. **Parameter.** "Parameter" means a chemical, physical, biological or radiological characteristic used to describe water quality conditions.

    The definition of "*parameter*" is needed to describe how water quality conditions are to be expressed. It reasonably includes chemical, physical, biological or radiological characteristics which ties this definition to the definition "*degradation,*" which, in turn is tied to the statutory definition of "*pollution of water,*" or "*water pollution,*" as defined in Minn. Stat. § 115.01, subd. 13(b).

29. Subp. 29. **Person.** "Person" has the meaning given under Minnesota Statutes, section 115.01, subdivision 10.

    Minnesota water pollution control statutes define "*person*" as:

    > *… the state or any agency or institution thereof, any municipality, governmental subdivision, public or private corporation, individual, partnership, or other entity, including, but not limited to, association, commission or any interstate body, and includes any officer or governing or managing body of any municipality, governmental subdivision, or public or private corporation, or other entity.* Minn. Stat. § 115.01, subd. 10

    Referencing the statutory definition instead of repeating statutory language is Minnesota rule drafting convention.

30. Subp. 30. **Physical alteration.** "Physical alteration" means a physical change that degrades surface waters, such as the dredging, filling, draining, or permanent inundation of a surface water.

Physical alterations are a potential cause of degradation. Regulated activities that cause physical alterations are therefore subject to antidegradation procedures. The proposed definition originates from the definition found in Minnesota Rules which define "*physical alteration*" as:

> *… dredging, filling, draining, or permanent inundating of a wetland.* Minn. R. 7053.0135*,* subp. 8

The proposed definition does not limit physical alterations to activities described in Minn. R. 7053.0135, subp. 8 because there are other degrading activities than those specifically mentioned. For example reductions in water volume may degrade a water to a point where aquatic life or recreation is adversely impacted. The proposed definition replaces the word "*wetland*" with "*surface water*" because physical alterations resulting from regulated activities are not limited to wetlands. The proposed definition limits physical alterations to activities which degrade water existing quality. The definition of "*degrade*" in turn is limited to measurable changes:

> *… to existing water quality made or induced by human activity resulting in* ***diminished*** *chemical, physical, biological, or radiological conditions of surface waters…Proposed Minn. R. 7050.0255, subp. 11 (emphasis added)*

Thus restoring a degraded resource by reestablishing its hydrology is not a physical alteration as defined in the proposed rules.

31. Subp. 31. **Pollutant.** "Pollutant" has the meaning given under Minnesota Statutes, section 115.01, subdivision 12.

    Minnesota Pollution Control statutes define "*pollutant*" as:

    > *… any sewage, industrial waste, or other wastes, as defined in this chapter, discharged into a disposal system or to waters of the state* Minn. Stat. § 115.01 subd. 12

    Referencing the statutory definition instead of repeating statutory language is Minnesota rule drafting convention.

32. Subp. 32. **Prohibited outstanding resource value waters.** "Prohibited outstanding resource value waters" means surface waters identified in part 7050.0335, subparts 3 and 4.

    Including this definition is reasonable because it points the reader to parts of the proposed rules (Minn. R. 7050.0335, subps. 3 and 4) where prohibited ORVWs are identified. Prohibited ORVWs receive the level of protection found in federal antidegradation regulations at 40 CFR § 131.12(a)(3), which requires that the high water quality of outstanding national resource waters be "*maintained and protected*". This level of protection, often referred to as Tier 3 protection, is reserved for waters that possess extraordinary or unique water quality characteristics. In most cases these waters have minimal human impacts. The EPA interprets "*maintained and protected*" as allowing no new or increased discharges that would result in lower water quality, except for when discharges result in only temporary changes to water quality (Water Quality Standards Handbook, Second Edition, Chapter 4, U.S. EPA (1994), p. 10).

33. Subp. 33. **Proposed activity.** "Proposed activity" means a regulated activity for which control document authorization is being requested.

    This definition provides clarity that any proposed activity is a regulated activity. Including and defining "*proposed activity*" eliminates the need to repeatedly say "*proposed **regulated** activity,*" thus reducing the length of the proposed rule.

34. Subp. 34. **Prudent alternative.** "Prudent alternative" means a pollution control alternative selected with care and sound judgment.

    Like the term "*feasible alternative,*" "*prudent alternative*" is an important concept in the alternatives analysis. There is a need to define "*prudent alternative*" so applicants have guidance regarding the selection of alternatives that minimize degradation.

    Although this term is found in the current rule governing nondegradation for ORVWs (Minn. R. 7050.0180) and other MPCA water rules, it is not defined in those rules. It is, however, defined in MPCA rules governing solid waste planning as an alternative "*… that is selected with care and sound judgment.*" Minn. R. 9215.0510, subp. 16a. The proposed definition is essentially the same as that found in Minn. R. 9215.0510 and fits well with the antidegradation alternatives analysis.

    The SONAR supporting amendments to Minn. R. ch. 9215 provides the following explanation:

    > *The definition of prudent is reasonable because it is based on the fifth and seventh meanings of "prudent" stated in The American Heritage Dictionary of the English Language: Fourth Edition, 2000. The fifth meaning is that of being judicious, that is, "[h]aving or exhibiting sound judgment" while the seventh meaning is that of providence, that is, "[c]are or preparation in advance; foresight." Statement of Need and Reasonableness, Proposed Revisions to Rules Governing Solid Waste Management Planning Requirements, Minnesota Rules Chapter 9215* (MPCA, 2007), p. 20 (Exhibit 71)

    The proposed definition provides flexibility in the alternatives analysis providing that what may be prudent for one project may not be for another because of demographic, geologic, or economic differences. The definition allows for considerations that are unique to a specific project and the applicant's ability to implement alternatives that minimize degradation. For example, infiltration of untreated contaminated stormwater may not be prudent, even when it is technically feasible and/or affordable.

    Cost effectiveness may be a consideration in the determination of whether the implementation of a given alternative is prudent. This differs from affordability considerations addressed in the definition of "*feasible alternative*". Cost effectiveness, in regard to the consideration of alternatives, refers to the amount of resources required to prevent or treat a given unit of pollutant. Although a given alternative may be affordable it may not be prudent based on its cost effectiveness.

35. Subp. 35. **Regulated activity.** "Regulated activity" means an activity that requires a control document.

    The proposed definition lends clarity to the rules' scope – antidegradation procedures are required for activities requiring MPCA authorization to discharge to, or otherwise

impact, surface waters of the state when the activity is anticipated to result in a net increase in loading or other causes of degradation. Impacts to water quality are regulated through the issuance and enforcement of control documents.

36. Subp. 36. **Restricted outstanding resource value waters.** "Restricted outstanding resource value waters" mean surface waters identified in part 7050.0335, subparts 1 and 2.

    Including this definition is reasonable because it points the reader to parts of the proposed rules (Minn. R. 7050.0335, subps. 1 and 2), where restricted ORVWs are listed. Minnesota, like a number of other states, has elected to provide a fourth level of protection between Tiers 2 and 3. This extra Tier in a state's antidegradation policy is permissible under section 510 of the CWA (Federal Water Pollution Control Act, 33 U.S.C. § 1370 (1972, as amended). (Exhibit 74)[74]

    Like the prohibited category of ORVWs, restricted waters possess extraordinary or unique characteristics important to the nation or state. Whereas prohibited waters are designated because of outstanding water quality, some restricted ORVWs are designated for reasons other than exceptional water quality. For example, segments of the Minnesota River are designated as a restricted ORVW because of a prior designation under the state's Wild and Scenic Act as scenic or recreational river segments. The water quality within these segments may not be exceptional and might not even meet water quality standards for some parameters.

37. Subp. 37. **Scientific and natural areas.** "Scientific and natural areas" mean areas listed in part 7050.0335, subpart 3, item D and described under Minnesota Statutes, section 86A.05, subdivision 5, paragraph (b).

    Including this definition is reasonable because it points the reader to where scientific and natural areas are listed (proposed Minn. R. 7050.0335, subp. 3(D)) and provides reference (Minn. Stat. § 86A.05, subd. 5(b)) to how scientific and natural areas are identified and the exceptional characteristic that make them prohibited ORVWs.

38. Subp. 38. **Section 303(d) of the Clean Water Act.** "Section 303(d) of the Clean Water Act" means, pursuant to United States Code, title 33, section 1313(d), a requirement for states, territories and authorized tribes to develop lists of waters that do not meet applicable water quality standards, establish priority rankings, and develop total maximum daily loads for these waters.

    The definition is reasonable because it identifies the federal mandate (i.e., CWA section 303(d) (Exhibit 13) requiring the MPCA to identify waters within Minnesota's boundaries where current pollution control technologies alone cannot meet the water quality standards. Every two years, the MPCA is required to submit a list of these impaired waters to EPA for approval. The impaired waters are prioritized based on the severity of the pollution and the designated use of the water body. The MPCA must establish the total maximum daily load(s) of the pollutant(s) in the water body for impaired waters on the list.

    This definition is important to the proposed antidegradation standards when changes in existing water quality are not reasonably quantifiable (proposed Minn. R. 7050.0270).

Under these standards, Class 2 surface waters not identified as impaired are considered to be of high quality.

39. Subp. 39. **Section 401 certification.** "Section 401 certification" means an authorization issued by the commissioner under section 401 of the Clean Water Act, United States Code, title 33, section 1341.

    Anyone seeking a federal license or permit for any activity that may result in a discharge to waters of the United States must first obtain a CWA section 401 certification to ensure compliance with state water quality standards. Because antidegradation provisions are a part of the water quality standards program, any activity requiring a section 401 certification is subject to antidegradation provisions. The proposed definition provides reference to the federal law authorizing section 401 certifications.

40. Subp. 40. **Section 404 permit.** "Section 404 permit" means an authorization issued under section 404 of the Clean Water Act, United States Code, title 33, section 1344. A general section 404 permit means a section 404 permit issued pursuant to section 404 of the Clean Water Act, United States Code, title 33, section 1344, paragraph (e).

    Antidegradation requirements are implemented through the issuance and enforcement of control documents for regulated activities which are anticipated to impact the state's surface waters. Section 404 of the CWA establishes programs to regulate the discharge of dredged and fill material into waters of the United States. The responsibility for administering and enforcing section 404 is shared by the ACE and the EPA. The ACE administers the day-to-day program, including individual permit decisions and jurisdictional determinations, developing policy and guidance, and enforcing section 404 provisions. The EPA develops and interprets environmental criteria used in evaluating permit applications, identifies activities that are exempt from permitting, reviews and comments on individual permit applications, enforces section 404 provisions, and has authority to veto ACE permit decisions. The vast majority of CWA section 401 certifications issued by the MPCA are for section 404 permits.

    Section 404 of the CWA provides for two basic types of authorizations: individual and general. Individual section 404 permits are issued for activities that may have significant environmental impacts. General permits are issued for activities that are considered to be similar in nature and will cause only minimal adverse environmental effects when performed separately or cumulatively (40 CFR § 230.7) (Exhibit 75)[75]. The proposed rules include separate antidegradation procedures for section 401 certification of individual and general section 404 permits.

    The proposed definition reasonably provides reference to the federal law authorizing section 404 permits.

41. Subp. 41. **State designated recreational river segment.** "State designated recreational river segment" means a surface water or segment thereof designated as a recreational river under the Minnesota Wild and Scenic Rivers Act, Minnesota Statutes, sections 103F.301 to 103F.345, and described under Minnesota Statutes, section 103F.311, subdivision 4.

Federal antidegradation regulations provide for the maintenance and protection of water quality for waters considered to be outstanding national resources:

> *…such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance…"* 40 CFR § 131.12(a)(3)

It is therefore reasonable that recreational rivers designated under the Minnesota Wild and Scenic Rivers Act (Minn. Stat. §§ 103F.301 to 103F.345) receive protection as outstanding resources. Specifically, state designated recreational river segments are protected under the restricted category of ORVWs which requires water quality protection necessary to maintain their recreational characteristics.

The proposed definition provides reference to the statute which defines "*recreational rivers*" as:

> *… those rivers that may have undergone some impoundment or diversion in the past and may have adjacent lands that are considerably developed, but that are still capable of being managed so as to further the purposes of Minn. Stat. §§ 103F.301 to 103F.345.* Minn. Stat. § 103F.311, subd. 4

42. Subp. 42. **State designated scenic river segment.** "State designated scenic river segment" means a surface water or segment thereof designated as a scenic river under the Minnesota Wild and Scenic Rivers Act, Minnesota Statutes, sections 103F.301 to 103F.345, and described under Minnesota Statutes, section 103F.311, subdivision 7.

    Just as state recreational river segments designated under Minn. Stat. ch. 103F are protected as outstanding resources, scenic rivers designated under the same statute already receive protection as restricted ORVWs. The protection of state designated scenic river segments requires water quality protection necessary to maintain their scenic characteristics. The proposed definition provides reference to the statute which defines "*scenic rivers*" as:

    > *… those rivers that exist in a free-flowing state and with adjacent lands that are largely undeveloped.* Minn. Stat. § 103F.311, subd. 7

43. Subp. 44. **State designated wild river segment.** "State designated wild river segment" means a surface water or segment thereof designated as a wild river under the Minnesota Wild and Scenic Rivers Act, Minnesota Statutes, sections 103F.301 to 103F.345, and described under Minnesota Statutes, section 103F.311, subdivision 9.

    The proposed definition provides reference to state statute which defines "*wild rivers*" as:

    > *… those rivers that exist in a free-flowing state, with excellent water quality, and with adjacent lands that are essentially primitive.* Minn. Stat. § 103F.311, subd. 9

    State designated wild rivers are protected as prohibited ORVWs because the statutory definition makes explicit reference to the excellent water quality of these waters. The

protection of prohibited ORVWs is equivalent to Tier 3 protection specified under 40 § CFR 131.12(a)(3) – meaning that new or expanded discharges to state designated wild river segments are not allowed.

44. Subp. 44. **Total maximum daily load or TMDL.** "Total maximum daily load" or "TMDL" has the meaning given under Minnesota Statutes, 114D.15, subdivision 10.

    Minn. Stat. § 114D.15 defines "total maximum daily load" as:

    > *… a scientific study that contains a calculation of the maximum amount of a pollutant that may be introduced into a surface water and still ensure that applicable water quality standards for that water are restored and maintained. A TMDL also is the sum of the pollutant load allocations for all sources of the pollutant, including a wasteload allocation for point sources, a load allocation for nonpoint sources and natural background, an allocation for future growth of point and nonpoint sources, and a margin of safety to account for uncertainty about the relationship between pollutant loads and the quality of the receiving surface water. "Natural background" means characteristics of the water body resulting from the multiplicity of factors in nature, including climate and ecosystem dynamics, that affect the physical, chemical, or biological conditions in a water body, but does not include measurable and distinguishable pollution that is attributable to human activity or influence. A TMDL must take into account seasonal variations.* Minn. Stat. § 114D.15, subd. 10

    This term is used in the proposed rules within the definition of "*control document*", which intentionally excludes TMDLs as control documents. The proposed definition is reasonable because it is included in state statute and thus creates consistency with other state programs involved in water quality protection.

45. Subp. 45. **Unregulated activity.** "Unregulated activity" means an activity that does not require a control document.

    This definition is needed to distinguish between activities that require control documents from those that do not. Antidegradation regulatory requirements are implemented through the issuance of control documents governing regulated activities. The proposed rules provide a means of meeting antidegradation requirements through the application of loading offsets, including those involving unregulated activities.

46. Subp. 46. **Water pollution control conditions.** "Water pollution control conditions" means effluent limitations as defined in part 7001.1020, subpart 13 or other conditions specified in a control document that limits water pollution as defined in Minnesota Statutes, section 115.01, subdivision 13.

    Defining this term is needed because it is critical to the understanding of "*control documents*" (defined in proposed subp. 10) which are the means through which antidegradation requirements are implemented. The definition is reasonable because Minn. Stat. § 115.03, subd. 1 gives the MPCA regulatory authority to administer and

enforce all laws related to pollution of any of the waters of the state. "*Pollution of water*" and "*water pollution*" is defined in statute as:

> *(a) the discharge of any pollutant into any waters of the state or the contamination of any waters of the state so as to create a nuisance or render such waters unclean, or noxious, or impure so as to be actually or potentially harmful or detrimental or injurious to public health, safety or welfare, to domestic, agricultural, commercial, industrial, recreational or other legitimate uses, or to livestock, animals, birds, fish or other aquatic life; or (b) the alteration made or induced by human activity of the chemical, physical, biological, or radiological integrity of waters of the state.* Minn. Stat. § 115.01, subd. 13

For NPDES permits, the means through which water pollution is controlled is through the application of effluent limitations. An "*effluent limitation*" pertaining to NPDES permits is defined as:

> *…a restriction established by rule or permit condition on quantities, discharge rates, and concentrations of pollutants that are discharged from point sources into waters of the state.* Minn. R. 7001.1020, subp. 13

Examples of restrictions in the above definition include numeric effluent limitations to control wastewater treatment discharges and best management practices (BMPs) to control stormwater discharges. While numeric effluent limits generally restrict the release of pollutants in quantitative terms, "*best management practices*" are:

> *…practices to prevent or reduce the pollution of the waters of the state, including schedules of activities, prohibitions of practices, and other management practice, and also includes treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge, or waste disposal or drainage from raw material storage.* (Minn. R. 7001.1020, sub. 5)

40 CFR § 122.44 (Exhibit 76)[76] requires that each NPDES permit contain applicable conditions, including:

> *Best management practices (BMPs) to control or abate the discharge of pollutants when:*
>
> *(1) Authorized under section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities;*
>
> *(2) Authorized under section 402(p) of the CWA for the control of storm water discharges;*
>
> *(3) Numeric effluent limitations are infeasible; or*
>
> *(4) The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.* 40 CFR § 122.44 (k) (Exhibit 76)

In EPA's revisions to NPDES storm water regulations the federal agency determined:

> *…that pollutants from wet weather discharges are most appropriately controlled through management measures rather than end-of-pipe numeric effluent limitations.* 64 Fed. Reg., 68722, p. 68753 (Exhibit 77)[77]

Specific to NPDES large and medium municipal separate storm sewer systems (MS4) discharges, 40 CFR § 122.26(d)(2)(iv) (Exhibit 78)[78] requires state NPDES programs to reduce pollutant discharges to the maximum extent practicable (MEP). These regulations do not define MEP allowing for flexibility in MS4 permitting. The pollutant reductions that represent MEP may be different for each MS4, given the unique local hydrologic and geologic concerns that may exist and the differing possible pollutant control strategies. The MEP standard for identifying appropriate BMPs fits well with antidegradation requirements to minimize high water quality degradation to the extent prudent and feasible.

Besides effluent limitations the proposed definition includes *"…other conditions specified in a control document…"* as a means to control water pollution. This is reasonable because the definition of effluent limitation in Minn. R. 7001.1020, subp. 13 is limited to NPDES permits, whereas antidegradation requirements apply to all regulated activities such as those regulated under section 401 certifications. Section 401 of the CWA requires anyone who wishes to obtain a federal license or permit for any activity that may result in a discharge to waters of the United States to obtain a section 401 certification to ensure proposed projects comply with the state's water quality standards. Minn. R. 7001.1470 requires that section 401 certifications issued by the MPCA include terms and conditions necessary to achieve compliance with applicable Minnesota or federal statutes or rules.

47. Subp. 47. **Water quality standard.** "Water quality standard" means a parameter concentration, level, or narrative statement, representing a quality of water that supports a beneficial use. When water quality standards are met, water quality will generally protect the beneficial use.

    Although the term "*water quality standard*" is found in Minn. R. ch. 7050 and other state rules governing water quality, it is not defined in Minn. R. 7050.0130 or Minn. Stat. § 115.01. The proposed definition is reasonable because it is consistent with the federal definition of "*criteria*". The term "*water quality standard*" as used in Minn. R. ch. 7050 has the same meaning as the federal term "*criteria*" which is defined in federal regulations as:

    > *… elements of State water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated use.* 40 CFR § 131.3(b) (Exhibit 68)

C. Determining existing water quality (Proposed Minn. R. 7050.0260)

Subpart 1. **Methods.** Existing water quality shall be determined using methods described in items A to C. The methods are listed in descending order of priority. Lower priority methods shall be used only if higher priority methods are not

reasonably available. More than one method shall be used when a single method does not adequately describe existing water quality.

A. Using commissioner-approved monitoring data that exist at the time the determination of existing water quality is undertaken.
B. Monitoring surface waters, provided that samples are collected in a manner and place and of such type, number, and frequency as may be considered necessary by the commissioner to adequately reflect the condition of the surface waters. Samples shall be collected, preserved, and analyzed following accepted quality control and quality assurance methods and according to the procedures in part 7050.0150, subpart 8.
C. Identifying reference surface waters that have similar physical, chemical, and biological characteristics and similar impacts from regulated and unregulated activities.

Subp. 2. **Consideration of existing regulated activities.** For surface waters impacted by activities that are regulated by existing control documents, existing water quality includes surface water conditions that are anticipated at loadings or other causes of degradation authorized in the applicable control documents.

The proposed rules provide a means by which the MPCA determines whether and to what extent existing water quality may be degraded. Therefore, it is necessary for the MPCA to have an understanding of existing conditions before making its determinations, when assessments of existing water quality are reasonable. (A discussion on when assessments of existing water quality are reasonable is presented in Section 5.D.)

Specific components of antidegradation protection that require an understanding of existing conditions include the following:

- The determination of whether surface waters are of high quality.
- The evaluation of the impacts to existing high water quality including the consumption of available assimilative capacity.
- The determination of whether proposed degradation of high water quality is needed for important economic or social development. Without an understanding of existing water quality, it would be impossible for the MPCA to weigh degradation of high water quality against the economic and social benefits resulting from the proposed activity.
- The public's ability to provide meaningful comments regarding the degradation of high water quality.
- The determination of existing uses.

There is also legal precedent for the need to determine existing water quality in antidegradation determinations. In 2005, the Minnesota Court of Appeals found that the MPCA must base its antidegradation analyses on existing conditions, stating that:

> *Without defining what the existing quality of the water is, it is not possible to evaluate whether [a] proposed discharge has been restricted to the extent necessary to preserve that quality…* MCEA v. MPCA, City of Princeton, 696 N.W.2d 95, 108 (Minn. App. 2005), p. 108 (Exhibit 60)

In a 1992 decision, the Ohio Supreme Court ruled that the state must protect high quality (i.e., Tier 2) waters at their current levels unless antidegradation requirements are met. The Court noted that:

> *Even where the prescribed technology is applied, a point source may not discharge effluent which would violate the applicable water quality standards. In the present case, the applicable water quality standard is the* ***current ambient condition*** *of Blacklick Creek inasmuch as the antidegradation policy establishes that quality as the benchmark.* Columbus and Franklin County Metropolitan Park District v. Shank, 65 Ohio St. 3d 86, 101 (Oh. Sup. Ct. 1992) (emphasis added.) (Exhibit 79)[79]

The proposed approach is reasonable because it provides and prioritizes a number of methods by which existing water quality may be determined. The first choice (Item A) is to use existing and reliable monitoring data, eliminating the need for an applicant to expend resources on monitoring ambient water quality where reliable information exists. The MPCA is available to assist applicants in determining if and what monitoring information is available for the determination of existing water quality. Sources of information may include databases maintained by the EPA, the MPCA and other entities that compile and store reliable water quality monitoring information. Much of this information will likely come from ongoing ambient monitoring programs underway at the MPCA. The MPCA continues to make assessment of the state's waters a priority, and applicants will benefit from these efforts.

When previously collected monitoring data are nonexistent, incomplete, or are of inadequate quality, monitoring is the second choice (Item B) for determining existing quality. This will require the applicant to work closely with MPCA staff in developing protocols that will result in data of sufficient quality to determine existing water quality. Specific protocols are not included in rule for the reasons described below.

- The MPCA cannot predict which parameters will need to be assessed due the wide range of regulated activities seeking coverage under individual control documents and the unique characteristics of each surface water.
- Variability in environmental conditions (e.g., changes in stream flow and volume).
- Variation among the analytical techniques for each assessed parameter and the degree of confidence associated with each technique.

Item B requires sample collection, preservation and analysis be conducted according to procedures in Minn. R. 7050.0150, subp. 8. This requirement is reasonable because the referenced procedures have already been established in rule and are currently implemented in the determination water quality conditions.

The MPCA intends to develop further guidance as it and the regulated community gain more experience in data collection for the purpose of establishing existing water quality for antidegradation assessments. It is likely that methods and protocols will draw from guidance currently used to assess waters for water quality impairments as required under CWA section 303(d) (Exhibit 13).

The final option is to compare the surface water which will be impacted with a similar reference water body (Item C). This is the least preferred option because it may be difficult to find monitoring data from truly representative waters because of differing physical,

chemical, and biological characteristics and the diverse activities that impact each water body. However, there may be situations where this type of monitoring data can accurately characterize the water being considered, or where this type of reference water comparison can, in combination with the other types of monitoring data, help to establish existing water quality.

The proposed approach is reasonable also because it is in general alignment with EPA guidance. Guidance from EPA Region 9 recommends the following approach to determining existing water quality for the purpose of antidegradation reviews:

> *First, the State should develop procedures to document the degree to which water quality exceeds that necessary to protect the uses. Ambient monitoring data can be used to provide this documentation. States must adopt procedures to assure that, where little or no data exists, adequate information will be available to determine the existing quality of the water body or bodies, which could be adversely affected by the proposed action.* Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12, U.S. EPA Region 9 (1987), p. 6 (Exhibit 80)[80]

EPA Region 8 guidance suggests that states focus on the pollutants of concern believed to be in the discharge and requests that the applicant collect information wherever possible:

> *Certainly, monitoring and assessing surface water quality is a difficult and ongoing task, and projecting the water quality that will result from proposed activities can be made difficult by the inherent complexity of receiving water systems. The critical issue becomes: How much information and analysis is needed to make the required antidegradation Tier 2 findings, and where information is lacking, who should be responsible for providing it?* EPA Region VIII Guidance: Antidegradation Implementation, Chapter 4, EPA Region 8 (1993), p. 57 (Exhibit 81)[81]

Further guidance suggests that:

> *The applicant may be required to provide monitoring data or other information about the affected water body to help determine the applicability of Tier 2 requirements based on the high-quality test. The information that will be required in a given situation will be identified on a case-by-case basis.*

and

> *Such information may include recent ambient chemical, physical, and biological monitoring data sufficient to characterize, during the appropriate critical condition(s), the existing uses and the spatial and temporal variability of existing quality of the segment for the parameters that would be affected by the proposed activity.* EPA Region VIII Guidance: Economic Antidegradation Implementation, Chapter 2, EPA Region 8 (1993), p. 15 (Exhibit 82)[82]

The EPA's Great Lakes antidegradation guidance (Water Quality Guidance for the Great Lakes System: Supplementary Information Document (SID), U.S. EPA, Office of Water, (1995), (Exhibit 83)[83] also discusses conducting reviews of potential degradation in terms that assume existing water quality data are known or will be collected. The guidance

specifies that the level of protection afforded a water body under antidegradation provisions will be determined on a parameter-by-parameter basis, considering each individual pollutant separately from the others present in a water body. The guidance notes that under this approach:

> *… a discharger contemplating an action that would result in an increased loading would identify the constituents of its effluent that would increase as a result of the action. Then,* ***the ambient level of the pollutants of interest would be determined*** *and compared to the applicable criteria. Where ambient concentrations of the pollutants in question are less than criteria concentrations, the water body would be considered high quality for those pollutants and increases in those pollutants would be subject to the requirements applicable to high quality waters.* Water Quality Guidance for the Great Lakes System: Supplementary Information Document (SID)*, U.S. EPA, Office of Water (1995), Section VII (C)(2)(b)(i) (Exhibit 83) (emphasis added)*

Subpart 2 addresses situations when a previously-regulated activity is seeking reissuance of a control document and the actual loading or other cause of degradation is less than what has been permitted in the control document. This paragraph affects wastewater treatment facilities regulated under individual NPDES permits in particular. Wastewater treatment facilities are designed to accommodate population growth or production over time periods longer than the typical five-year NPDES permit cycle. For example, owners/operators of domestic sewage treatment facilities will typically design for loading capacities expected in 20 years and effluent limits set by the MPCA are based accordingly. It is therefore reasonable to determine existing water quality based on conditions which are anticipated at the levels of pollutants authorized to be discharged by the existing control document. The following hypothetical example illustrates this point.

In 2015, a municipal wastewater plant requests preliminary effluent limits from the MPCA for a facility plan that will accommodate the expected population in 2035. The surface water which will be impacted is a Class 2B water and not an ORVW. Antidegradation procedures are required because there is an anticipated net increase in loading from their previous NPDES permit. Pollutant *X* is identified by the MPCA as parameter of concern and the ambient concentration of this pollutant is 10 milligrams per liter (mg/L) at the time of the application. The water quality standard for Pollutant *X* is 100 mg/L, therefore the water is of high quality for that pollutant and there is 90 mg/L of available assimilative capacity. Because the water is of high quality the applicant is required to provide an alternatives analysis to identify the least degrading prudent and feasible alternative. The applicant submits this information to the MPCA for review and the MPCA agrees that the selected alternative will minimize degradation. Based on the selected alternative and the expected design flow needed for the expected population growth, the annual loading of Pollutant *X* will be 800 pounds. This loading will cause the ambient concentration of the pollutant to increase to 40 mg/L and the remaining assimilative capacity will be 60 mg/L. The MPCA's antidegradation review, including the social and economic justification, is based on the impacts (i.e., pollutant concentration and consumption of available assimilative capacity) to the surface water expected in 2035. Effluent limits are included in the draft permit to reflect the projected loading. After receiving comments on the preliminary antidegradation determination, a final determination is made and the NPDES permit is issued in 2016.

In 2021, the permittee requests reissuance of the permit and the anticipated projected loading needs have not changed. The actual annual loading of Pollutant *X* at the time of the request is 400 lbs. Under the proposed rules, antidegradation procedures regarding Pollutant *X* are not required because loading limits in the previous permit and the final antidegradation determination accounted for future growth. However, this does not mean that an antidegradation review will not be required for other pollutants. For example, in the five-year time period between permit reissuance, the MPCA may become aware of other pollutants that were not of concern, and therefore not addressed, when following the initial antidegradation procedures.

D. Antidegradation standards when changes in existing water quality are reasonably quantifiable (Proposed Minn. R. 7050.0265)

1. Subpart 1. Scope

   Subpart 1. **Scope.** This part applies to activities regulated by the following control documents:

   A. new, reissued, or modified individual NPDES wastewater permits;
   B. new, reissued, or modified individual NPDES stormwater permits for industrial activities, as defined under part 7090.0080, subpart 6;
   C. new, reissued, or modified individual NPDES stormwater permits for construction activities, as defined under part 7090.0080, subpart 4;
   D. section 401 certifications for new, reissued, or modified individual federal licenses and permits; and
   E. other control documents that authorize net increases in loading or other causes of degradation and where changes in existing water quality of individual surface waters can reasonably be quantified through antidegradation procedures.

   Subpart 1 is needed to identify the range of activities to which the standards apply. Items A to D specifically identify activities regulated under individual wastewater, industrial stormwater and construction stormwater NPDES permits, as well as activities for which CWA section 401 certifications are required for individual federal licenses and permits. Each of these control documents regulates activities that have the potential to impact an individual surface water or a limited number of surface waters, the identity of which are known at the time the activity is proposed. It is therefore reasonable to expect that the existing water quality and projected impacts to that quality can be quantified. Item E extends the scope to other activities not specifically identified but which are regulated under control documents where changes to existing water quality of individual waters can reasonably be quantified. Although the control documents identified in the first four items are those for which the MPCA has current regulatory authority, it is possible that additional regulatory authority will be granted to the MPCA and the scope of this rule will extend to other types of control documents. This provision reasonably provides flexibility to apply antidegradation requirements to similar types of control documents.

2. Subpart 2. Protection of existing uses.

Subp. 2. **Protection of existing uses.** The commissioner shall approve a proposed activity only when existing uses and the level of water quality necessary to protect existing uses are maintained and protected. Evaluation of the maintenance and protection of existing uses includes consideration of:

A. aquatic life that utilizes or is present in or on the surface waters;
B. recreational opportunities in or on the surface waters;
C. hydrologic conditions, geomorphic conditions, water chemistry, and habitat necessary to maintain and protect existing aquatic life or recreation in or on the surface waters; and
D. commercial activity that depends on the preservation of water quality.

Federal antidegradation regulations at 40 CFR § 131.12(a)(1) require that existing uses and the level of water quality necessary to protect those uses be maintained and protected. Existing uses are defined in the proposed rule and federal regulations (40 CFR § 131.3(e)) (Exhibit 68) as uses actually attained in the water body on or after November 28, 1975. This subpart is needed to fulfill the federal requirement.

This subpart reasonably describes how the MPCA will consider existing use protection. Item A specifies that aquatic life that utilizes or is present in and on the water must be considered. This may include an assessment of projected deterioration to an existing aquatic community, such as a shift from a community of predominately pollutant-sensitive species to pollutant-tolerant species. The evaluation may also consider whether there are aquatic species that depend on the water resource but are not present in the water body at all times. For example, there may be species that utilize the water body for seasonal migratory purposes. Item B allows for consideration of recreational opportunities, such as canoeing or swimming. Item C ensures that not only are the uses themselves protected, but the conditions which provide for those uses are maintained and protected. For example, if a self-sustaining walleye fishery has been in existence since November 28, 1975, protecting the use includes not only sustaining the adult population (which could be achieved through stocking hatchery reared fingerlings), but also maintaining spawning habitat. Item D requires the consideration of commercial activities that depend on the preservation of water quality. Examples of commercial activities dependent on water quality preservation are farms and industries that need clean water for their operations.

3. Subpart 3. Compensatory mitigation; loss of existing uses.

Subp. 3. Compensatory mitigation; loss of existing uses.

A. Except as provided in item D, the commissioner shall allow compensatory mitigation for the loss of an existing use resulting from physical alterations to a water body when:
   (1) prudent and feasible alternatives are not available to avoid or minimize adverse impacts to the existing use;
   (2) the mitigation is sufficient to ensure replacement of the lost existing use;
   (3) the mitigation is accomplished by restoring a previously impacted surface water of the same type or, when restoring is not a prudent or feasible alternative, establishing or enhancing a surface water of the same type;

(4) the mitigation occurs within the same watershed, to the extent prudent and feasible; and

(5) the mitigation is completed before or concurrent with the actual physical alteration, to the extent prudent and feasible.

B. For the purposes of subpart 2 and part 7050.0250, item A, existing uses are maintained and protected when regulated activities involving the physical alterations are in compliance with item A.

C. When the physically altered water body is of high quality, the commissioner shall ensure the requirements specified in subpart 5 are satisfied.

D. The commissioner shall prohibit the loss of existing uses resulting from physical alterations, regardless of the compensatory mitigation proposed, when the proposed activity would physically alter or otherwise degrade the exceptional characteristics of an outstanding resource value water designated in part 7050.0335.

Compensatory mitigation for the loss of aquatic resources resulting from physical alterations is implemented through the issuance of CWA section 404 permits administered by the ACE. As with other federal permits, the MPCA is required to ensure compliance with water quality standards (through the issuance or denial of CWA section 401 certifications) including antidegradation protection of existing uses.

Federal antidegradation regulations at 40 CFR 131.12(a)(1) require that existing uses be maintained and protected. EPA guidance in the interpretation of maintaining and protecting existing uses specifically allows compensatory mitigation, stating that:

> *If a planned activity will foreseeably lower water quality to the extent that it no longer is sufficient to protect and maintain the existing uses in that water body, such an activity is inconsistent with EPA's antidegradation policy, which requires that existing uses are to be maintained. In such a circumstance, the planned activity must be avoided or* ***adequate mitigation*** *or preventive measures must be taken to ensure that the existing uses and the water quality to protect them will be maintained.* Water Quality Standards Handbook, Second Edition, Chapter 4, U. S. EPA (1994), pp. 3-4 (emphasis added)

The above mentioned guidance further states that:

> *A literal interpretation of 40 CFR 131.12(a)(1) could prevent certain physical modifications to a water body that are clearly allowed by the Clean Water Act, such as wetland fill operations permitted under section 404 of the Clean Water Act.* Water Quality Standards Handbook, Second Edition, Chapter 4, U. S. EPA (1994), p. 5

Note that compensatory mitigation is not allowed as an option for all activities that result in degradation of a water body; only for those activities that result in physical alteration as allowed by the CWA. For example, compensatory mitigation will not be allowed when a discharge from a proposed wastewater treatment facility would result in the loss of an existing use. The MPCA anticipates that only those physical alterations permitted under CWA section 404 will be allowed to provide compensatory mitigation for the loss of existing uses.

It is also important to note that the current rule governing nondegradation for all waters addresses physical alterations of wetlands (Minn. R. 7050.0185, subp. 9), but not other water bodies. The subpart is needed to clarify that compensatory mitigation may be applied to water bodies other than wetlands. A memorandum of agreement between the EPA and the ACE regarding the implementation of 40 CFR § 230 (Exhibit 84)[84] (i.e., section 404(b)(1) guidelines for specification of disposal sites for dredged or fill material) states that:

> *In focusing the goal on no overall net loss to wetlands only, EPA and Army have explicitly recognized the special significance of the nation's wetlands resources. This special recognition of wetlands resources does not in any manner diminish the value of other waters of the United States, which are often of high value. All waters of the United States, such as streams, rivers, lakes, etc., will be accorded the full measure of protection under the Guidelines, including the requirements for appropriate and practicable mitigation.* Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (1990), Section II(B) (Exhibit 85)[85]

It is also evident from the requirements found in 40 CFR § 230 that the section 404(b)(1) guidelines apply to waters other than wetlands. For example 40 CFR § 230.93(e)(3) (Exhibit 86)[86] addresses mitigation requirements for difficult-to-replace resources such as streams.

The MPCA agrees that there are situations where compensatory mitigation is a reasonable option to redress the degradation of an existing use. The proposed rules only allow compensatory mitigation if the specific conditions described in Item A are met. These conditions are reasonable, in part, because they are supported by federal regulations and EPA guidance. In addition to being based in the federal requirements, the proposed conditions are a reasonable way to provide flexibility for development while retaining no net loss of existing uses.

Item A, sub-item 1 provides that compensatory mitigation may be allowed, but only when prudent and feasible alternatives are not available to avoid or minimize adverse impacts to the existing use. This requirement is reasonable because it ensures that compensatory mitigation is allowed only when impacts to existing uses cannot be avoided or minimized, to the extent prudent and feasible. This is consistent with federal regulations governing compensatory for the loss of aquatic resources:

> *Pursuant to these requirements, the district engineer will issue an individual section 404 permit only upon a determination that the proposed discharge complies with applicable provisions of 40 CFR part 230, including those which require the permit applicant to take all appropriate and practicable steps to avoid and minimize adverse impacts to waters of the United States. Practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. Compensatory mitigation for unavoidable impacts may be required to*

> *ensure that an activity requiring a section 404 permit complies with the Section 404(b)(1) Guidelines.* 40 CFR § 230.91(c)(2) (Exhibit 87)[87]

Item A, sub-item 2 provides that compensatory mitigation must be sufficient to ensure replacement of the lost use. EPA guidance states that when a planned activity will result in the loss of an existing use, it:

> *…must be avoided or adequate mitigation or preventive measures must be taken to ensure that the existing uses and the water quality to protect them will be maintained.* Water Quality Standards Handbook, Second Edition, Chapter 4, U. S. EPA (1994), pp. 3-4

Federal regulations governing compensatory mitigation for the loss of aquatic resources require that:

> *Compensatory mitigation requirements must be commensurate with the amount and type of impact that is associated with a particular DA permit.* 33 CFR § 332.3(a)(1) (Exhibit 88)[88]

Unlike the other conditions for compensatory mitigation, the requirement that the mitigation must be sufficient to replace the lost use is not qualified by consideration of prudence and feasibility. The MPCA considers that this requirement is the absolute minimum that must be provided for the loss of an existing use.

Item A, sub-item 3 provides that compensatory mitigation must be accomplished by restoring the existing use of previously impacted water bodies of the same type or, when restoring is not prudent or feasible, establishing or enhancing water bodies of the same type. Federal regulations establish priorities for how mitigation is to be accomplished:

> *Compensatory mitigation may be performed using the methods of restoration, enhancement, establishment, and in certain circumstances preservation. Restoration should generally be the first option considered because the likelihood of success is greater and the impacts to potentially ecologically important uplands are reduced compared to establishment, and the potential gains in terms of aquatic resource functions are greater, compared to enhancement and preservation.* 33 CFR § 332.3(a)(2) (Exhibit 88)

With one exception, subpart 3(A)(3) is in alignment with 33 CFR § 332.3(a)(2) allowing for "*establishing or enhancing*" a water body of the same type when it is not prudent and feasible to "*restore*" a water body. While "*preservation*" is, in certain circumstances, allowed under 33 CFR § 332.3(a)(2), preservation is not included as a method of mitigation in the proposed rules. The MPCA does not expect any scenario where preserving an existing use is a viable option for compensatory mitigation. Preserving an existing use that has not been lost does not replace a lost use.

An example may be helpful in thinking about how restoring, establishing or enhancing water bodies may be used for compensatory mitigation. A company is proposing to expand their operations that would result in the removal of a wetland. The preferred option is restoration because the likelihood of success is greater than establishment and the potential gains in terms of aquatic resource functions and services are greater than enhancement. For example, the company may be able to reclaim a wetland that was

lost by previous actions. If restoration is not prudent or feasible, the company may consider constructing a new wetland. For example, the company may be able to enlarge an existing wetland. When establishment of a new wetland is proposed, the MPCA will need assurance through careful design, monitoring and long-term maintenance planning that the functions of the created wetland persist over time. If establishing a new wetland is not prudent or feasible, the company may consider enhancing an existing wetland. For example, the wetland the company proposes to remove contains habitat necessary for migrating waterfowl. Enhancement could be applied by improving the habitat an existing wetland which would accommodate migrating waterfowl. As with created wetlands, the MPCA would need assurance through careful design, monitoring, and long-term maintenance planning to ensure the functions of the enhanced wetland persist over time. In addition, the MPCA would need assurance that other wetland uses are not lost through the enhancement.

Item A, sub-item 4 provides that compensatory mitigation must occur within the same watershed, to the extent prudent and feasible. Federal regulations governing compensatory mitigation state that:

> *In general, the required compensatory mitigation should be located within the same watershed as the impact site …* 33 CFR § 332.3(b)(1) (Exhibit 88)

The MPCA utilizes the following watershed sizes based on United States Geological Survey's Hydrologic Unit Codes (HUC): 4-digit HUC (4 in Minnesota), 6-digit HUC (10 in Minnesota), 8-digit HUC (81 in Minnesota) and 10-digit HUC (5,600 in Minnesota). In recognition of the great variability of watershed sizes and conditions, the above regulations do not specify a mandatory watershed size for implementing a watershed approach to compensatory mitigation. Likewise the proposed rules do not specify the watershed size.

The decision on the mitigation site location is best made on a case-by-case basis in conjunction with the factors identified in Item A. In general, the sequence used for mitigation site selection should identify sites within the same smaller watersheds before considering a location within sequentially larger watersheds. This is reasonable given the ecological benefits of immediate geographic connectivity of restored hydrology and the dependent aquatic life.

This approach also aligns the ACE St. Paul District's policy for wetland compensatory siting sequence which provides the follows steps:

> *Siting Sequence for Project-Specific Compensation Location of Wetland Compensation Site vs. Impact Site*
>
> *(a) on-site;*
>
> *(b) in the same 10-digit HUC watershed (5,600 in MN);*
>
> *(c) in the same 8-digit HUC watershed (81 in MN);*
>
> *(d) in the same modified 6-digit HUC watershed (10 in MN);*
>
> *(e) in the same 4-digit HUC watershed (4 in MN); then*
>
> *(f) statewide.*

St. Paul District Policy for Wetland Compensatory Mitigation in Minnesota, St. Paul District, USACE, 2009, (Exhibit 89)[89]

Item A, sub-item 5 provides that compensatory mitigation must be completed before or concurrent with the actual physical alteration of the water bodies affected by the proposed activity to the extent prudent and feasible. Federal regulations require:

> *Implementation of the compensatory mitigation project shall be, to the maximum extent practicable, in advance of or concurrent with the activity causing the authorized impacts. The district engineer shall require, to the extent appropriate and practicable, additional compensatory mitigation to offset temporal losses of aquatic functions that will result from the permitted activity.* 33 CFR § 332.3(m), (Exhibit 88)

Timing is an important consideration when applying compensatory mitigation. Delaying mitigation may have significant negative environmental impacts and therefore should be avoided to the extent prudent and feasible. For example, if a proposed activity will result in the loss of use of a water body for migratory waterfowl, it is important that the lapse in the availability of that use be minimized so that impacts to the migration are reduced.

Item B states that when the conditions specified in Item A are satisfied, existing uses will be considered maintained and protected. This prevents potential conflicts with the purpose statement (proposed Minn. R. 7050.0250) and federal antidegradation regulations (40 CFR § 131.12(a)(1)), which require that existing uses be maintained and protected.

Item C provides that if the physically altered water body is of high quality, Tier 2 requirements must be satisfied. This reasonably ensures that physical alteration activities are held to the same standards for the protection of high water quality as other regulated activities.

Item D prohibits the loss of an existing use when the proposed activity would 1) physically alter the exceptional characteristics of a designated ORVW, or 2) otherwise degrade the exceptional characteristics of a designated ORVW. The first prohibition relates to direct physical alterations, such as dredging or filling, of an ORVW. The second prohibition addresses indirect impacts to an ORVW resulting from physical alterations of other water bodies. This prohibition on the loss of any existing use for ORVWs is based in federal regulations which recognize that there may be circumstances when the adverse impacts of an activity are so significant that the discharge may not be permitted regardless of the compensatory mitigation proposed (40 CFR § 230.10 (c), (Exhibit 90)[90]). These prohibited types of significant impacts include adverse effects on "*special aquatic sites*" (40 CFR § 230.10(c)(1)). Minnesota's ORVWs qualify as "*special aquatic sites*" because they possess exceptional characteristics that must be protected from permanent degradation as required in 40 CFR § 131.12(a)(3).

4. Subpart 4. Protection of beneficial uses.

   Subp. 4. **Protection of beneficial uses.** The commissioner shall not approve a proposed activity that would permanently preclude attainment of water quality standards.

   This proposed requirement is needed to ensure beneficial uses are protected. This provision is reasonable because it comports with federal regulations requiring permit limits to be set at a level that will not cause or contribute to violations of standards (40 CFR § 122.44(d) (Exhibit 91)[91]). Note that a use attainability analysis may be conducted to evaluate whether a beneficial designated use is indeed attainable. When adequate evidence is presented that a beneficial designated use is not attainable the designated beneficial use is changed through rulemaking. (see Minn. R. 7050.0405)

5. Subpart 5. Protection of surface waters of high quality.

   Subp. 5. **Protection of surface waters of high quality.** Items A to D apply to surface waters the commissioner determines to be of high quality.

   A. The commissioner shall not approve a proposed activity when the commissioner makes a finding that prudent and feasible prevention, treatment or loading offset alternatives exist that would avoid degradation of existing high water quality. When the commissioner finds that prudent and feasible prevention, treatment or loading offset alternatives are not available to avoid degradation, a proposed activity shall be approved only when the commissioner makes a finding that degradation will be prudently and feasibly minimized.

   B. The commissioner shall approve a proposed activity only when the commissioner makes a finding that economic or social changes resulting from the proposed activity are important in the geographic area in which degradation of existing high water quality is anticipated. The commissioner shall consider the following factors in determining the importance of economic or social changes:

      (1) economic gains or losses attributable to the proposed activity, such as changes in the number and types of jobs, median household income, productivity, property values, and recreational, tourism, and other commercial opportunities;
      (2) contribution to social services;
      (3) prevention or remediation of environmental or public health threats;
      (4) trade-offs between environmental media; and
      (5) the value of the water resource, including:
         (a) the extent to which the resources adversely impacted by the proposed activity are unique or rare within the locality, state, or nation;
         (b) benefits associated with high water quality for uses such as ecosystem services and high water quality preservation for future generations to meet their own needs; and

(c) factors, such as aesthetics, that cannot be reasonably quantified; and

(6) other relevant environmental, social, and economic impacts of the proposed activity.

C. A proposed activity that would result in degradation of existing high water quality shall be approved only if the commissioner determines that issuance of the control document will achieve compliance with all applicable state and federal surface water pollution control statutes and rules administered by the commissioner.

D. The commissioner shall provide an opportunity for intergovernmental coordination and public participation before allowing degradation of existing high water quality.

Federal antidegradation regulations governing the protection of high water quality require that:

> *Where the quality of the waters exceeds levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected* ***unless the State finds****, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.* 40 CFR § 131.12(a)(2) (emphasis added)

This subpart fulfills federal antidegradation regulatory requirements to protect high water quality. Specifically, 40 CFR § 131.12(a)(2) prohibits the degradation of high water quality unless the following conditions are met:

- The state finds that allowing degradation is necessary. (Addressed in Item A and discussed below.)
- The state finds that allowing degradation accommodates important economic or social development in the area in which the waters are located. (Addressed in Item B and discussed below.)
- Existing uses must be protected. (Addressed in subparts 2 and 3 and discussed above.)
- The highest statutory and regulatory requirements for all new and existing point sources and all cost effective and reasonable best management practices for nonpoint source controls must be achieved. (Addressed in Item C and discussed below.)
- Decisions allowing for degradation must include intergovernmental coordination and public participation. (Addressed in Item D and discussed below.)

Item A addresses the question of whether the high water quality degradation is necessary. Various EPA guidance documents, as well as some states, refer to this part of antidegradation procedures as the "*necessary test*", "*finding of necessity*" or "*alternatives analysis*". (EPA Region VIII Guidance: Antidegradation Implementation (1993), Chapter 2, p. 19 (Exhibit 82); Advanced Notice of Proposed Rulemaking, 63 Fed. Reg. 36741 (1998), p. 36783). The proposed rule language is consistent with 40 CFR § 131.12(a)(2), which requires the state to make a formal decision – a finding – that high water quality degradation is necessary. As previously discussed (Section 4.B.2.), the proposed provisions change the standard for decisions regarding high water quality degradation from what the MPCA finds "*acceptable*" (Minn. R. 7050.0185, subp. 1) to what the MPCA finds "*necessary,*" thus bringing Tier 2 protection in alignment with federal regulations.

The MPCA proposes that the determination of necessity be accomplished in a two-step process. The first step ensures that degradation is not permitted when there are prudent and feasible alternatives to avoid net increases in loading or other causes of degradation. The second step ensures that when avoidance is not prudent or feasible, degradation is minimized. This approach reflects EPA guidance, which suggests that states ensure that all feasible alternatives to allowing high water quality degradation have been adequately evaluated and that the least degrading reasonable alternative is implemented (Advanced Notice of Proposed Rulemaking, 63 Fed. Reg. 36741 (1998), p. 36784). The proposed rules specifically identify prevention, treatment and loading offsets as means through which degradation may be avoided and minimized. Prevention addresses potential sources of pollution prior to the need for treatment or offsets. Treatment entails eliminating or reducing pollution at the permitted facility or site. Loading offsets (defined in proposed Minn. R. 7050.0255, subp. 25 and described in Section 5.B.23.) allow the creation of additional loading capacity in the water where a net increase in loading is proposed.

The "*prudent and feasible*" standard is reasonable because it allows for considerations that are unique to a specific project and the applicant's ability to implement alternatives that avoid or minimize degradation. The need for and reasonableness of including the individual terms is found in Sections 5.B.17. and 5.B.34. Examples of how the terms will be applied in an applicant's antidegradation assessment are provided in Section 5.G.2. The "*prudent and feasible*" standard is also reasonable because it is in alignment with various Minnesota Statutes governing environmental protection, including those regarding the grounds for intervention and judicial review:

> *In any such administrative, licensing, or other similar proceedings, the agency shall consider the alleged impairment, pollution, or destruction of the air, water, land, or other natural resources located within the state and no conduct shall be authorized or approved which does, or is likely to have such effect so long as there is a* ***feasible and prudent alternative*** *consistent with the reasonable requirements of the public health, safety, and welfare and the state's paramount concern for the protection of its air, water, land, and other natural resources from pollution, impairment, or destruction. Economic considerations alone shall not justify such conduct.* Minn. Stat. § 116B.09, subd. 2 (emphasis added)

Regarding environmental policy related to environmental impact statements:

> *No state action significantly affecting the quality of the environment shall be allowed, nor shall any permit for natural resources management and development be granted, where such action or permit has caused or is likely to cause pollution, impairment, or destruction of the air, water, land or other natural resources located within the state, so long as there is a* ***feasible and prudent alternative*** *consistent with the reasonable requirements of the public health, safety, and welfare and the state's paramount concern for the protection of its air, water, land and other natural resources from pollution, impairment, or destruction. Economic considerations alone shall not justify such conduct.* Minn. Stat. § 116D.04, subd. 6 (emphasis added)

A subtle, but very important, distinction between the existing rules and the proposed rules is how determinations are made regarding alternatives that minimize impacts to water quality. Under the current rules, all new or expanded discharges are required to apply control measures that, at minimum, meet water quality standards (Minn. R. 7050.0185, subp. 3). For significant new or expanded discharges the MPCA makes a determination of whether additional control measures (beyond those needed to meet the water quality standards) can reasonably be taken to minimize impacts (Minn. R. 7050.0185, subp. 4). Under this approach the baseline for determining how degradation is to be minimized is the water quality standard necessary to sustain beneficial uses. It is from this point that alternatives are considered and are required if deemed reasonable. Under the proposed rule, the baseline for evaluating alternatives that minimize degradation is not the water quality standard, but existing water quality. This change is reasonable because protecting existing high water quality, and not just the beneficial use, is the intent of Tier 2 protection.

Item B is needed because federal regulatory requirements are very general – stating only that important economic or social development must justify a lowering of high water quality. The regulations say nothing about the methods and data needed to make this justification. The proposed provision strikes a balance between the generality of federal regulations and a system that tries to fit all communities into a single, highly-specified mold. However, local environments and economies are idiosyncratic. Resources, trade and growth trends vary considerably between Burnsville, Duluth and Mankato, for example. This provision requires the MPCA to only approve proposed activities when "*the commissioner makes a finding that economic or social changes resulting from the proposed activity are important in the geographic area in which degradation of existing high water quality is anticipated.*" In other words, the determination of importance involves weighing of benefits resulting from the proposed activity against the loss of water quality. Speaking to decisions regarding the justification for lowering high water quality based on economic or social importance, EPA guidance states that:

> *This provision is intended to provide relief only in a few extraordinary circumstances where the economic and social need for the activity clearly outweighs the benefit of maintaining water quality above that required for "fishable/swimmable" water, and both cannot be achieved. The burden of demonstration on the individual proposing such activity*

will be very high. Water Quality Standards Handbook, Second Edition, Chapter 4, U. S. EPA (1994), p. 7

The requirements of Item B are also in alignment with a legislative directive authorizing and directing the MPCA to:

> *…identify and develop methods and procedures that will ensure that environmental amenities and values, whether quantified or not, will be given at least equal consideration in decision making along with economic and technical considerations.* Minn. Stat. § 116.03 subd. 2(3)

Federal regulations limit the demonstration of importance to "*the area in which the waters are located.*" 40 CFR 131.12(a)(2) The meaning and application of this phrase is important because it puts boundaries around the extent to which economic and social changes are considered. EPA guidance and States' antidegradation provisions have interpreted this phrase in a number of ways.

The EPA's water quality guidance for the Great Lakes identifies "*affected area*" as:

> *The area in which the economic benefits occur should correspond with the* ***area in which water quality is lowered****. Determining the area is a case-by-case decision, made taking into account the pollutants involved as well as the location of the discharge.* Water Quality Guidance for the Great Lakes System: Supplementary Information Document (SID)*, U.S. EPA, Office of Water (1995), Section VII(C)(3)(c)(iii) (Exhibit 83), (emphasis added)*

Additional guidance from EPA Region 9 states that the:

> *Demonstration of important economic or social development entails two steps. First, the party should describe and analyze the current state of economic and social development in the area that would be affected. The purpose of this step is to determine the "baseline" economic and social status of the affected community, i.e., the measure against which the effect of the water quality downgrade is judged.* ***The area's use or dependence upon the water resource affected by the proposed action should be described in the analysis****.* Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12, U.S. EPA Region 9 (1987), p. 9 (Exhibit 80), (emphasis added)

Colorado's implementation procedures state that:

> *The "area in which the waters are located" shall be determined from the facts on a case-by-case basis. The area shall include all* ***areas directly impacted by the proposed regulated activity****.* The Basic Standards and Methodologies for Surface Water Antidegradation Policy (5 CCR 1002-3), Colorado Department of Public Health and Environment Water Quality Commission (Regulation No. 31) (2007),p. 18 (Exhibit 92)[92], (emphasis added)

In decisions regarding whether to allow new sources, North Dakota's procedures define "*zone of influence*" as that:

> *…determined as appropriate for the parameter of concern, the characteristics of the receiving waterbody (e.g., lake versus river, etc.), and other relevant factors.* NDAC Chapter 33-16-02, Standards of Quality for Waters of the State, Appendix IV (North Dakota Implementation Procedure) (2001), p. 39 (Exhibit 93)[93]

Indiana's rules address this topic by stating that:

> *Any person requesting a new or increased loading that would cause a lowering of water quality that is not exempt under section 4 of this rule shall submit the information described in this section to the commissioner to support the commissioner's determination that the proposed new or increased loading is necessary and accommodates important social or economic development in the area of the loading. The following basic information must be submitted: … (3) The location of the proposed discharge and a map of the area of the proposed discharge that shows the* ***receiving water or waters that would be affected by the new or increased loading, including the area downstream of the proposed discharge****.* Indiana Administrative Code, Title 327, Article 2, Section 5(a)(3) (2012) (Exhibit 94)[94] (emphasis added)

Arizona's implementation procedures provide that:

> *If the proposed discharge is determined to be necessary to accommodate important economic or social development in the area in which the* ***affected waters*** *are located, the substance and basis for that preliminary determination shall be documented and the Tier 2 review shall continue.* Antidegradation Implementation Procedures, Arizona Department of Environmental Quality, 2008, p. 7-3 (Exhibit 95)[95] (emphasis added)

What appears to be consistent in EPA guidance and other States' provisions is that "*in the area in which the waters are located*" means areas where degradation of high water quality due to a regulated source is anticipated, including downstream waters. This is the approach taken the proposed rules.

Findings of importance will be made on a case-by-case basis depending on the parameter in question and the characteristics of the waters that will be impacted. This presents wide-ranging possibilities for the physical area that is considered when demonstrating the importance of lowering high water quality. Take, for example, the discharge of pollutants creating biochemical oxygen demand (BOD) to a river segment. The impacted waters may be found in a relatively small area because BOD is typically attenuated rapidly in the water column and oxygen concentrations return to upstream conditions over a relatively small distance and time. On the other hand, the discharge of mercury, a bioaccumulative and persistent pollutant, to the same river segment has the potential to impact downstream waters a relatively large distance from the discharge site.

Item B requires the MPCA to consider a number of factors in the finding of importance identified in the sub-items. Sub-item 1 specifically addresses economic gains and losses attributable to the activity. These reasonably include, but are not limited to, changes in the number and types of jobs, median household income, productivity, property values,

and recreational, tourism and other commercial opportunities. Note that changes in job numbers could reflect unemployment changes.

Sub-item 2 addresses the requirement in 40 CFR § 131.12(a)(2) that states' decisions regarding the lowering of high water quality include consideration of important social development. The proposed provision articulates this requirement as "*contribution to social services*" which is more easily quantified than "*social development*." Contributions to social services may include activities that improve education or community health. An example of how lowering of high water quality may contribute to improved education is an extension of sewer services (and associated increased loadings) to a rural area where a new school is needed. An example of how degrading high water quality may be justified for needed community health is additional loading resulting from a city's plans to provide sewer connections to previously unsewered communities where there has been a history of septic system failures.

Sub-item 3 requires the consideration of preventing or remediating environmental or public health threats. For example, the MPCA would evaluate whether the expansion of a wastewater treatment facility would prevent or mitigate downstream public health concerns.

Sub-item 4 addresses trade-offs between environmental media. Such trade-offs, for example, may include impacts to groundwater and surface water. A city may have porous soil conditions that would affect decisions on how much infiltration to groundwater would be safe to protect those reliant on wells as a potable water source. Impacts to air quality may be an issue when considering energy-intensive treatment options for wastewater. Land use may be a concern if a wastewater treatment facility is disposing toxic-laden sludge.

Sub-item 5 requires evaluation of the water body's value. Where reasonable, the value of the water resource may be quantified in economic terms to address preserving unique or rare species, ecosystem services, preserving high water quality for future generations and the aesthetics associated with a given resource.

Ecosystem services, which are the benefits people obtain from ecosystems, may be divided into four categories – supporting, provisioning, regulating and cultural. Supporting services are those that are necessary for the production of all other ecosystem services. Examples include nutrient recycling and primary production. These services make it possible for the ecosystems to provide services such as food supply, flood regulation and water purification. Providing services are those products obtained from ecosystems such as food, raw materials, genetic resources and energy. Regulating services are benefits obtained from the regulation of ecosystem process. Examples include waste decomposition and detoxification, and diseases control. Cultural services are nonmaterial benefits people gain from the ecosystem. Examples include spiritual and historical enrichment, scientific discovery, recreation and aesthetic enjoyment.

In making a finding as to whether a given regulated activity is important, the MPCA will also need to consider the value of assimilative capacity to accommodate the needs of future generations as declared in the state's environmental policy statement (Minn. Stat. § 116D.02). For example, it would not be prudent to permit the consumption of all the remaining assimilative capacity of a water body when future growth and resulting need for some assimilative capacity is anticipated.

Sub-item 6 provides the flexibility needed to make determinations of importance based on other relevant factors. These importance determinations are made on a case-by-case basis and include potentially very wide-ranging activities and factors not expressed in the previous sub-items. Therefore, the MPCA believes it is reasonable to allow for the consideration of additional factors.

Due to the complexities and idiosyncratic nature of importance evaluations, the MPCA is not providing a quantitative threshold by which importance is determined. As the Washington State implementation guidance manual points out, one of the key purposes of the socioeconomic evaluation is to:

> *…set the stage for a public discussion on the relative merits and tradeoffs associated with allowing water quality to be degraded.* Water Quality Program Guidance Manual, Supplemental Guidance on Implementing Tier II Antidegradation, Department of Ecology, State of Washington (2011), p. 11 (Exhibit 96)[96]

Washington's guidance goes on to explain that if the lowering of water quality resulting from the preferred alternative is not in the overriding public interest (OPI), then the agency must deny the permit. If the lowering of water quality is found to be in the overriding public interest, this finding is documented and submitted for public comment along with the draft permit incorporating the preferred alternative.

Like Washington State's approach to determining OPI, the proposed rule uses do not contain specific thresholds for the determination of importance. As expressed in Washington State guidance:

> *Whether based on qualitative or quantitative information, however, the fact that the OPI evaluation includes issues of varying human values means that the results and how they are interpreted are subjective in nature. Rather than trying to identify strict cost-to-benefit ratios, Ecology's final decision is most appropriately focused on identifying those actions that are clearly not in the overriding public interest.* Water Quality Program Guidance Manual, Supplemental Guidance on Implementing Tier II Antidegradation, Department of Ecology, State of Washington (2011), pp. 11-12 (Exhibit 96)

In its determination of importance for complex projects, the MPCA may rely, in part, on the EPA's Interim Economic Guidance for Water Quality Standards, U.S. EPA (1995) (Exhibit 97)[97]. Chapter 5 of the Guidance focuses on antidegradation and essentially helps states determine whether the social and economic benefits of a project outweigh the costs of lowering water quality.

Item C is needed to fulfill the federal regulatory requirement that, before allowing the lowering of high water quality,:

> *… the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control…* 40 CFR 131.12(a)(2)

In their interpretation of this language, EPA guidance suggests that states require permits be in compliance, or there be adequate assurance that existing compliance problems will be resolved, before allowing degradation on high water quality.

> *The rationale behind the antidegradation regulatory statement regarding achievement of statutory requirements for point sources and all cost effective and reasonable BMPs for nonpoint sources is to assure that, in high quality waters, where there are existing point or nonpoint source control compliance problems, proposed new or expanded point sources are not allowed to contribute additional pollutants that could result in degradation. Where such compliance problems exist, it would be inconsistent with the philosophy of the antidegradation policy to authorize the discharge of additional pollutants in the absence of adequate assurance that any existing compliance problems will be resolved.* Water Quality Standards Handbook, Second Edition, Chapter 4, U. S. EPA (1994), p. 8

The provision in Item C is reasonable because it is in alignment with existing Minnesota rules governing final determinations on permit issuances:

> *Subpart 1. Agency action.*
>
> *Except as provided in subpart 2, the agency shall issue, reissue, revoke and reissue, or modify a permit if the agency determines that the proposed permittee or permittees will, with respect to the facility or activity to be permitted, comply or will undertake a schedule of compliance to achieve compliance with all applicable state and federal pollution control statutes and rules administered by the agency, and conditions of the permit and that all applicable requirements of Minnesota Statutes, chapter 116D, and the rules adopted under Minnesota Statutes, chapter 116D, have been fulfilled. For solid waste facilities, the requirements of Minnesota Statutes, section 473.823, subdivisions 3 and 6, must also be fulfilled.*
>
> *Subp. 2. Agency findings.*
>
> *The following findings by the agency constitute justification for the agency to refuse to issue a new or modified permit, to refuse permit reissuance, or to revoke a permit without reissuance:*
>
> *A. that with respect to the facility or activity to be permitted, the proposed permittee or permittees will not comply with all applicable state and federal pollution control statutes and rules administered by the agency, or conditions of the permit;*
> *B. that there exists at the facility to be permitted unresolved noncompliance with applicable state and federal pollution control statutes and rules administered by the agency, or conditions of the permit and that the permittee will not undertake a schedule of compliance to resolve the noncompliance;*
> *C. that the permittee has failed to disclose fully all facts relevant to the facility or activity to be permitted, or that the permittee has submitted false or misleading information to the agency or to the commissioner;*

D. *that the permitted facility or activity endangers human health or the environment and that the danger cannot be removed by a modification of the conditions of the permit;*

E. *that all applicable requirements of Minnesota Statutes, chapter 116D and the rules adopted under Minnesota Statutes, chapter 116D have not been fulfilled;*

F. *that with respect to the facility or activity to be permitted, the proposed permittee has not complied with any requirement under parts 7002.0210 to 7002.0310 or chapter 7046 to pay fees;*

G. *that with respect to the facility or activity to be permitted, the proposed permittee has failed to pay a penalty owed under Minnesota Statutes, section 116.072; or*

H. *for a solid waste transfer facility, that the permittee has received an agency permit but has failed to build and operate the permitted facility within the term of the permit.* Minn. R. 7001.0140, subparts 1 and 2.

This language focuses on the compliance status of the facility that is the subject of the permit. In some cases there may be noncompliance with water quality standards because of other facilities. In these cases, where there are upstream compliance problems, the MPCA does not intend to deny permit issuance based on antidegradation reviews for a new or expanded activity that is in compliance. Doing so would be unfair to the new or expanding activity. Therefore, provided there is reasonable assurance of future compliance, required controls on existing regulated sources will not need to be fully achieved before authorizing a proposed activity. Reasonable assurance would include a permit, schedule of compliance, or other enforceable document requiring future compliance.

It is important to remember that persons interested in a proposed activity and its impact to water quality will be given the opportunity to weigh in on the MPCA's preliminary determination including the assurance of controls.

An important sub-topic that needs to be addressed is the applicability of antidegradation implementation to nonpoint (i.e., unregulated) source controls. Federal regulatory language requires "*all cost-effective and reasonable best management practices for nonpoint source control*" (40 CFR § 131.12(a)(2)) be achieved before allowing the lowering of high water quality. This has led to confusion as to whether states are required to establish and implement BMPs for nonpoint sources before allowing degradation. EPA guidance addresses this question by stating that:

> *Section 131.12(a)(2) does not REQUIRE a State to establish BMPs for nonpoint sources where such BMP requirements do not exist.*
>
> *We interpret Section 131.12 (a) (2) as REQUIRING States to adopt an antidegradation policy that includes a provision that will assure that all cost-effective and reasonable BMPs* ***established under State authority*** *are implemented for nonpoint sources before the State authorizes degradation of high quality waters by point sources.* Interpretation of Federal Antidegradation Regulation Requirement, U.S. EPA memorandum from Tudor T. Davies (Director, Office of Science and Technology) to Water Management Division Directors (Regions I-X) (1994), (Exhibit 98)[98], (emphasis added)

The proposed rules clarify that antidegradation standards apply to those activities which require a control document (See proposed Minn. R. 7050.0265, subp. 1 and Minn. R. 7050.0270, subp. 1). As discussed in Section 5.B.46., control documents specify water pollution control conditions, including BMPs established under State authority, under which a regulated activity is allowed to operate.

Item D is needed to fulfill the federal regulatory requirement (40 CFR § 131.12(a)(2)) for intergovernmental cooperation and public participation before allowing the degradation of high water quality. Like the existing rules, the proposed rules provide an opportunity for comment through processes found in Minn. R ch. 7001. This is a reasonable approach because they are existing procedures that have proven to be an effective way of receiving comments. Federal regulations separate "*intergovernmental coordination*" and "*public participation*". The proposed rules combine "*intergovernmental coordination*" and "*public participation*" by providing the opportunity for comment from any entity interested in a proposed activity. Minn. R. 7001.0100**,** subpart 5 (B) requires the distribution of the public notice to all persons who have registered their names and addresses on the mailing list established under Minn. R. 7001.0200. MPCA maintains a public notice list satisfying this requirement. The list includes local governments, federal and state agencies, and other officials which have an interest in the MPCA's permit issuances. Minn. R. 7001.0100, subpart 5 (B) incorporates by reference the requirements of Minn. R. 7001.0660, subpart C which requires additional notification of certain local governments, federal and state agencies, and other officials for draft permits.

6. Subpart 6. Protection of restricted outstanding resource value waters.
   Subp. 6. **Protection of restricted outstanding resource value waters.** The commissioner shall restrict a proposed activity in order to preserve the existing water quality as necessary to maintain and protect the exceptional characteristics for which the restricted outstanding resource value waters identified under part 7050.0335, subparts 1 and 2, were designated.

   Minnesota, like a number of other states, has elected to provide a fourth level of protection more stringent than Tier 2, yet less stringent than Tier 3. The extra protection level in states' antidegradation policy is permissible under section 510 of the CWA (Federal Water Pollution Control Act, 33 U.S.C. § 1370 (1972, as amended) (Exhibit 74). This level of protection (referred to as Tier 2.5 in some states) is provided to water bodies specifically designated in the current rule (Minn. R. 7050.0180, subp. 6 through subp. 6b) and the proposed rules (Minn. R. 7050.0335, subp. 1) as restricted ORVWs. The MPCA is not proposing to add or remove restricted ORVWs in this rulemaking.

   The proposed provision does not fundamentally change how restricted ORVWs are currently protected, but provides clarification. The current rule protecting restricted ORVWs states that:

   > *No person may cause or allow a new or expanded discharge of any sewage, industrial waste, or other waste to any of the following waters unless there is not a prudent and feasible alternative to the discharge…*

   and,

> *If a new or expanded discharge to these waters is permitted, the agency shall restrict the discharge to the extent necessary to preserve the existing high quality, or to preserve the wilderness, scientific, recreational, or other special characteristics that make the water an outstanding resource value water.* Minn. R. 7050.0180, subp. 6

In other words, the current rule allows for water quality degradation of restricted ORVWs when there are no reasonable alternatives to a new or expanded discharge. Where discharges that degrade water quality are allowed, the characteristics for which the water was designated must still be preserved. The existing rules also state that the MPCA shall "*restrict,*" not necessarily "*prohibit*" the discharge. As discussed below, there may be situations where a complete prohibition of a discharge is inappropriate. In some cases a discharge from a proposed activity can be modified so that it does not cause any degradation of the characteristics for which the water is identified as outstanding. In this situation there is no need to prohibit the activity, but it may be necessary to impose conditions or restrictions to protect the exceptional characteristics.

The proposed provision is very similar to that found in the current rule, with two notable changes.

- Clarification regarding *"high water quality"*
- The phase "*existing high water quality*" is changed to "*existing water quality*" because the existing water quality of some parameters found within restricted ORVWs may not be of high quality as defined in the proposed rules.
- Exceptional characteristics
- The phase "*wilderness, scientific, recreational, or other special characteristics*" found in the current rule is replaced with "*exceptional characteristics,*" which is defined in the proposed rules.

It is reasonable to maintain the level of protection currently afforded to restricted ORVWs because there are waters that possess unique characteristics, yet may not have exceptional water quality. For example, many of the restricted ORVWs were designated as such because of their designation as "*scenic*" and "*recreational*" segments under the Minnesota Wild and Scenic Rivers Act (Minn. Stat. § 103F.301 through Minn. Stat. § 103F.345). The Rum River provides an example of a water body with multiple ORVW designations, since it has all three of the Minnesota Wild and Scenic River Act's classifications (wild, scenic and recreational). The 5.3 mile reach of the Rum River from the Ogechie Lake spillway (excluding the shore of Shakopee Lake) to the river's northernmost confluence with Lake Onamia is classified as a wild river. This classification is reserved for rivers "*…that exist in a free-flowing state with excellent water quality and with adjacent lands that are essentially primitive.*" Minn. R. 6105.0060, subp. 2. Under that same subpart the term "*excellent water quality*" means that, "*…the water quality is in or approaches natural condition with no significant evidence of human activities.*" In other words, a wild river's water quality is representative of pre-settlement conditions. Because of this reach's excellent water quality, the MPCA classifies this reach as a prohibited ORVW and protects it accordingly. Downstream of the prohibited reach the river alternates between the "*scenic*" and the "*recreational*" classifications. The same part of Minn. R. ch. 6105 defines "*scenic rivers*" as those rivers, "*…that exist in a free-flowing state and with adjacent lands that are*

largely undeveloped…" and "*recreational rivers*" as, "*…those rivers that may have undergone some impoundment or diversion in the past and that may have adjacent lands which are considerably developed, but that are still capable of being managed so as to further the purposes of this act*" (i.e. Minnesota Wild and Scenic Rivers Act). Again, it is important to note that exceptional water quality itself is not a factor for the designation of either scenic or recreational rivers or river segments.

So how will restricted ORVWs be protected under the proposed rules? The water quality necessary to maintain the characteristics for which the water body was designated will not be allowed to degrade. However, high water quality not associated with designation characteristics may be lowered, but only when both Tier 1 and 2 protection requirements are satisfied. For example, an applicant proposes an activity that will discharge copper to a restricted ORVW that was designated for its scenic characteristics. Through an assessment of existing water quality it is found that the copper concentration of the surface water at the point of the proposed discharge is better than the Class 2 water quality standard for copper. Because an increase in copper would not impact the scenic characteristics of the water, the MPCA may allow the discharge if certain conditions are met. These conditions include a demonstration that the discharge is necessary to accommodate important economic or social development, existing and beneficial uses are fully protected, and the public has had an opportunity to comment.

7. Subpart 7. Protection of prohibited outstanding resource value waters.

   Subp. 7. **Protection of prohibited outstanding resource value waters.** The commissioner shall prohibit a proposed activity that results in a net increase in loading or other causes of degradation to prohibited outstanding resource value waters identified under part 7050.0335, subparts 3 and 4.

   Federal antidegradation regulations at 40 CFR § 131.12(a)(3) require that high water quality of outstanding national resource waters be maintained and protected. This level of protection, often referred to as Tier 3 protection, is reserved for water bodies that possess extraordinary or unique water quality characteristics. In most cases these waters have minimal human impacts. The EPA interprets "*maintained and protected*" as no new or increased discharges that would result in lower water quality, except for when discharges result in temporary changes to water quality (Water Quality Standards Handbook, Second Edition, Chapter 4, U.S. EPA (1994), p. 10).

   This provision is needed to fulfill the federal regulatory requirements found in 40 CFR § 131.12(a)(3). Subpart 7 provides the same level of protection for prohibited ORVWs found in the current rule. The proposed rules, however, remove the specific provision for discharges upstream of ORVWs found in the current rule:

   > *The agency shall require new or expanded discharges to waters that flow into outstanding resource value waters be controlled so as to assure no deterioration in the quality of the downstream outstanding resource value water.* Minn. R. 7050.0180, subp. 9

This provision is no longer needed because the proposed rules simply require the MPCA to prohibit activities that would result in a net increase in loading to or otherwise degrade prohibited ORVWs. It does not matter whether the discharge is directly to the ORVW or to an upstream water - the prohibited ORVW would be degraded in either case.

As with restricted ORVWs, the proposed language does not use the term "*high quality waters*" found in federal regulations, but instead prohibits net increases in loading or causes of degradation to "*existing water quality.*"

8. Subpart 8. Protection against impairments associated with thermal discharges.

   Subp. 8. **Protection against impairments associated with thermal discharges.** When there is potential for water quality impairment associated with thermal discharges, the commissioner's allowance for existing water quality degradation shall be consistent with section 316 of the Clean Water Act, United States Code, title 33, section 1326. When a variance is granted under section 316(a) of the Clean Water Act, United States Code, title 33, section 1326, antidegradation standards under this part still apply.

   This provision is needed to fulfill the requirements found at 40 CFR § 131.12(a)(4) which requires States' antidegradation provisions to be consistent with section 316 of the CWA (Exhibit 99)[99] when there are potential thermal impairments. Thermal discharges are subject to the best practicable and best available control technology requirements. However, if a thermal discharger can demonstrate that a thermal standard is more stringent than that necessary to protect the propagation of fish, shellfish, and wildlife, the state may set a less stringent standard. EPA antidegradation guidance states that:

   > *...section 131.12 (a)(4) of the regulation is intended to coordinate the requirements and procedures of the antidegradation policy with those established in the Act for setting thermal discharge limitations. Regulations implementing section 316 may be found at 40 CFR § 124.66. The statutory scheme and legislative history indicate that limitations developed under section 316 take precedence over other requirements of the Act.* Water Quality Standards Handbook, Second Edition, Chapter 4, U.S. EPA (1994), p. 2

   Current nondegradation provisions fulfill the 40 CFR § 131.12(a)(4) requirement. This is clearly stated in the rule governing ORVWs (Minn. R. 7050.0180, subp. 10). The requirement is met indirectly in the rule governing all waters:

   > *Any person authorized to maintain a new or expanded discharge of sewage, industrial waste, or other waste, whether or not the discharge is significant,* ***shall comply with*** *applicable water quality standards of this chapter and effluent limits in chapter 7053 and* ***other applicable federal*** *and state* ***point source treatment requirements****.* Minn. R. 7050.0185, subp. 3 (emphasis added)

   The proposed provision adds clarity that even when less stringent standards are set (as allowed by section 316 of the CWA (Exhibit 99)), antidegradation procedures are still required if a proposed activity is anticipated to result in a net increase in loading or

other causes of degradation. In other words, thermal discharges allowed by a variance are not exempt from antidegradation procedures because high water quality may still be degraded.

E. Antidegradation standards when changes in existing water quality are not reasonably quantifiable (Proposed Minn. R. 7050.0270)

1. Subpart 1. Scope.

   Subpart 1. **Scope.** This part applies to activities regulated by the following control documents:

   A. new, reissued, or modified individual NPDES stormwater permits for municipal separate storm sewer systems, as defined under part 7090.0080, subpart 8;
   B. new, reissued, or modified general NPDES permits;
   C. section 401 certifications for new, reissued, or modified general federal licenses and permits; and
   D. other control documents that authorize net increases in loading or other causes of degradation and where changes in existing water quality of individual surface waters cannot reasonably be quantified through antidegradation procedures.

   Subpart 1 is needed to identify the range of activities to which the antidegradation standards apply. Items A to C specifically identify activities regulated under individual NPDES permits for municipal stormwater activities and general authorizations (e.g., general NPDES permits and CWA section 401 certifications of general federal licenses and permits). These types of control documents allow impacts to potentially numerous surface waters. The identity of which individual waters may be impacted is not known when the control document is issued. It is therefore reasonable not to expect that the existing water quality of the waters and projected impacts to that quality can be quantified. Item D requires antidegradation standards to be applied to other activities regulated under control documents where changes to existing water quality of individual waters cannot reasonably be quantified. Although the control documents identified in the first three items are those for which the MPCA intends to apply the standards under current regulatory authority, it is possible that other control documents could be required if additional regulatory authority is granted to the MPCA for currently unregulated activities. This provision reasonably provides flexibility if this were to happen and would avoid additional future changes to the proposed rule.

   General authorizations are provided to categories of permittees whose operations, emissions, activities, discharges, or facilities are the same or substantially similar. They are typically issued prior to knowing who will seek coverage, when applicants will seek coverage, how many applicants will seek coverage, and which surface waters will be impacted. The issuance of general authorizations provide for administrative efficiency where there are large numbers of applicants/permittees. For example, between 2008 and 2012, the MPCA provided coverage under the NPDES general construction stormwater permit for an average of 2,023 permittees each year. Requiring an assessment of existing water quality for each action covered under a general

authorization is not reasonable given the large number of actions covered and the lack of site-specific information when the authorization is issued.

In the case of municipal storm sewer systems, individual and general permit coverage is provided for activities that have the potential to impact all surface waters of the state within the entity's jurisdiction. It is not reasonable for the applicant or the MPCA to know which individual waters will be impacted over the life of the permit. Given the numerous (sometimes hundreds) waters of the state within each applicant's jurisdiction which may potentially be impacted, it is not reasonable to require water quality assessments on each.

2. Subpart 2. Protection of existing uses.

Subp. 2. **Protection of existing uses.** The commissioner shall issue control documents that will maintain and protect existing uses.

This provision is needed to fulfill federal antidegradation regulatory requirements to maintain and protect existing uses. Note that these standards do not provide for compensatory mitigation for the loss of existing uses, as was provided in the previous standards. Compensatory mitigation requires assessments of individual water bodies on a case-by-case basis. Where compensatory mitigation is allowed, the previous standards apply.

3. Subpart 3. Protection of beneficial uses.

Subp. 3. **Protection of beneficial uses.** The commissioner shall not issue a control document that would permanently preclude attainment of water quality standards.

As with the previous standards, this requirement is needed to ensure the protection of beneficial uses. The reasoning is the same in that this requirement comports with federal regulations requiring permit limits to be set at a level that will not cause or contribute to violations of standards (40 CFR § 122.44(d) (Exhibit 91)).

4. Subpart 4. Protection of surface waters of high quality.

Subp. 4. **Protection of surface waters of high quality.**

A. For the purpose of this part and on a parameter-by-parameter basis, Class 2 surface waters not identified as impaired pursuant to section 303(d) of the Clean Water Act are considered of high quality. Items B to E apply to Class 2 surface waters that are of high quality.

B. The commissioner shall not issue a control document when the commissioner makes a finding that prudent and feasible prevention, treatment or loading offset alternatives exist that would avoid net increases in loading or other causes of degradation. When the commissioner finds that prudent and feasible alternatives are not available to avoid net increases in loading or other causes of degradation, a control document shall only be issued when the commissioner makes a finding that the issuance of the control document will prudently and feasibly minimize net increases in loading or other causes of degradation.

C. The commissioner shall issue a control document that authorizes a net increase in loading or other causes of degradation only when the commissioner makes a finding that the issuance of the control document accommodates important economic or social change.

D. The commissioner shall issue a control document that would result in a net increase in loading or other causes of degradation to waters of high quality only if the commissioner determines that issuance of the control document will achieve compliance with all applicable state and federal surface water pollution control statutes and rules administered by the commissioner.

E. The commissioner shall provide an opportunity for intergovernmental coordination and public participation before issuing a control document that would result in net increases in loading or other causes of degradation.

These proposed Tier 2 protection standards are similar to proposed Minn. R. 7050.0265, subp. 5 which are standards applied when changes in existing water quality are reasonable quantifiable. Both standards contain provisions to minimize impacts, provide justification based on economic or social importance, require compliance with state and federal surface water pollution control statutes and rules, and allow for public participation. There are, however, three distinct differences between the two standards. The first is the difference in how high water quality is identified. Under the previous standards (proposed Minn. R. 7050.0265), high water quality is determined by the applicant's (and the MPCA's subsequent review or) assessment of existing water quality conditions of individual receiving waters. This is reasonable given the types activities/control documents (e.g., individual permits for wastewater activities) which are subject to the standards. Proposed Minn. R. 7050.0270, subp. 4(A) provides that high water quality be identified as those Class 2 surface waters not identified as impaired. Relying on previous 303(d) assessments to identify high water quality is reasonable because it is not realistic to make assessments of individual waters for each activity covered under the applicable control documents (e.g., general permits).

The second is that Tier 2 decisions in these standards are based on net increases in loading or other causes of degradation, not degradation itself as in the previous standards. Note that degradation is defined as a human-induced measureable decrease in existing water quality.

The third difference is how the determination of importance is made. Federal antidegradation regulations state that high water quality must be maintained unless a state finds "*…that allowing lower water quality is necessary to accommodate important economic or social development…*" (40 CFR § 131.12(a)(2)). The phrase "*lower water quality*" implies that existing conditions of a surface water and impacts to that water quality resulting from a proposed activity can reasonably be assessed before the activity is allowed. The demonstration of importance can then be made by weighing the detriments of lowering of water quality against the economic or social benefits resulting from the proposed activity. This is how the importance determination is made in the previous standards. The demonstration of importance is particularly challenging for activities where individual assessments of water quality are not reasonable. In the case of individual municipal stormwater permits and general permits, the MPCA will need to evaluate the economic or social benefits of issuing the control documents despite not

knowing which waters will be degraded and by how much. This is a reasonable approach given the numerous water bodies and activities covered under individual municipal stormwater permits and general permits.

It is worth noting that the same general approach to implementing antidegradation through general permits is taken by Washington State – an approach approved by EPA Region 10 (EPA Review of the 2003 Water Quality Standards for Antidegradation, USEPA Region 10 (May 2, 2007) (Exhibit 100)[100]. In regards to the federally-required importance demonstration, Washington's guidance provides that:

> *Ecology's decision to develop a general permit or a control program for a type of pollutant source is considered in the overriding public interest because it takes into account the costs and benefits of permitting a large number of activities in the most effective and efficient way possible, thus saving public funds while protecting water quality.* Water Quality Program Guidance Manual: Supplemental Guidance on Implementing Tier II Antidegradation, Department of Ecology, State of Washington, (2011) p.17 (Exhibit 96)

Note that Washington does not attempt to assess impacts to individual water bodies and weigh those impacts against the net benefits of the activities covered under the permit, but rather states that the decision to develop a general permit is, in itself, in the overriding public interest (i.e., accommodates important economic or social development).

This approach is in alignment with at least one scholarly analysis of implementing antidegradation requirements through general NPDES permits:

> *…the final general permit must contain a determination that* ***authorization of the discharge*** *is necessary for "economic and social development." This would reflect a formal determination for state-issued general permits. J. M. Gaba,* Generally Illegal: NPDES General Permits Under the Clean Water Act, Harvard Environmental Law Review, Vol. 31, (2007) p. 455 (Exhibit 101)[101] (emphasis added)

Again note that, for general NPDES permits, the determination of importance is not based on the lowering of high water quality but the authorization of the activity.

It is important to remember that the MPCA has the ability to require individual permit coverage when it determines that general permit coverage is not appropriate (Minn. R. 7001.0210, subp. 6). An example of when individual permit coverage may be required for an activity normally covered under a general authorization is when a proposed activity has the potential to degrade an ORVW.

5. Subpart 5. Protection of restricted outstanding resource value waters.

   Subp. 5. **Protection of restricted outstanding resource value waters.** The commissioner shall issue control documents that restrict net increases in loading or other causes of degradation as necessary to maintain the exceptional characteristics for which the restricted outstanding resource value waters identified under part 7050.0335, subparts 1 and 2, were designated.

This provision is similar to subpart 6 of the previous rule part, and provides for the protection of restricted ORVWs. The overall need and reasonableness is the same. Under this part, control document conditions must be such to ensure that the exceptional characteristics of restricted ORVWs are maintained. For example, a stormwater permit may require specific BMPs to protect these waters. Alternatively, the MPCA could require the applicant to provide an assessment of impacts to restricted ORVWs as a condition of control document coverage. It is important to remember that the public and other governmental agencies will have the opportunity to comment on the MPCA's preliminary determination on the control document conditions needed to protect restricted ORVWs.

6. Subpart 6. Protection of prohibited outstanding resource value waters.

   Subp. 6. **Protection of prohibited outstanding resource value waters.** The commissioner shall issue control documents that prohibit a net increase in loading or other causes of degradation to prohibited outstanding resource value waters identified under part 7050.0335, subparts 3 and 4.

   This provision is needed to satisfy federal regulatory requirements found at 40 CFR § 131.12(a)(3). In this case the control document conditions could specify that there be no net increase in loading or other causes of degradation to prohibited ORVWs. Again the public and governmental agencies will have the opportunity to weigh in on the MPCA's preliminary determination.

7. Subpart 7. Protection against impairments associated with thermal discharges.

   Subp. 7. **Protection against impairments associated with thermal discharges**. When there is potential for water quality impairment associated with thermal discharges, a control document that allows a net increase in loading or other causes of degradation must be consistent with section 316 of the Clean Water Act, United States Code, title 33, section 1326. When a variance is granted under section 316(a) of the Clean Water Act, United States Code, title 33, section 1326, antidegradation standards under this part still apply.

   This provision will meet federal regulatory requirements associated with antidegradation determinations involving potential thermal impairments. It is the same provision as found in the previous part and the reasoning for its inclusion is the same.

F. Exemptions from procedures (Proposed Minn. R. 7050.0275)

Exemptions from antidegradation procedures are provided for activities impacting Class 7 waters and temporary and limited impacts. The need and reasonableness of these exemptions is discussed below.

1. Subpart 1. Class 7 surface waters.

   Subp. 1. **Class 7 surface waters.** The procedures specified in parts 7050.0280 and 7050.0285 do not apply to proposed activities resulting in a net increase in loading or other causes of degradation to a Class 7 surface water except when, in the commissioner's judgment, there is reasonable risk that the proposed activity would result in:

A. the loss of existing uses and the level of water quality necessary to protect existing uses in the Class 7 surface water;
B. permanently precluding attainment of water quality standards:
C. degradation of downstream existing high water quality; or
D. degradation of downstream existing water quality essential to preserve the exceptional characteristics of outstanding resource value waters.

Subpart 1 provides an exemption from antidegradation procedures for activities anticipated to result in a net increase in loading or other causes of degradation to Class 7 surface waters. The proposed rules define a "Class 7 surface water" as:

> *…a surface water that is protected for limited resource value beneficial uses and to which water quality standards described in part 7050.0227 apply.* Proposed Minn. R. 7050.0255, subp. 7

Minn. R. 7050.0227 standards provide for the protection of aesthetic qualities, secondary body contact use, and groundwater for use as a potable water supply. Although these waters are protected by standards and may contain aquatic life, they are not considered to meet the CWA section 101(a)(2) interim goal:

> *…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;…* Federal Water Pollution Control Act, 33 U.S.C. § 1251 (1972, as amended)

Tier 2 protection allows lowering of water quality levels exceeding what is necessary for the propagation of fish, shellfish, and wildlife and recreation in and on the water, when the lowering is necessary to accommodate important economic or social development. This exemption is reasonable because it does not require a finding of necessity and importance for lowering the quality of waters not exceeding those levels. It is also reasonable because the MPCA has the ability to deny the exemption when there is reasonable risk that the proposed activity will not meet other antidegradation standards, namely that:

- Existing uses are maintained;
- Class 7 water quality standards are attained;
- Downstream high water quality is not degraded;
- Water quality essential to preserving exceptional characteristics of ORVWs is not degraded

Under the current nondegradation rule governing all waters (Minn. R. 7050.0185), new or expanded discharges greater than 200,000 gallons per day to Class 7 waters are not considered significant and therefore are not subject to nondegradation procedures. Proposed discharges under the current rules are still required to meet minimum treatment requirements to ensure water quality standards and existing beneficial uses are maintained. The proposed exemption for activities impacting Class 7 waters retains these requirements. However, the proposed rule language goes further by providing protection of downstream existing high water quality and ORVWs. This is reasonable because there may be situations where the impacts of a proposed discharge to a Class 7

water could result in the degradation of downstream ORVWs or waters of high quality. The proposed rules clearly articulate that, in such cases, antidegradation procedures are required to protect downstream waters.

Note that this exemption is applicable to antidegradation procedures for:

- individual NPDES wastewater permits and individual NPDES storm water permits for industrial and construction activities (Minn. R. 7050.0280); and
- section 401 certifications of individual federal licenses and permits (Minn. R. 7050.0285).

Limiting the applicability of this exemption is reasonable because individual surface waters impacted by proposed activities covered under the above-mentioned control documents can and will be identified prior to antidegradation review. For example, the MPCA will know if the impacted surface water is a Class 7 or not. Antidegradation determinations under these procedures are based on impacts to individual identifiable waterbodies. It is important to know that, even with this exemption, Class 7 waters will still be protected because the antidegradation standards (i.e., Minn. R. 7050.0265) require the maintenance of existing uses and water quality standards for all waters.

The exemption does not apply to procedures for individual MS4 stormwater permits and general authorizations (Minn. R. 7050.0290 through Minn. R. 7050.0315). This is reasonable because antidegradation determinations under these procedures are not based on the identity of individual water bodies.

2. Subpart 2. Temporary and limited degradation.

Subp. 2. **Temporary and limited degradation.** The procedures specified in parts 7050.0280 and 7050.0285 do not apply to proposed activities that result in temporary and limited degradation of high water quality when the requirements of items A to D are met.

A. The applicant must provide a request for an exemption, on forms developed by the commissioner, before submitting a control document application. The request must include:
   (1) identification of surface waters and associated beneficial uses which will be impacted by the regulated activity;
   (2) parameters likely to cause degradation;
   (3) length of time during which the water quality will be impacted, which must not exceed 12 months from when water quality is initially impacted by the proposed activity;
   (4) a description of water quality at the time the exemption is requested using methods described in part 7050.0260 and anticipated net changes to water quality for parameters likely to cause adverse impacts over the time period the surface waters are impacted;
   (5) a description of prevention, treatment, or loading offset alternatives that were considered to avoid and minimize net increases in loading or other

causes of degradation and the reasons why the selected alternative was chosen;

(6) a description of how water quality will be returned to pre-activity conditions within 12 months from when water quality is initially impacted by the proposed activity; and

(7) a description of any residual long-term impacts on existing uses.

B. The commissioner shall consider subitems (1) to (3) before deciding to approve or deny the requested exemption from antidegradation procedures for the proposed temporary and limited degradation:

(1) information submitted by the applicant under item A;

(2) information on cumulative effects on water quality from multiple exemptions for temporary and limited degradation; and

(3) other reliable information available to the commissioner.

C. The commissioner shall approve a proposed temporary and limited degradation of high water quality only when:

(1) existing uses and the level of water quality necessary to protect the existing uses are maintained and protected;

(2) it would not cause a permanent deviation from water quality standards; and

(3) a prudent and feasible alternative does not exist that would avoid or minimize the degradation.

D. If the temporary and limited degradation exemption is approved, the control document conditions must include an enforceable plan to ensure that water quality is returned to pre-activity conditions within 12 months from when water quality is initially impacted by the activity.

Subpart 2 provides an exemption from antidegradation procedures for activities resulting in temporary and limited degradation. Current nondegradation rules do not explicitly provide for temporary and limited degradation. The proposed exemption is reasonable for the following reasons:

- Alignment with the exemption provided in Minn. R. ch. 7052

  Minnesota rules contain nondegradation provisions regarding the discharge of bioaccumulative chemicals of concern (BCCs) to high quality waters in the Lake Superior basin (Minn. R. ch. 7052). Minn. R. 7052.0310, sub. 7(A) allows an exemption from review for activities resulting in short-term (i.e., weeks or months) lowering of water quality. The MPCA currently operates under nondegradation guidance to address short-term toxic discharges to all waters throughout the state (Nondegradation for short-term toxics discharges, MPCA internal guidance, April 4, 1999 (Exhibit 102)[102] to avoid potential conflicts with Minn. R. ch. 7052. The proposed exemption assures that the discharge of non-BCCs would not be treated more stringently than BCCs, which the MPCA regards as presenting a greater degree of environmental risk than most other pollutants.

- EPA guidance provides for short-term and temporary lowering of water quality in outstanding national resource waters

Even at the highest level of antidegradation protection (Tier 3), the EPA has provided guidance allowing for some limited activities which result in temporary and short-term changes in water quality:

> *The regulation requires water quality to be maintained and protected in ONRWs [Outstanding National Resource Waters]. The regulation requires water quality to be maintained and protected in ONRWs. EPA interprets this provision to mean no new or increased discharges to ONRWs and no new or increased discharge to tributaries to ONRWs that would result in lower water quality in the ONRWs. The only exception to this prohibition, as discussed in the preamble to the Water Quality Standards Regulation (48 F.R. 51402) permits States to allow some limited activities that result in temporary and short-term changes in the water quality of ONRW. Such activities must not permanently degrade water quality or result in water quality lower than that necessary to protect the existing uses in the ONRW. It is difficult to give an exact definition of "temporary" and "short-term" because of the variety of activities that might be considered. However, in rather broad terms, EPA's view of temporary is weeks and months, not years. The intent of EPA's provision clearly is to limit water quality degradation to the shortest possible time. If a construction activity is involved, for example, temporary is defined as the length of time necessary to construct the facility and make it operational. During any period of time when, after opportunity for public participation in the decision, the State allows temporary degradation, all practical means of minimizing such degradation shall be implemented.* Water Quality Standards Handbook, Second Edition, Chapter 4, U.S. EPA (1994), p. 10

The handbook provides example situations where short-term and temporary lowering of water quality may be allowed:

> *Example 1.* ***A national park wishes to replace a defective septic tank-drainfield system in a campground. The campground is located immediately adjacent to a small stream with the ONRW use designation.***
>
> *Under the regulation, the construction could occur if best management practices were scrupulously followed to minimize any disturbance of water quality or aquatic habitat.*
>
> *Example 2.* ***Same situation except the campground is served by a small sewage treatment plant already discharging to the ONRW. It is desired to enlarge the treatment system and provide higher levels of treatment.***
>
> *Under the regulation, this water-quality-enhancing action would be permitted if there was only temporary increase in sediment and, perhaps, in organic loading, which would occur during the actual construction phase.*

Example 3. ***A National forest with a mature, second growth of trees which are suitable for harvesting, with associated road repair and re-stabilization. Streams in the area are designated as ONRW and support trout fishing.***

The regulation intends that best management practices for timber harvesting be followed and might include preventive measures more stringent than for similar logging in less environmentally sensitive areas. Of course, if the lands were being considered for designation as wilderness areas or other similar designations, EPA's regulation should not be construed as encouraging or condoning timbering operations. The regulation allows only temporary and short-term water quality degradation while maintaining existing uses or new uses consistent with the purpose of the management of the ONRW area.

Other examples of these types of activities include maintenance and/or repair of existing boat ramps or boat docks, restoration of existing sea walls, repair of existing stormwater pipes, and replacement or repair of existing bridges. Water Quality Standards Handbook, Second Edition, Chapter 4, U.S. EPA (1994), p. 11

Rather than using the phrase "*short-term and temporary*" found in EPA guidance, the MPCA is proposing the phase "*temporary and limited.*" This is reasonable because "*short-term*" and "*temporary*" have essentially the same meaning and incorporating the term "*limited*" ensures that the magnitude of impacts are addressed.

The proposed exemption is reasonable because it extends the allowance for temporary lowering of water quality found for the highest level of protection (Tier 3) to high water quality protection (Tier 2).

- Exemptions will be addressed case-by-case

  Applying this exemption on a case-by-case basis is reasonable because it ensures that the quality of individual water bodies will be adequately protected. To accomplish this, the proposed exemption requires the applicant to provide the necessary information found in Item A to be used in the MPCA's decision. The MPCA decided not to include a "one-size-fits-all" decision criterion due to the wide range of activities and waters which may be covered under this provision.

  In particular, the request that the applicant provide information regarding existing water quality is needed and reasonable because in order to return water quality to a previous condition, the original condition must be understood. The risk of removing an existing or beneficial use, for example, is an important consideration in the MPCA's determination of whether to grant an exemption for temporary and limited impacts to high water quality. The MPCA may be willing to grant such an exemption when a water has a large amount of assimilative capacity, but may deny a request if the assimilative capacity of a water is very small.

- Temporary and limited impacts will be limited to 12 months

In regard to outstanding national resource waters, the EPA describes temporary as weeks and months, not years (Water Quality Standards Handbook, Second Edition, Chapter 4, U.S. EPA (1994), p. 10). The proposed exemption requires that water quality be returned to pre-activity conditions within 12 months from when high water quality is initially impacted by the activity. This time period is reasonable because it complies with EPA guidance. It is also reasonable to provide the permittee with adequate time to allow the water quality to return pre-activity conditions. For example, it is not unreasonable for some bridge construction projects to take up to 12 months from the time the project impacts water quality to the time the water quality is returned to pre-activity conditions. The MPCA believes that a proposed project which would impact water quality for a time period greater than 12 months is significant and should be required to undergo full antidegradation review.

- Opportunity for public participation

  EPA guidance recommends that states provide an opportunity for public participation before making a decision whether to allow for temporary degradation of outstanding national resource value waters (Water Quality Standards Handbook, Second Edition, Chapter 4, U.S. EPA (1994), p. 10). The proposed language requires the applicant to request an exemption before submitting a control document application. The opportunity for public comment regarding the temporary and limited exemption will be provided under Minn. R. 7001.0110 in connection with the issuance of the control document.

- Others states that have recently adopted antidegradation provisions have similar provisions

  Other states, such as Illinois (IL), Indiana (IN), Iowa (IA) and Michigan (MI), provide exemptions from antidegradation review for temporary impacts to both high water quality and outstanding waters (i.e., those receiving Tier 3 protection). In fact, the exemption found in the proposed rule closely resembles the exemption for temporary and limited degradation in Iowa Antidegradation Implementation Procedure (2010) (Exhibit 103)[103] (incorporated by reference into Iowa Administrative Code, 567, Chapter 61.2(2) (2011) (Exhibit 104)[104]).

- Timeliness of control document issuance

  The proposed exemption is reasonable because it will save time and effort on behalf of the MPCA and the regulated community by not requiring full antidegradation procedures for proposed activities with short-term and minimal impacts to water quality.

  Because of the potential effect of recurring temporary and limited impacts, it is necessary to draw a distinction between activities which are short-term but occur only once or very infrequently from those that are anticipated to occur periodically. One-time-only activities are generally construction projects for new facilities or existing project maintenance activities that occur once in ten or more years. An example of the former kind of activity is the disturbance of pollutant-laden sediments due to placement of footings and pilings during bridge construction over a water body. This kind of activity is not repeated on a predictable or frequent basis.

Therefore, exposure to pollutants occurs only once and for a short time-frame, and antidegradation procedures would not be required. This type of activity is in contrast to activities such as maintenance dredging, which may occur at a site for only a few days but is repeated regularly, so that the exposure to contaminated sediments is also repeated. Maintenance dredging activities are often accompanied by the need for areas to dispose of dredged sediment (call confined disposal facilities), which may also impact water quality through the return flow of water into the water body. Confined disposal facilities imply the potential for repeated exposures. Therefore, these types of re-occurring activities would not be exempt from antidegradation procedures.

This exemption is limited to procedures specified in Minn. R. 7050.080 and 7050.0285. This is reasonable because, both procedures are subject to antidegradation standards where changes in existing water quality can reasonably be quantified (i.e., Minn. R. 7050.0265). In other words, applicants will be able to describe, in quantitative terms, the temporary nature of a proposed activity.

Conversely, not providing the exemption to procedures identified in Minn. R. 7050.0290 through 7050.0315 makes sense because quantifying changes to existing water quality of individual surface waters is not reasonable for the applicable activities. In other words, applicants will not be able to describe, in quantitative terms, temporary changes to water quality of individual waters.

G. Procedures for individual NPDES wastewater permits and individual NPDES stormwater permits for industrial and construction activities. (Proposed Minn. R. 7050.0280)

This part is needed to describe procedures by which antidegradation requirements will be implemented through individual NPDES permits for regulated wastewater treatment, industrial stormwater and construction stormwater activities.

Minn. Stat. § 115.03, subd. 1 gives the MPCA regulatory authority to administer and enforce all laws related to pollution of waters of the state. The MPCA grants authorization to activities that impact water quality through the issuance of control documents including CWA § 402 permits (i.e., NPDES permits). The NPDES is a federal program established under the CWA to protect the nation's waterways from regulated point sources. The MPCA was first given authorization from EPA to issue NPDES permits in 1974. Specific state authority for administering NPDES permits is found at Minn. Stat. § 115.03, subd. 5. These permits specify the conditions under which the activity is allowed to operate in order to protect water quality and is therefore a reasonable mechanism through which antidegradation may be implemented.

Procedures for these two types of NPDES permits are reasonably combined because, in each case, coverage is provided by the MPCA for activities impacting single or relatively few surface waters. The identity of those individual waters is known prior to the permit application.

Note that the MPCA has not issued individual construction stormwater permits. However, there is nothing that precludes the MPCA from doing so in the future. Including individual

construction stormwater permits in this provision is reasonable because it provides flexibility.

The need and reasonableness of each subpart is discussed below.

1. Subpart 1. Antidegradation procedures required.
   Subpart 1. **Antidegradation procedures required.** Except as provided in part 7050.0275, the antidegradation procedures in this part apply to new, reissued, or modified individual NPDES wastewater, industrial stormwater, and construction stormwater permits that the commissioner anticipates will result in net increases in loading or other causes of degradation to surface waters.

   This subpart is needed because it describes the circumstances that trigger antidegradation procedures. The proposed provision requires antidegradation procedures when the MPCA anticipates that a proposed regulated activity will result in a net increase in loading or other causes of degradation. Note that the same trigger is used for all of the remaining types of control documents. The need and reasonableness of proposing this trigger is addressed in a question and answer format below.

   a. *Why is the current significance threshold not included in the proposed rules as a means to trigger antidegradation procedures?*

      The current significance threshold for triggering antidegradation procedures is not included in the proposed rules for reasons provided in Section 4.B.3.

   b. *Why does the proposed provision not include a significance threshold which would allow for* de minimis *high water quality degradation?*

      The provision does not provide an exemption for *de minimis* degradation of high water quality for the following reasons.

      - Not all parameters which may degrade high water quality have numeric water quality standards

        If used, significance thresholds should reasonably be based on the effect a proposed activity will have on the quality of the surface water. The current significance threshold does not meet this standard. As discussed in Section 4.B.3., EPA guidance recommends that the consumption of assimilative capacity be used for this purpose. The determination of assimilative capacity requires that a parameter have a numeric water quality standard. However, not all parameters that degrade high water quality have numeric standards. For example, there is currently no nitrate standard to protect aquatic life. It is therefore difficult to apply significance thresholds (based on consumption of assimilative capacity) where numeric water quality standards do not exist.

      - Multiple thresholds may be needed to account for varying risk levels to water quality

        A single assimilative capacity threshold for all parameters does not reflect the risks associated with wide-ranging effects of pollutants on aquatic life and recreation. Take, for example, a single significance threshold that triggers antidegradation procedures when greater than 10% of the available assimilative capacity will be consumed. Not requiring procedures for a proposed activity which will consume less than 10% of available assimilative capacity for total

suspended solids (TSS) may be justifiable in some instances. The same threshold may not be prudent when considering an increase in a bioaccumulative toxin which poses an unacceptable risk even at very low levels. This doesn't mean that multiple thresholds could not be used, but they would add considerable complexity to antidegradation procedures.

- Difficulty in accounting for cumulative impacts

  Unacceptable levels of degradation may occur as a result of *de minimis* degradation where there are no methods to trigger antidegradation procedures based on cumulative impacts. If states use the consumption of assimilative capacity to trigger antidegradation procedures, EPA guidance recommends that states incorporate cumulative caps based on the use of **total** assimilative capacity, defined as:

  > *…the baseline assimilative capacity of a waterbody established at a specific point in time.* Tier 2 Antidegradation Reviews and Significance Thresholds, U.S. EPA memorandum from Ephraim S. King (Office of Science and Technology) to Water Management Division Directors, Regions 1-10, (2005)

  In other words when a predetermined amount of total assimilative capacity is consumed, antidegradation procedures are required regardless of the amount of remaining assimilative capacity.

  Tracking the consumption of total assimilative capacity requires that baseline water quality conditions are established at some fixed point in time. Establishing a single baseline date for all parameters which may be subject to antidegradation requirements presents challenges when there are incomplete monitoring data for a given parameter. Multiple baseline dates for individual surface waters could be established once data become available. This would require a significant amount of effort to track, store and analyze data related to the total assimilative capacity of many individual surface waters for multiple parameters. The MPCA believes that this effort could be better expended in work to minimize water quality impacts.

  There have also been some legal challenges surrounding cumulative caps in states' antidegradation procedures. In one case involving a challenge to the EPA's approval of Kentucky's antidegradation procedures, the Sixth Circuit Court of Appeals held that the EPA failed to analyze the cumulative effects of *de minimis* exemptions and also failed to document calculations or estimates of the assimilative capacity of a water body that would be expected to be lost under the exemptions (Kentucky Waterways Alliance v. Johnson, 540 F.3d 446, 492-493 (6th Cir. 2008) (Exhibit 57). In another instance the EPA's approval of West Virginia's significance threshold of 10% of available assimilative capacity was upheld in court. However, the Court rejected West Virginia's and the EPA's arguments that a cumulative cap of 20% was a *de minimis* lowering of water quality consistent with federal mandate (Ohio Valley Environmental Coalition v. Horinko, 279 F. Supp. 2d 732, 738, 773 and 777 (S.D.W.V., 2003) (Exhibit 56).

- Prudent use of human resources to achieve environmental protection

Using resources to conduct the alternatives analysis and identify pollution control measures which minimize degradation achieves greater environmental benefit than using significant resources to determine whether or not antidegradation procedures are triggered.

c. *How does a "net increase in loading or other causes of degradation" trigger antidegradation procedures?*

As a starting point the reader is referred to the need for and reasonableness of the definition for "net increase in loading and other causes of degradation" in Section 5.B.26.

Antidegradation procedures will always be required for new activities that are anticipated to result in a net increase in loading or other causes of degradation, because the activity had not previously operated under a control document. For the reissuance of control documents, antidegradation procedures are triggered when the anticipated loading or other causes of degradation exceeds the maximum authorized in the existing permit. For NPDES-permitted wastewater activities, anticipated loading is determined using numeric effluent limits and appropriate design characteristics of the facility. The determination of maximum loading is dependent upon the type of facility and associated effluent limits.

Antidegradation procedures are triggered by the maximum loading allowed, not actual loadings. This is reasonable because what is authorized is typically based on projected needs to allow for future growth or expansion. For example, it is not uncommon for municipal wastewater treatment operators to project loading needs over a 20-year period and request to be permitted accordingly. Activities resulting in incremental loading within limitations authorized by the MPCA, such as municipal sewer extensions, occur with relative frequency, allowing the applicant to adequately plan for facility expansion based on authorized loadings. An existing facility may be subject to antidegradation procedures when reissuance is sought, even if the facility does not want to change existing authorized limitations. New information may become available that a given pollutant not considered in procedures conducted previously is now of concern. In such cases, antidegradation procedures addressing that pollutant would be warranted.

Water pollution from stormwater discharges is generally controlled through BMPs rather than numeric effluent limits. For permit reissuance of existing discharges, antidegradation procedures will be required when changes at the facility (industrial discharges) or within jurisdictional boundaries (municipal discharges) will cause an increase in loading or other causes of degradation beyond that allowed by the existing permit. For example, procedures will be required for an industrial stormwater facility which increases its chemical storage area for pollutants of concern and where that area is exposed to stormwater runoff.

The proposed rule's baseline date for triggering antidegradation procedures differs from the current rules. The current rule's baseline for increased loading to non-ORVWs is January 1, 1998. The proposed rules' baseline date for these waters is the effective date of the most-recently issued permit. This change is reasonable because increased loading or other causes of degradation may be allowed through antidegradation determinations in subsequent reissuances. Therefore it is

reasonable that the baseline reflect the loading or other causes of degradation already authorized by MPCA antidegradation determinations. The baseline date for ORVWs remains unchanged – the date upon which the ORVW was designated in rule.

Subpart 1 requires antidegradation procedures for proposed activities that are anticipated to impact surface waters of the state. "Waters of the state" is defined in statute as:

> *…all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof.* Minn. Stat. § 115.01, subd. 22

The definition is further clarified in Minn. R. 7050.0130, subp. 2, which states that waters of the state have the same meaning as that given in Minn. Stat. § 115.01 except that disposal systems or treatment works operated under permits or certificates of compliance are not waters of the state. Thus, it is reasonable that antidegradation provisions, as with other parts of the state's water quality standards rules, apply only to activities impacting surface waters of the state as defined in Minn. R. 7050.0130. This is reasonable because the CWA and federal regulations governing water quality standards, including 40 CFR § 131.12, apply to surface waters. Minn. R. 7060.0500 provides nondegradation policy for groundwater.

2. Subpart 2. Applicant's antidegradation assessment.
   Subp. 2. **Applicant's antidegradation assessment.** The applicant must include the following information with the written permit application specified in part 7001.0050:
   - A. an analysis of alternatives that avoid net increases in loading or other causes of degradation through prudent and feasible prevention, treatment, or loading offsets;
   - B. when the commissioner determines there are no prudent and feasible alternatives to avoid net increases in loading or other causes of degradation, an assessment of:
     - (1) existing uses; and
     - (2) existing water quality using determination methods described in part 7050.0260.
   - C. when the commissioner determines there are no prudent and feasible alternatives to avoid net increases in loading or other causes of degradation to existing high water quality:
     - (1) an analysis of prudent and feasible alternatives that minimize degradation through prudent and feasible prevention, treatment, or loading offsets that identifies the least degrading prudent and feasible alternatives;

(2) the design considerations and constraints, expected performance, construction, operation, and maintenance costs, and reliability of the least degrading prudent and feasible alternatives; and

(3) the following information based on the least degrading prudent and feasible alternatives:

(a) a comparison of loading or other causes of degradation previously authorized by the commissioner in the most recently issued control document to the anticipated loading or other causes of degradation expected when the proposed activity is fully implemented;

(b) a comparison of existing water quality to the anticipated water quality when the proposed activity is fully implemented; and

(c) for the geographic area in which high water quality degradation is reasonably anticipated, a comparison of existing and expected economic conditions and social services when the proposed activity is fully implemented. The comparison must include the factors identified in part 7050.0265, subpart 5, item B, subitems (1) to (6).

The proposed rules improve upon the existing provisions by including implementation procedures which clearly identify the roles and responsibilities of applicants, the MPCA and entities interested in the MPCA's antidegradation determinations. Subpart 2 requires the applicant to provide the MPCA with an antidegradation assessment of the proposed activity. The assessment contains information the MPCA will need to conduct a review and provide a determination of whether and to what extent water quality may be lowered. It is reasonable that the applicant provide this information because it is the applicant who is requesting authorization for an activity which is anticipated to result in water quality degradation. The applicant is also the entity who is most familiar with the proposed activity and is therefore best able to provide the necessary information.

Although the trigger for antidegradation procedures is very broad (i.e., activities anticipated to result in a net increase in loading or other causes of degradation), the assessment and subsequent review will be limited to parameters of concern. Parameters of concern:

- are pollutants reasonably expected in a discharge or as a result of a proposed activity;
- are anticipated to cause degradation (i.e., measurable change to existing water quality made or induced by human activity resulting in diminished conditions of surface waters);
- have numeric or narrative standards;
- present the greatest risk of degradation.

Review of parameters of concern applies to all three levels or Tiers of antidegradation protection. Regarding Tier 1 protection, parameters will be reviewed that present risks to the loss of existing uses. Tier 2 protection will require a review of parameters that present risks to aquatic life and recreation – those for which there are Class 2 numeric or narrative standards. Tier 3 protection will require review of parameters that present risks to degrading exceptional characteristics of ORVWs.

Limiting antidegradation procedures to parameters of concern is reasonable for the following reasons.

- Wise use of available resources

  Identifying parameters of concern allows the applicant and the MPCA staff to focus available resources on those parameters that present the greatest risk to water quality. Requiring an applicant to provide an assessment, and for the MPCA to review the assessment, on every parameter that could potentially impact water quality is an unreasonable undertaking. Providing and reviewing an assessment for all parameters for which there are water quality standards would require resources more prudently placed on the alternatives analysis – the goal of which is to avoid and minimize degradation from those parameters that present the greatest environmental risk.

- Parameters of concern are identified based on the characteristics of the discharge or activity

  Given the wide range of sources, it is prudent to identify parameters that are expected to impact existing water quality associated with a particular type of activity. For example, total phosphorus may be a parameter of concern for municipal wastewater discharges, but may not be of concern for an industrial wastewater discharge. (See discussion below on suggested parameters of concern based on regulated activity.)

- Parameters of concern are identified based on the characteristics of the surface water

  The selection of parameters of concern also depends on the characteristics of individual waters. For example, the discharge of a given pollutant to a surface water with a relatively large amount of assimilative capacity may not be of concern. On the other hand, the discharge of an equal quantity of the same pollutant may be of concern in a water having very little assimilative capacity.

- Meaningful alternatives analysis

  One improvement that the proposed rules provide is that they place greater emphasis on the alternatives analysis. When conducting an alternatives analysis it is imperative that parameters of concern be identified in order to have a meaningful evaluation of pollution prevention and treatment alternatives.

- Identifying parameters of concern is consistent with the parameter-by-parameter approach to identifying high water quality

  The proposed rules identify high water quality on a parameter-by-parameter basis. It is therefore reasonable that individual parameters be evaluated to ensure high water quality is not unnecessarily degraded.

- The selection of parameters reviewed is subject to public comment

  As with other components of the MPCA's preliminary antidegradation determinations, the public has the opportunity to weigh in on which parameters are reviewed.

Selecting which parameters to review will require consultation between applicants and the MPCA. While applicants will generally have a better understanding of the pollutants associated with the proposed activity, the MPCA may have a better understanding of

the impacted surface water quality. It is the MPCA that will ultimately decide which parameters will be reviewed because it is the MPCA which responsible for making antidegradation determinations.

It is possible to generically identify some parameters of concern based on the type of regulated activity and the MPCA will do so in guidance. Having a list of activity-based parameters of concern would benefit prospective applicants who are in the early stages of planning. The following parameters of concern are examples of those associated with identified activities:

- Municipal wastewater treatment discharges:
  - total phosphorus (TP)
  - total suspended solids (TSS)
  - carbonaceous biochemical oxygen demand (CBOD)
  - ammonia
  - nitrate
  - chloride
  - bacteria
  - temperature (when impacting cold-water streams)
- Industrial wastewater treatment discharges:

  Pollutants discharged from industrial facilities vary greatly and depend on the industry type. Federal effluent guidelines may be used to assist in the identification of parameters of concern.
- Municipal storm water discharges:
  - TP
  - TSS
  - chloride
  - bacteria
  - temperature (when impacting cold-water streams)
- Industrial storm water discharges:

  Like industrial wastewater facilities, pollutants associated with industrial storm water discharges depend upon specific industries. Either or both of the following may be used to identify parameters of concern: 1) activities for which there is a narrative description associating it with industrial stormwater, and/or 2) activities with a primary Standard Industrial Classification (SIC) code that is included at 40 CFR § 122.26(b)(14) (Exhibit 78)
- Construction stormwater discharges:
  - TP
  - TSS
- Activities causing physical alterations (e.g., those requiring section 404 permits)
  - TP
  - TSS

Additional flexibility and efficiency may be achieved by grouping parameters of concern based on pollutant fate characteristics and use a representative pollutant as the surrogate parameter to evaluate for the larger group. For example, pollutants that are largely hydrophobic and associate with solids may be represented by TSS. Use of

surrogate parameters not only reduces the number of parameters reviewed, but may also assist in the identification of pollution control measures considered in the alternatives analysis.

In most cases, parameters of concern will be identified prior to the initiation of the antidegradation assessment. However, there may be situations where additional parameters may require evaluation to account for unforeseen or unique, site-specific circumstances. In addition to the pollutants of concern, regulated entities may also be requested to provide water quality data for parameters necessary to determine the appropriate value range of water quality criteria (e.g., pH, temperature, hardness). For example, if a dissolved metal is a pollutant of concern, a regulated entity may also be requested to provide hardness data to translate the total metal present in the discharge to an in-stream dissolved concentration. Again, the importance of consultation between the applicant and the MPCA prior to the selection of parameters of concern cannot be overstated.

Subpart 2 requires that the antidegradation assessment be included with the written permit application specified in Minn. R. 7001.0050. This requirement is reasonable because it allows the MPCA enough time to review the assessment and make a preliminary determination within the 150-day period set as a goal for issuing or denying permits (Minn. Stat. § 116.03, subd. 2(b)).

Items A to C describe the specific information that needs to be included in the assessment.

a. *Item A – Analysis of alternatives that avoid net increases in loading or other causes of degradation through prudent and feasible prevention, treatment, or loading offsets.*

   Federal antidegradation regulations prohibit the lowering of high water quality unless it is "*…necessary to accommodate important social or economic development…*" 40 CFR 131.12(a)(2) An approach recommended by the EPA is to require the proponent of a proposed activity to develop an analysis of pollution control/pollution prevention alternatives (Advanced Notice of Proposed Rulemaking, 63 Fed. Reg. 36741 (1998), p. 36784). The alternatives analysis requires applicants to justify their chosen alternative and show that the proposed water quality degradation is necessary because reasonable non-degrading alternatives are not available (EPA Region VIII Guidance: Antidegradation Implementation, Chapter 2 (1993), p. 19 (Exhibit 82); Advanced Notice of Proposed Rulemaking, 63 Fed. Reg. 36741 (1998), p. 36783).

   Item A requires the applicant to provide an analysis of alternatives that avoid "*net increases in loading or other causes of degradation…*" Note that the language does not require the applicant to provide analysis of alternatives that "*…avoid degradation,*" which would require an assessment of measurable changes to existing water quality. The way the proposed language is written allows the applicant to evaluate the loading or causes of degradation without the need to make a water quality assessment. A water quality assessment will only be required if the applicant demonstrates that additional loading or other causes of degradation cannot reasonably be avoided.

Item A requires the applicant to evaluate prudent and feasible prevention, treatment, or loading offsets alternatives. The "*prudent and feasible*" standard is reasonable because it allows for considerations that are unique to a specific project and the applicant's ability to implement alternatives that avoid or minimize degradation. The proposed rules define a "*prudent alternative*" as:

> *… a pollution control alternative selected with care and sound judgment. (proposed Minn. R. 7050.0255, subp. 34)*

Cost effectiveness will likely be a consideration in the determination of whether the implementation of a given alternative is prudent. Opportunity costs may also be considered in determining whether an alternative is prudent. For example, lost income from lots in a proposed subdivision that would be used for land application of treated wastewater rather than housing, or losses related to process changes that result in missed production runs are legitimate and may be considered if adequately documented. The applicant's analysis may also include consideration of whether or not the alternative is equitable. For example, a project that will disproportionately impact the low-income members of the community may not be equitable. Thresholds for equity may differ from community to community. Therefore, an understanding of the social needs and conditions of the community may be used to determine if an alternative is socially equitable. Additionally, the analysis may consider the overall needs in the community. For instance, the analysis may consider funds that are available to the community to pay for pollution control but that are already targeted for education, health care, and other needs of high priority in the affected community. Thought should also be given to environmental impacts other than those to surface waters. For example, an alternative that provides for infiltration of untreated contaminated stormwater near ground water drinking sources may not be reasonable, even when infiltration is technically feasible.

There are a number of factors that are to be considered by the applicant on whether an alternative is "*feasible.*" The proposed rule defines a "*feasible alternative*" as:

> *… a pollution control alternative that is consistent with sound engineering and environmental practices, affordable, and legally and that has supportive governance that can be successfully put into practice to accomplish the task.* Proposed Minn. R. 7050.0255, subp. 17

The evaluation of alternatives that are consistent with sound engineering is reasonable because it ensures only proven and reliable alternatives are considered. Pollution control technologies are continually evolving and improving. Some newer pollution control technologies hold promise in their ability to treat wastewater. An applicant may propose the implementation of such technologies but will need to provide adequate information regarding effectiveness and reliability.

The applicant's ability to pay for a given alternative will also be taken into consideration. In order to justify the elimination of an alternative from consideration, the applicant must demonstrate to the MPCA's satisfaction that the costs of the alternative are unaffordable given facility- and site-specific (or community-specific in the case of public-sector projects) considerations. The MPCA realizes that the determination of what represents affordable pollution control alternatives is case-specific. Therefore, the MPCA is not proposing a defined threshold to determine affordability. The

determination of affordability for public and private entities is an emerging issue nationally. As such, EPA guidance has not yet been finalized. Until such time, the applicant may use the EPA's Interim Economic Guidance for Water Quality Standards, U.S. EPA (1995) (Exhibit 97) for the determination of affordability. This guidance document presents two sets of procedures: one for public sector projects and the other for private sector projects. For public sector developments, EPA's Guidance determines whether the community can clearly afford to pay for the project by focusing on the average total pollution control cost per household, the community's ability to obtain financing for the project, and the general economic health of the community. For private sector projects, the guidance investigates the effect of the proposed alternative on profits and requires consideration of a number of other factors to develop a full picture of the applicant's financial health. In order to demonstrate that an alternative is not affordable, the applicant may provide all information necessary to apply the screening tests described in the EPA's Interim Economic Guidance or provide other compelling information regarding affordability. (Attachment 4 provides further detail on EPA's Interim Economic Guidance.)

The consideration of the legality of the alternative is reasonable because the MPCA should not approve an alternative that is contrary to current laws. An example of an alternative that is not feasible because is it not legally possible is a treatment method involving the use of chemicals prohibited under federal or state law.

The alternative must also have supportive governance to ensure it can be implemented in the context of local and state governmental directives and priorities. As an example, a city's stormwater plan may discourage infiltration of contaminated stormwater runoff around groundwater wellheads to protect drinking water sources. A stormwater treatment alternative relying on this kind of infiltration would not be considered feasible on the grounds that the infiltration alternative does not have supportive governance.

Item A requires the applicant to evaluate alternatives in terms of prevention, treatment and loading offsets. Evaluating pollutant source reduction focuses attention on alternatives that will not lead to the release of pollutants to the environment rather than on those that depend upon treating the pollution after it is generated. If pollution prevention alternatives prove not prudent or feasible, then it is reasonable to consider treatment as means to avoid net increases in loading or other causes of degradation. This approach is consistent with the hierarchy outlined in the policy of the Pollution Prevention Act of 1990 (40 U.S.C. § 13101(b)) (Exhibit 105)[105].

Loading offsets are also considered in the alternatives analysis. For the purposes of the proposed rules, loading offsets create addition capacity for proposed loading. In order for this to happen, a reduction in loading must occur upstream of the proposed activity. An offset resulting in compensation of the entire proposed loading means that there is no net increase in loading to the surface water. In such cases further antidegradation procedures would not be required. This is in alignment with EPA trading policy:

> *Antidegradation. Trading should be consistent with applicable water quality standards, including a state's and tribe's antidegradation policy established to maintain and protect existing instream water uses and the level of water quality necessary to support them, as well as high quality waters and outstanding national resource waters (40 CFR*

> *131.12). EPA recommends that state or tribal antidegradation policies include provisions for trading to occur without requiring antidegradation review for high quality waters. EPA does not believe that trades and trading programs will result in "lower water quality" as that term is used in 40 CFR 131.12(a)(2), or that antidegradation review would be required under EPA's regulations when the trades or trading programs achieve a* ***no net increase of the pollutant traded*** *and do not result in any impairment of designated uses.* Water Quality Trading Policy, U.S. EPA, Office of Water (2003), p. 8 (Exhibit 106)[106] (emphasis in original)

There is also a legal precedent that supports loading offsets in regards to potential water quality impairments. The Minnesota Supreme Court ruled in 2007 that the MPCA's interpretation of 40 CFR § 122.4(i) (Exhibit 107)[107] as allowing offsets from another source in determining whether a new source will cause or contribute to the violation of water quality standards was reasonable. The Court also ruled that deference should be given to the MPCA's interpretation of its rules and the MPCA's decision to provide permit coverage to the new wastewater treatment plant should be upheld (Cities of Annandale and Maple Lake NPDES/SDS Permit Issuance for the Discharge of Treated Wastewater, 731, N.W.2d 502) (Mn. Sup. Ct. 2007) (Exhibit 108)[108]). The case stemmed from a requirement under 40 CFR § 122.4(i) that an NPDES permit may not be issued for a new source when its discharge will cause or contribute to the impairment of waters with impaired status under the CWA. The MPCA had issued an NPDES permit for a wastewater treatment plant jointly proposed by the City of Annandale and the City of Maple Lake (the Cities). The MPCA found that the proposed plant—when operating at capacity—would increase phosphorus discharge to the North Fork of the Crow River by approximately 2,200 pounds per year over that discharged by the Cities' existing facilities. The MPCA also concluded that, under 40 CFR § 122.4(i), this increase would not contribute to the violation of water quality standards in the Lake Pepin watershed. The MPCA reached this conclusion and issued a permit on the basis that the increased discharge would be offset by an approximately 53,500-pound annual reduction in phosphorus discharge due to an upgrade of a wastewater treatment plant in nearby Litchfield.

The requirement to consider prevention, treatment and loading offset alternatives is fairly broad and therefore gives the applicant flexibility to address the individual characteristics of each proposed activity. The MPCA intends to develop guidance on the alternatives analysis that will assist the applicant's evaluation. The alternatives under consideration for wastewater treatment activities include, but are not limited to, the following:

- holding tanks with transport to a permitted treatment system
- pipeline conveyance to a permitted treatment system/regionalization
- pollution prevention, pollution minimization and/or pretreatment techniques
- modified, additional or enhanced treatment technology alternatives and treatment levels , such as changing from continuous discharge to controlled or seasonal discharge, filters, or chemical addition

- reduction in the scale of the activity, such as downsizing the project and/or implementing water conservation practices so that a land disposal method might be used
- discharge to alternative locations
- loading offsets/pollutant trading, such as point to point trading and point to nonpoint trading
- recycle/reuse of pollutants and/or water
- improved operation and maintenance of existing pollution prevention and treatment systems.
- land application and/or infiltration, such as spray irrigation, rapid infiltration, mound systems.
- alternative water supply source(s) and/or alternative water supply treatment technologies, such as a water supply with lower pollutant levels, hardness levels)

b. Item B – Assessment of existing uses and existing water quality when avoidance is not prudent or feasible

When the MPCA determines that there are no prudent and feasible alternatives that avoid a net increase in loading or other causes of degradation, additional requirements are included in the assessment. Item B(1) requires the applicant to provide an assessment of existing uses.

Uses are specified in two places within the CWA. The interim goal of the CWA:

> *…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.* Federal Water Pollution Control Act, 33 U.S.C. § 1251 (CWA section 101(a)(2)) (emphasis added) (Exhibit 12)

Section 303(c)(2)(A) of the CWA requires states to incorporate specific uses in their water quality standards:

> *Whenever the State revises or adopts a new standard, such revised or new standard shall be submitted to the Administrator. Such revised or new water quality standard shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses. Such standards shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this chapter. Such standards shall be established taking into consideration their use and value for* ***public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation****.* Federal Water Pollution Control Act, 33 U.S.C. § 1313 (CWA section 303) (emphasis added) (Exhibit 13)

Requiring the applicant to identify existing uses is reasonable because it is the applicant who will likely be most familiar with the characteristics and uses of the surface water which will be impacted.

Item B(2) asks the applicant to provide an assessment of existing water quality using procedures described in proposed Minn. R. 7050.0260. An existing water quality assessment is necessary to determine if the water body is of high quality for the parameter in question which will, in turn, dictate whether additional Tier 2 protection steps are required. This is in alignment with EPA guidance:

> *The applicant may be required to provide monitoring data or other information about the affected water body to help determine the applicability of tier 2 requirements based on the high-quality test. The information that will be required in a given situation will be identified on a case-by-case basis.* EPA Region VIII Guidance: Antidegradation Implementation, Chapter 2 (1993), p. 15 (Exhibit 82)

The EPA's Water Quality Guidance for the Great Lakes System: Supplementary Information Document (SID) (U.S. EPA, Office of Water (1995) (Exhibit 83)) also discusses conducting reviews of potential degradation in terms that assume existing water quality data are known or will be collected. The guidance specifies that the level of protection afforded a water body under antidegradation protection will be determined on a parameter-by-parameter basis, considering each individual pollutant separately from the others present in a water body. The guidance notes that under this approach:

> *… the ambient level of the pollutants of interest would be determined and compared to the applicable criteria. Where ambient concentrations of the pollutants in question are less than criteria concentrations, the water body would be considered high quality for those pollutants and increases in those pollutants would be subject to the requirements applicable to high quality waters.* Water Quality Guidance for the Great Lakes System: Supplementary Information Document (SID)*, U.S. EPA, Office of Water (1995), Section VII(C)(2)(b)(i) (Exhibit 83)*

If the parameter of concern is not of high quality no further information will be required as part of the antidegradation assessment. There are, however, two possible outcomes when a water body is found to be impaired. The first is if there is an EPA-approved TMDL for the parameter of concern, the permit will contain conditions that are consistent with the TMDL. The second situation is where a water body is impaired for a parameter of concern but there is not an EPA-approved TMDL. In such cases, the proposed activity will not be allowed to contribute to the impairment.

If a parameter of concern is of high quality, the assessment of existing water quality is needed to establish a baseline from which degradation is measured. This is reasonable because without an understanding of baseline conditions the MPCA cannot make meaningful determinations of whether the net benefits of a proposed activity outweigh water quality degradation.

As previously mentioned an existing water quality assessment is necessary to determine if the water body is of high quality for the parameter in question. Note that federal regulations prohibit lowering high water quality (i.e., that quality which

exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) unless the lowering is necessary to accommodate important economic or social development. Minnesota's Class 2 numeric and narrative standards for aquatic life and recreation generally represent these levels. There may be situations where an assessment of a parameter indicates levels of water quality that do not support aquatic life and recreation, and a numeric Class 2 standard does not exist. An example is the lack of a Class 2 numeric standard for nitrate. In such situations the MPCA will need to make case-by-case decisions regarding the level of water quality necessary to protect aquatic life and recreation. The MPCA anticipates that these situations will be very rare.

c. *Item C, sub-item 1 – Analysis of alternatives that minimize existing high water quality degradation*

Item C(1) requires that when the impacted water is of high quality and there are no prudent and feasible alternatives to avoid net increases in loading or other causes of degradation, the applicant must identify alternatives that minimize degradation. This analysis includes the concepts of "*prudent and feasible*", as well as "*prevention, treatment, or loading offsets*" already described above. In addition, the applicant needs to identify the least degrading prudent and feasible alternative. This is in alignment with the EPA's recommendation that the alternatives evaluation should:

> *…ensure that all feasible alternatives to allowing degradation have been adequately evaluated, and that the least degrading alternative is implemented.* Advanced Notice of Proposed Rulemaking, 63 Fed. Reg. 36741 (1998), p. 36784.

d. *Item C, sub-item 2 – Characteristics of the least degrading prudent and feasible alternative*

This provision requires the applicant to provide the MPCA with information pertinent to the design, expected performance, construction, operational and maintenance costs, and reliability of the least degrading prudent and feasible alternative. This is reasonable because it will allow MPCA staff to work with the applicant in verifying that the selected alternative is indeed prudent and feasible.

e. *Item C, sub-item 3(a) – Comparisons of loading and other causes of degradation*

Once the least degrading prudent and feasible alternative is identified, projected loading and other causes of degradation can be compared to that previously authorized. This provision is reasonable because the resulting net increase in loading or other causes of degradation will then be used to estimate the impacts to existing water quality.

f. *Item C, sub-item 3(b) – Water quality comparisons*

This provision is needed to evaluate how water quality will change as a result of implementing the least degrading prudent and feasible alternative. This information will in turn be used by the MPCA to evaluate whether the resulting degradation is important to accommodate important economic or social development. The requirement for the applicant to provide an assessment of impacts to existing water quality is in alignment with Minnesota legislative policy for the development of regulatory methods that:

> *…encourage facility owners and operators to assess the pollution they emit or cause, directly and indirectly, to the air, water, and land;* Minn. Stat. § 114C.01(1)

g. Item C, sub-item 3(c) – Comparison of economic conditions and social services

This provision is needed so that the MPCA can make the required determinations of whether the economic or social benefits of a proposed activity outweigh the resulting degradation to high water quality. Regarding this requirement, EPA guidance states that:

> *This provision is intended to provide relief only in a few extraordinary circumstances where the economic and social need for the activity clearly outweighs the benefit of maintaining water quality above that required for "fishable/swimmable" water, and both cannot be achieved. The burden of demonstration on the individual proposing such activity will be very high.* Water Quality Standards Handbook, Second Edition, Chapter 4, U. S. EPA (1994), p. 7

The provision requires the applicant to provide a comparison between the existing economic conditions and social services to what is anticipated when the proposed activity is fully implemented. The comparison is confined to the area where high water quality degradation is anticipated for reasons discussed in Section 5.D.5. Net estimates are required because a reasonable estimate must take into account both the positive and the negative impacts of proposed projects. Failing to do so would present a one-sided and unreasonable picture of the changes expected to follow from a proposal. The comparison is to include the factors identified in proposed Minn. R. 7050.0265, subp. 5(B)(1 to 6). This is reasonable because these are the specific elements upon which the MPCA will make its determination of importance. The justification for including the factors is presented in Section 5.D.5.

The MPCA suggests that applicants use the following steps in their comparisons.

Step 1. Identify the geographic area where degradation of high water quality is anticipated

The geographic area where high water quality degradation is anticipated will be dependent upon the characteristics of parameter in question. Parameter characteristics may include whether the parameter tends to persist in the aquatic environment or is rapidly attenuated. The area of impact will also be dictated by how much of the parameter is released and the characteristics of the water itself. For example, the area of impact will likely be smaller for waters having more dilution capacity compared to ones with less dilution capacity, when the pollutant type and amount discharged are the same.

Step 2. Identify the affected communities

The affected communities are those within the geographic area in which high water quality degradation is anticipated as identified in Step 1.

Step 3. Identify relevant factors that characterize the social and economic conditions of the affected community

In order to describe the economic conditions and social services associated with the proposed activity, the applicant will need to determine the economic and social factors that best characterize the affected community. Some of the factors identified in proposed Minn. R. 7050.0265, subp. 5(B)(1 to 6) may be more relevant than others depending upon the type of activity. For example, private sector activities may have little or no impact on social services, whereas a public sector activity, such as a municipal wastewater treatment plant, may. In the case of municipal wastewater treatment plants, social services could include the extension of sewered areas, which may in turn allow for improved social services, such as the building of new schools.

Step 4. Describe the expected changes associated with the proposed activity

The applicant will then describe the expected changes in the factors identified in Step 3 by comparing the existing to the predicted conditions of the affected community.

Step 5. Provide a justification for high water quality degradation

Providing a justification for high water quality degradation allows the applicant the opportunity to summarize how the economic and social benefits of the proposed activity outweigh the impacts of lowering of high water quality.

In summary, requiring the applicant to provide an antidegradation assessment is reasonable because it is the applicant who is requesting authorization to discharge to or otherwise impact surface waters of the state and who is most familiar with the proposed activity. The MPCA needs this information to make antidegradation determinations. Note that any information submitted in the antidegradation assessment which contains trade secret information will be kept confidential by the MPCA as nonpublic data pursuant to Minn. Stat. § 13.37, subd. 2. "*Trade secret information*" means:

> *government data, including a formula, pattern, compilation, program, device, method, technique or process (1) that was supplied by the affected individual or organization, (2) that is the subject of efforts by the individual or organization that are reasonable under the circumstances to maintain its secrecy, and (3) that derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use.* Minn. Stat. § 13.37, subd. 1(b)

3. Subpart 3. Antidegradation review.

Subp. 3. **Antidegradation review.** The commissioner shall conduct an antidegradation review based on the information provided under subpart 2 and other reliable information available to the commissioner concerning the proposed activity and other activities that cause cumulative changes in existing water quality in the surface waters. The purpose of the antidegradation review is to evaluate whether the proposed activity will satisfy the antidegradation standards in part 7050.0265. If, in the commissioner's judgment, the antidegradation standards described in part 7050.0265 will not be satisfied, the commissioner shall provide written notification to the applicant of the

deficiencies and provide recommendations necessary to satisfy the antidegradation standards in part 7050.0265.

Subpart 3 is needed because it describes how the MPCA will evaluate information relevant to satisfying the antidegradation standards found in proposed Minn. R. 7050.0265. It is reasonable that the review be based on the applicant's antidegradation assessment because the purpose of providing the assessment is to inform the MPCA of the proposed activity and its impact to water quality. It is also reasonable that the MPCA base the review on other relevant information that may not be contained in the applicant's assessment. For example, the MPCA (but not the applicant) may be aware of trends in nonpoint source (i.e., unregulated source) pollutant contributions in the watershed where the proposed activity is planned. It is reasonable that the MPCA notify the applicant of any deficiencies so that the applicant, with the MPCA's assistance, can work towards meeting the standards. Providing a written notification of deficiencies is reasonable because doing so provides transparency in the MPCA's decision.

4. Subpart 4. Preliminary antidegradation determination.

Subp. 4. **Preliminary antidegradation determination.** Based upon the review described in subpart 3, the commissioner shall prepare a written preliminary antidegradation determination as to whether the antidegradation standards described in part 7050.0265 are satisfied. The preliminary antidegradation determination must be included with the commissioner's preliminary determination to issue or deny the permit according to part 7001.0100. If, in the commissioner's judgment, the antidegradation standards are not satisfied, reasons why they are not satisfied must be included in the preliminary antidegradation determination.

Subpart 4 requires the MPCA to provide written documentation as to whether the proposed activity will satisfy the antidegradation standards. The preliminary determinations are the means by which those interested in proposed activities are informed and upon which comments are based. It is reasonable that the preliminary determination be included in the decision to issue or deny the permit through existing procedures in Minn. R. 7001.0100 because it is at this point the MPCA determines whether the proposed activity will or will not meet regulatory requirements.

The MPCA anticipates that at this point in the process and through dialogue with the applicant, the vast majority of determinations will result in standards being satisfied. Where serious problems exist with meeting standards, applicants will likely withdraw the proposed activity from consideration early in the process. However, there may be situations where a resolution may not be reached. In these cases it is reasonable that the MPCA include in the preliminary determination the reasons for why antidegradation standards are not met.

5. Subpart 5. Opportunity for comment.

Subp. 5. Opportunity for comment. The commissioner shall:

A. include the preliminary antidegradation determination with the public notice to issue or deny the permit according to part 7001.0100, subpart 4;

B. distribute the public notice according to part 7001.0100, subpart 5; and

C. provide opportunity for comment on the preliminary antidegradation determination according to part 7001.0110.

Subpart 5 allows those interested in how proposed activities impact water quality to comment on the MPCA's preliminary determinations. This subpart is also needed to satisfy federal regulatory requirements found in 40 CFR § 131.12(a)(2). Federal regulations make a distinction between "intergovernmental coordination" and "public participation." The proposed rules combine the two by providing the opportunity for comment from any entity interested in a proposed activity. Minn. R. 7001.0100, subp. 5(B) requires the distribution of the public notice to all persons who have registered their names and addresses on the mailing list established under Minn. R. 7001.0200. This list includes government agencies which have an interest in the MPCA's permit issuances. Additionally, large complex projects involve numerous regulating agencies that will be aware of MPCA's role in environmental protection, including antidegradation requirements.

As with the existing rules, the proposed rules provide an opportunity for comment through processes found in Minn. R ch. 7001. This is a reasonable approach because they are existing procedures that have proven to be an effective way of receiving comments.

6. Subpart 6. Final antidegradation determination.

Subp. 6. **Final antidegradation determination.** The commissioner shall consider comments received under subpart 5 before preparing a written final antidegradation determination. The final antidegradation determination must include a statement of whether the proposed activity achieves or fails to achieve the antidegradation standards specified in part 7050.0265. The final antidegradation determination must be included with the commissioner's final determination to authorize or not authorize the proposed activity according to part 7001.0140.

Requiring a final antidegradation determination is needed because it allows the MPCA to go on record that either 1) the issuance of the permit will provide for antidegradation protection requirements found in proposed Minn. R. 7050.0265 and 40 § CFR 131.12 or 2) the permit is not being issued because the proposed activity cannot meet the antidegradation protection requirements. It is reasonable that the final determination be included with the final determination to authorize or not authorize the activity through existing procedures found in Minn. R. 7001.0140.

H. Procedures for section 401 certifications of individual federal licenses and permits. (Proposed Minn. R. 7050.0285)

Antidegradation standards are implemented through the issuance and enforcement of control documents including section 401 certifications of federal licenses and permits. Section 401 of the CWA requires anyone who wishes to obtain a federal license of permit for any activity that may result in a discharge to waters of the United States to obtain a section 401 certification to ensure proposed projects comply with the state's water quality standards.

EPA guidance specifically calls for states to apply antidegradation through section 401 certifications:

> *It is the position of EPA that, at a minimum, States and authorized Tribes must apply antidegradation requirements to activities that are ''regulated'' under State, Tribal, or federal law (i.e., any activity that requires a permit or a water quality certification pursuant to State, Tribal or federal law, such as CWA § 402 NPDES permits or CWA § 404 dredge and fill permits, any activity requiring a CWA § 401 certification, any activity subject to State or Tribal nonpoint source control requirements or regulations, and any activity which is otherwise subject to State or Tribal regulations that specify that water quality standards are applicable).* Advanced Notice of Proposed Rulemaking, 63 Fed. Reg. 36741 (1998), p. 36780

Further EPA guidance states that:

> *If a State fails to require compliance with its antidegradation policy through section 401 certification related to permits issued by other Federal agencies (e.g., a Corps of Engineers section 404 permit), EPA could comment unfavorably upon permit issuance.* Water Quality Standards Handbook, Second Edition, Chapter 4, U. S. EPA (1994), p. 13

This part is needed to fulfill the federal regulatory requirements to ensure activities regulated under federal licenses and permits comply with the state's water quality standards, including antidegradation requirements.

The vast majority of federal licenses and permits for which section 401 actions are taken by the MPCA are CWA section 404 dredge and fill permits issued by the ACE. Other federal licenses and permits which require section 401 actions include hydropower projects seeking a license from the Federal Energy Regulatory Commission and activities requiring Rivers and Harbors Act sections 9 and 10 (33 U.S.C. § 401 (Exhibit 109)[109] and 33 U.S.C. § 403 (Exhibit 110)[110], respectively) permits issued by the ACE or the Coast Guard.

Federal regulations governing section 404 activities contain some requirements that are very similar to those required in the federal antidegradation regulations. The decision-making process relative to section 404 permitting is contained in the CWA section 404(b)(1) guidelines (40 CFR § 230) (Exhibit 84). Prior to issuing a section 404 permit under the 404(b)(1) guidelines, the ACE:

- makes a determination whether the proposed activity discharge are unavoidable;
- examines alternatives to the proposed activity and authorizes only the least damaging practicable alternative;
- requires mitigation for remaining unavoidable impacts

In addition, the ACE is required to conduct a public interest review to ensure that permitting decisions are based on the evaluation of:

> *…the benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments.* 33 CFR § 320.4(a)(1) (Exhibit 111)[111]

The intention of these proposed procedures is not to create an unnecessarily duplicative process, but rather to ensure compatibility with the ACE permitting processes. The MPCA is the CWA delegated authority to develop, implement and enforce water quality standards, including antidegradation requirements. As such, the ACE relies on the MPCA's section 401 actions to make sure that the issuance of section 404 permits does indeed comply with those standards.

1. Subpart 1. Antidegradation procedures required.

   Subpart 1. **Antidegradation procedures required.** Except as provided in part 7050.0275, the antidegradation procedures in this part apply to section 401 certifications of new, reissued, or modified individual federal licenses and permits that the commissioner anticipates will result in net increases in loading or other causes of degradation to surface waters.

   This subpart is needed to describe the circumstances that trigger antidegradation procedures when CWA section 401 certifications are issued, reissued, revoked and reissued, or modified for individual federal licenses and permits. The specific circumstances that trigger antidegradation procedures are the same as proposed procedures for other control documents. The need and reasonableness for the trigger is found in Section 5.G.1.

2. Subpart 2. Applicant's antidegradation assessment.

   Subp. 2. **Applicant's antidegradation assessment.** The applicant must provide information specified in part 7050.0280, subpart 2, to the commissioner, unless the applicant is notified that the commissioner is waiving the agency's authority to certify the federal license or permit under part 7001.1460. In addition, the applicant may propose compensatory mitigation for the loss of existing uses and the level of water quality necessary to protect the existing uses resulting from physical alteration. In such cases, the applicant must provide a compensatory mitigation plan that includes:

   A. a description of existing uses and the level of water quality necessary to protect existing uses of the surface waters that will be physically altered;
   B. a description of existing uses and the level of water quality necessary to protect existing uses of the surface waters in which mitigation will occur;
   C. a description of how compensatory mitigation will fully replace existing uses and the level of water quality necessary to protect existing uses; and
   D. a proposal for monitoring and reporting the changes in existing uses and the level of water quality necessary to protect existing uses of the surface waters in which mitigation will occur.

   As with proposed Minn. R. 7050.0280, procedures for section 401 actions taken on individual federal licenses and permits requires the applicant to provide an antidegradation assessment of the proposed activity to the MPCA. The reasoning for doing so is the same (Section 5.G.2.).

   The exception for an applicant to provide an assessment is when the MPCA exercises its authority to waive a section 401 certification. Minn. R. 7001.1460 provides this

authority. This exception is reasonable because it would be unnecessary for the applicant to go through the effort of providing an assessment when the MPCA exercises its waiving authority.

Unlike procedures proposed in Minn. R. 7050.0280, this proposed provision does not require the antidegradation assessment to be part of the written application specified in Minn. R. 7001.0050. The reason for this is that, in general, federal license and permit applicants submit their applications directly to the federal agency governing the activity (e.g., the ACE). Under current practices, applicants for 404 permits in Minnesota submit a simplified joint application (Minnesota Local/State/Federal Application Forms for Water/Wetland Projects, September 17, 2007, (Exhibit 112)[112], the intent of which is to satisfy permitting needs of local units of government, the ACE, the MDNR, the Minnesota Board of Water and Soil Resources (MBWSR), and the MPCA. The ACE receives an application and then decides whether the proposed activity warrants coverage under an individual or general CWA section 404 permit. If individual coverage is warranted, the application is sent to the MPCA for section 401 considerations. Oftentimes the MPCA will request additional information from the applicant for complex projects that pose significant risks to water quality. Note that the MPCA and the ACE continue to work together in developing section 404 permit/section 401 certification applications to satisfy the requirements of both agencies.

Some of the information needed for antidegradation determinations that is missing from (or lacks clarity in) the current joint application includes the following:

- The narrow scope of waters (wetlands and public waters) covered in the permit application, which does not adequately address waters of the state. The focus of the joint application is on public waters which are lakes, wetlands, and watercourses over which MDNR has regulatory jurisdiction. The statutory definition of "*public waters*" and "*public waters wetlands*" are found at Minn. Stat. § 103G.005**,** subd. 5, and Minn. Stat. § 103G.005, subd. 5a**.** Although there is considerable overlap in water body types, the definition of "*public waters*" is different than the definition of "*waters of the state*" found in Minn. Stat. § 115.01, subd. 22 or Minn. R. 7050.0130, subp. 2.
- A clear description of alternatives that avoid, minimize or mitigate impacts to waters other than wetlands.
- A description of existing water quality and resulting impacts to that quality.
- A description of impacts outside of the immediate project area (e.g., impacts to downstream waters).
- Justification for impacts based on economic or social development needs.

Detailed information requested in the proposed antidegradation assessment will only be required of the applicant if a section 401 certification of an individual section 404 permit is required and antidegradation procedures are triggered. It would be unreasonable for an applicant to spend effort in providing a detailed assessment if the project merits only general permit coverage or does not trigger antidegradation procedures. The elements required in the proposed provision are the same as those required of applicants under proposed Minn. R. 7050.0280. The need and reasonableness of each element is provided in Section 5.G.2.

There is one additional element not found in the assessment under proposed Minn. R. 7050.0280 – that the applicant may propose compensatory mitigation for the loss of an existing use resulting from physical alteration. Inclusion of this element is reasonable because section 404 permits which regulate physical alterations include allowance for compensatory mitigation, while NPDES permits do not.

Federal regulations at 33 CFR § 332, jointly developed by the ACE and the EPA, govern compensatory mitigation for the losses of aquatic resources. The requirements described in the proposed provision, and shown below, are reasonable because they comport with these regulations.

- Applicant's responsibility for proposing a mitigation plan

  > *Permit applicants are responsible for proposing an appropriate compensatory mitigation option to offset unavoidable impacts.* 33 CFR § 332.3(a)(1) (Exhibit 88)
  >
  > *For individual permits, the permittee must prepare a draft mitigation plan and submit it to the district engineer for review*. 33 CFR § 332.4(c)(1)(i) (Exhibit 113)[113]

- The plan includes baseline information regarding the water bodies which will be impacted and the water bodies in which mitigation will occur

  > *Baseline information. A description of the ecological characteristics of the proposed compensatory mitigation project site and, in the case of an application for a DA permit, the impact site. This may include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions, a map showing the locations of the impact and mitigation site(s) or the geographic coordinates for those site(s), and other site characteristics appropriate to the type of resource proposed as compensation.* 33 CFR § 332.4(c)(5) (Exhibit 113)

- The plan includes a description of how compensatory mitigation will be accomplished

  > *Objectives. A description of the resource type(s) and amount(s) that will be provided, the method of compensation (i.e., restoration, establishment, enhancement, and/or preservation), and the manner in which the resource functions of the compensatory mitigation project will address the needs of the watershed, ecoregion, physiographic province, or other geographic area of interest.* 33 CFR § 332.4(c)(2) (Exhibit 113)

- The plan includes a proposal for monitoring the changes in water quality of the water bodies in which mitigation has occurred

  > *Monitoring requirements. A description of parameters to be monitored in order to determine if the compensatory mitigation project is on track to meet performance standards and if adaptive management is needed. A schedule for monitoring and reporting on monitoring results to the district engineer must be included.* 33

CFR § 332.4(c)(10) (Exhibit 113) (Also see CFR § 332.6 (Exhibit 114)[114] for more detail.)

3. Subpart 3. Antidegradation review.

   Subp. 3. **Antidegradation review.** The commissioner shall conduct an antidegradation review based on the information provided under subpart 2 and other reliable information available to the commissioner concerning the proposed activity and other activities that cause cumulative changes in existing water quality in the surface waters. The purpose of the antidegradation review is to evaluate whether issuing the section 401 certification for the proposed activity will satisfy the antidegradation standards in part 7050.0265.

   This provision is nearly identical to the antidegradation review proposed in the previous procedures. The only difference is that the MPCA does not provide notification to the applicant when the MPCA finds that the applicable antidegradation standards will not be satisfied. Rather, the MPCA places conditions on the license or permit to ensure antidegradation standards are satisfied. In situations where they cannot be satisfied, even with additional conditions, the certification will be denied. Under the section 401 program, the MPCA has the authority to include conditions that become part of a federal permit or license or deny certification to ensure standards are met.

4. Subpart 4. Preliminary antidegradation determination.

   Subp. 4. **Preliminary antidegradation determination.** Based upon the review described in subpart 3, the commissioner shall prepare a written preliminary antidegradation determination as to whether the antidegradation standards described in part 7050.0265 are satisfied or can be satisfied by issuing a section 401 certification with conditions. The preliminary antidegradation determination must be included with the commissioner's preliminary determination to issue or deny the section 401 certification according to part 7001.0100 and, if applicable, include the conditions necessary to satisfy antidegradation standards. If, in the commissioner's judgment, the antidegradation standards are not satisfied, reasons why they are not satisfied must be included in the preliminary antidegradation determination.

   The requirements for preliminary determinations under these procedures are the same as that found in the previous procedures, the need and reasonableness for which was discussed in Section 5.G.4. As noted above, the MPCA has the authority to include conditions or deny certification to ensure standards are met.

5. Subpart 5. Opportunity for comment.

   Subp. 5. **Opportunity for comment.** The commissioner shall prepare and distribute a public notice of the preliminary antidegradation determination with the preliminary determination to issue or deny the section 401 certification through the procedures described in part 7001.1440, except that part 7001.1440, subpart 2.

The need and reasonableness of providing an opportunity for comment is addressed in Section 5.G.5. The proposed provision reasonably utilizes existing procedures found in Minn. R. 7001.1440 to obtain comments through the section 401 certification process. However, the proposed provision contains one exception to the procedures found in Minn. R. 7001.1440. Subpart 2 of this rule states that:

> *The commissioner is not required to prepare and distribute a public notice pursuant to part 7001.0100, subpart 4, if the commissioner finds that a federal agency or department has prepared and distributed or will prepare and distribute a public notice concerning a section 401 certification in accordance with the public notice requirements applicable to the federal agency or department under federal statutes or regulations, so long as the notice is actually prepared and distributed.* Minn. R. 7001.1440, subp. 2

Proposed subpart 5 requires the MPCA to provide a separate public notice of the preliminary determination. Federal authorities generally issue public notices of receipt of a project application, prior to the MPCA's review of the proposed activity. Relying on a federal authority's public notice will not allow the public to comment on whether the proposed project, with or without conditions, meets antidegradation standards. This is particularly true regarding the MPCA's responsibilities for the protection of high water quality. Federal antidegradation regulations at 40 CFR § 131.12(a)(2) require the MPCA to make a finding that lowering of high water quality is necessary to accommodate important economic or social development after the opportunity for public participation. Ultimately, it is the MPCA, not the federal authority, which is responsible for implementing antidegradation requirements and making antidegradation determinations. Therefore the public should have the opportunity to weigh in on MPCA's determinations.

6. Subpart 6. Final antidegradation determination.

Subp. 6. **Final antidegradation determination.** The commissioner shall consider comments received under subpart 5 before preparing a written final antidegradation determination. The final antidegradation determination must include a statement of whether the proposed activity achieves or fails to achieve the antidegradation standards specified in part 7050.0265. The final antidegradation determination must be included with the commissioner's final determination according to part 7001.1450.

The need and reasonableness of providing a final determination was addressed in Section 5.G.6. It is reasonable that the final antidegradation determination be included with the MPCA's final determination to issue or deny the CWA section 401 certification through existing procedures found in Minn. R. 7001.1450.

I. Procedures for individual NPDES permits for municipal separate storm sewer systems. (Proposed Minn. R. 7050.0290)

This part is needed to implement antidegradation provisions through the issuance of individual NPDES permits for municipal stormwater activities.

1. Subpart 1. Antidegradation procedures required.

Subpart 1. **Antidegradation procedures required.** The antidegradation procedures in this part apply to new, reissued, or modified individual NPDES permits for municipal separate storm sewer systems, as defined under part 7090.0080, subpart 8, that the commissioner anticipates will result in net increases in loading or other causes of degradation to surface waters.

This subpart is needed to describe the circumstances that trigger antidegradation procedures for activities regulated under individual NPDES permits for municipal stormwater activities. The specific circumstances that trigger antidegradation procedures are the same as proposed procedures for other control documents. The need and reasonableness for the trigger is found in Section 5.G.1.

Further clarification may be helpful to explain how procedures are actually triggered under this type of control document. Because municipal stormwater permits, both general and individual, provide coverage for activities that impact multiple surface waters within a municipality's jurisdiction, a question arises as to whether antidegradation procedures are triggered based on aggregate loadings to all surface waters within the jurisdiction or whether procedures are triggered when there are anticipated increased loadings to any of the individual surface waters within the municipality's jurisdiction. The MPCA believes that latter approach better aligns with the intent of antidegradation policies to provide protection to individual surface waters. Therefore antidegradation procedures will be required when a net increase in loading or other causes of degradation are anticipated for any surface water within the municipality's jurisdiction.

2. Subpart 2. Applicant's antidegradation assessment.

Subp. 2. **Applicant's antidegradation assessment.** The applicant must include the following information with the written permit application specified in part 7001.0050:

A. a list of Class 2 surface waters identified as impaired pursuant to section 303(d) of the Clean Water Act within the applicant's jurisdiction;
B. a list of surface waters listed in part 7050.0335 within the applicant's jurisdiction;
C. an analysis of prudent and feasible prevention, treatment, or loading offset alternatives that avoid or minimize net increases in loading or other causes of degradation to high water quality;
D. identification of prudent and feasible prevention, treatment, or loading offset alternatives that result in the least net increase in loading or other causes of degradation to high water quality; and
E. an evaluation of whether net increases in loading or other causes of degradation to high water quality accommodates important economic or social change in the geographic area in which high water quality degradation is reasonably anticipated.

The general need and reasonableness of including an applicant's antidegradation assessment is discussed in Section 5.G.2. This subpart is similar to the assessment requirements found in the two previous procedures in that the applicant is required to

provide an alternatives analysis that evaluates whether net increases in loading or other causes of degradation can prudently and feasibly be avoided. The alternatives analysis differs from the previous procedures by requiring the applicant to identify alternatives which prudently and feasibly minimize net increases in loading or other causes of degradation, rather than minimizing degradation. The reason for this difference is that, as further explained in Section 5.E.1., requiring municipal stormwater permit applicants to provide assessments of existing water quality and impacts to existing water quality of individual surface waters is not reasonable.

Because water quality assessment of individual surface waters is not reasonable, Item A requires the applicant to provide a list of Class 2 impairments within the applicant's jusisdictionThis is important because the MPCA will need to include different permit conditions depending on whether or not the impacted water is impaired. Permit conditions to protect impaired waters must avoid net increases in loading, or align with EPA-approved TMDLs. Conditions for waters that are of high quality will need to ensure that net increases in loading are minimized to the extent prudent and feasible.

The applicant is also required to provide a list of ORVWs within the applicant's jurisdiction (Item B). The reasoning is similar to that stated above – so that permit conditions may be developed to provide for the maintenance and protection of the exceptional ORVW characteristics.

Item C and D are needed to determine whether the net increase in loading or other causes of degradation can prudently and feasible be avoided, and, when this is not possible, identify alternatives that minimize net increases in loading or other causes of degradation. Providing this information is reasonable because it will assist the MPCA in the determination of whether the increased loading is necessary.

Item E requires the applicant to provide an evaluation of whether the increased loading or other causes of degradation accommodate important economic or social development. This provision is needed to help the MPCA in its determination of whether the increased loading is important. Note that this provision does not require the applicant to justify high water quality degradation because of the impracticality in measuring changes to existing water quality under situations where very large number of surface waters are covered under a given control document.

3. Subpart 3. Antidegradation review.

   Subp. 3. **Antidegradation review.** The commissioner shall conduct an antidegradation review based on the information provided under subpart 2 and other reliable information available to the commissioner concerning the proposed activity and other activities that cause cumulative changes in existing water quality in the surface waters. The purpose of the antidegradation review is to evaluate whether the proposed activity will satisfy the antidegradation standards in part 7050.0270. If, in the commissioner's judgment, the antidegradation standards described in part 7050.0270 will not be satisfied, the commissioner shall provide written notification to the applicant of the deficiencies and provide recommendations necessary to satisfy the antidegradation standards in part 7050.0270.

This subpart is similar to the antidegradation review proposed for other individual NPDES permits (proposed Minn. R. 7050.0280, subpart 3). The difference is that this review looks at whether the proposed activity will satisfy the antidegradation standards specific to control documents where individual water quality assessments are not reasonable (proposed Minn. R. 7050.0270). The need for and reasonableness of conducting an antidegradation review is provided in Section 5.G.3.

4. Subpart 4. Preliminary antidegradation determination.

   Subp. 4. **Preliminary antidegradation determination.** Based upon the review described in subpart 3, the commissioner shall prepare a written preliminary antidegradation determination as to whether the antidegradation standards described in part 7050.0270 are satisfied. The preliminary antidegradation determination must be included with the commissioner's preliminary determination to issue or deny the permit according to part 7001.0100. If, in the commissioner's judgment, the antidegradation standards are not satisfied, reasons why they are not satisfied must be included in the preliminary antidegradation determination.

   Again, this provision is similar to the preliminary determination proposed for other individual NPDES permits (proposed Minn. R. 7050.0280, subpart 4). The difference is that this preliminary determination is based on the antidegradation standards specific to control documents where individual water quality assessments are not reasonable (proposed Minn. R. 7050.0270). The need for and reasonableness of providing a preliminary determination is provided in Section 5.G.4.

5. Subpart 5. Opportunity for comment.

   Subp. 5. **Opportunity for comment.** The commissioner shall:
   A. include the preliminary antidegradation determination with the public notice to issue or deny the permit according to part 7001.0100, subpart 4;
   B. distribute the public notice according to part 7001.0100, subpart 5; and
   C. provide opportunity for comment on the preliminary antidegradation determination according to part 7001.0110.

This provision is identical to proposed Minn. R. 7050.0280, subpart 5. The proposed rule language is repeated here because referencing the previous provision would not shorten the rule. The need for and reasonableness of providing an opportunity for comment is provided in Section 5.G.5.

6. Subpart 6. Final antidegradation determination.

   Subp. 6. **Final antidegradation determination.** The commissioner shall consider comments received under subpart 5 before preparing a written final antidegradation determination. The final antidegradation determination must include a statement of whether the proposed activity achieves or fails to achieve the antidegradation standards specified in part 7050.0270. The final antidegradation determination must be included with the commissioner's final determination to authorize or not authorize the proposed activity according to part 7001.0140.

This provision is similar to the final antidegradation determination proposed for other individual NPDES permits (proposed Minn. R. 7050.0280, subpart 6). The difference is that in this case the final determination is made regarding whether the proposed activity will satisfy the antidegradation standards specific to control documents where individual water quality assessments are not reasonable (proposed Minn. R. 7050.0270). The need for and reasonableness of providing a final determination is provided in Section 5.G.6.

J. Procedures for general NPDES permits. (Proposed Minn. R. 7050.0295)

General NPDES permits are issued to categories of permittees whose operations, emissions, activities, discharges, or facilities are the same or substantially similar (Minn. R. 7001.0010, subp. 4). The issuance of general permits provides for administrative efficiency where there are large numbers of permittees. This part is needed to implement antidegradation through the issuance of general NPDES permits.

1. Subpart 1. Antidegradation procedures required.

   Subpart 1. **Antidegradation procedures required.** The antidegradation procedures in this part apply to new, reissued, or modified general NPDES permits that the commissioner anticipates will result in net increases in loading or other causes of degradation to surface waters.

   This subpart is needed to describe the circumstances that trigger antidegradation procedures for activities regulated under general NPDES permits. The specific circumstances that trigger antidegradation procedures are the same as proposed procedures for other control documents. The need and reasonableness for the trigger is found in Section 5.G.1.

2. Subpart 2. Antidegradation review.

   Subp. 2. **Antidegradation review.** The commissioner shall conduct an antidegradation review during the development of general NPDES permits. The purpose of the antidegradation review is to develop permit conditions that will ensure that the antidegradation standards in part 7050.0270 are satisfied.

   Unlike the three previous procedures for individual authorizations, these procedures do not require applicants to provide antidegradation assessments. Subpart 2 requires the MPCA to conduct an antidegradation review during the development of general permits. This is reasonable because it mediates the tensions between the administrative efficiency of general permit programs and federal antidegradation requirements. Requiring each applicant seeking coverage under a general permit to prepare an antidegradation assessment and the MPCA to conduct a review on each assessment is impractical. For example, between 2008 and 2012, the MPCA provided coverage under the NPDES general construction stormwater permit for 2,023 permittees each year on average.

   The review evaluates whether the issuance of the permit will satisfy the antidegradation standards specified in proposed Minn. R. 7050.0270. These standards include all of the required antidegradation protection elements required in federal regulations. In order to satisfy the standards, the MPCA must analyze the pollution control measures that

avoid and minimize net increases in loading or other causes of degradation. The evaluation of alternatives and the identification of pollution control measures that minimize net increases in loading or other causes of degradation are reasonable because it fits well with current permit development practices. The selection of pollution control measures which avoid and minimize impacts to surface waters and their incorporation into permit conditions is currently practiced through an adaptive management process. Adaptive management allows the MPCA to evaluate the effectiveness of control measures over sequential permit cycles. Control measures that prove to be effective will likely be included in subsequent permit conditions and those that are ineffective will likely be dropped. In addition, our understanding of practices that improve and protect water quality is continually growing. Conducting evaluations of pollution control measures during the development of each general permit allows the MPCA to better protect the State's waters. The evaluation of alternatives is also reasonable because it creates transparency in the MPCA's decision-making process. Although the evaluation of pollution control measures is currently practiced, it is not formally called an "*alternatives analysis.*" This provision gives the practice a title, provides a framework for the evaluation and provides for greater transparency through the public comment.

Best management practices (BMPs), often employed in stormwater permits to achieve compliance with water quality standards, are one set of control measures the MPCA may consider in the evaluation of alternatives. However, the alternatives analysis is not limited strictly to BMPs and may include other means, such as design standards, to minimize water quality impacts. For example, to promote low impact development the Minnesota legislature in 2008 authorized the MPCA to develop design standards:

> *The agency shall develop performance standards, design standards, or other tools to enable and promote the implementation of low-impact development and other storm water management techniques. For the purposes of this section, "low-impact development" means an approach to storm water management that mimics a site's natural hydrology as the landscape is developed. Using the low-impact development approach, storm water is managed on-site and the rate and volume of predevelopment storm water reaching receiving waters is unchanged. The calculation of predevelopment hydrology is based on native soil and vegetation.* Minn. Stat. § 115.03*, subd. 5c(c)*

One of the outcomes of this legislation is an effort to develop minimal impact design standards (MIDS) with the objectives of:

- reducing runoff volumes and rates;
- improving runoff quality;
- developing a unified crediting system for practitioners and the MPCA to document pollutant load reductions.

The MIDS concept was initiated by a partnership among the Minnesota Cities Stormwater Coalition, regulated stormwater entities, the League of Minnesota Cities, the Builder's Association of the Twin Cities, environmental advocacy organizations, local watershed districts, the Stormwater Steering Committee of the MPCA, and state legislators interested in water quality protection. From this partnership a MIDS

workgroup was formed to develop performance goals, a credit calculator and model ordinances. Elements of the workgroup's efforts resemble an antidegradation alternatives analysis through which design standards were identified to minimize impacts to water quality. Where appropriate, the MPCA may be able to utilize some of these elements into future alternatives analyses.

Also implicit in the review is the MPCA's evaluation of whether net increases in loading or other causes of degradation to high water quality resulting from the activities covered by a general permit accommodates important economic or social development. Because of the impracticality of determining impacts to the existing water quality of individual water bodies covered under general permits, the evaluation of importance must be made in a general sense. In the case of general permits, the MPCA will need to evaluate the benefits of issuing a general permit and the types of activities it covers despite not knowing which waters will be degraded and by how much. This is a reasonable approach given the numerous water bodies and activities covered under general permits.

Note that the MPCA has the ability to require individual permit coverage when it determines that coverage under a general permit is not appropriate.

> *If the agency finds that the operations, emissions, activities, discharges, or facilities of a permit applicant or a permittee covered by a general permit would be more appropriately controlled by an individual permit, the agency shall issue an individual permit to the applicant or the permittee. Upon issuance of the individual permit, a general permit previously applicable to the permittee no longer applies to that permittee. In considering whether it is appropriate to issue an individual permit, the agency shall consider:*
>
> *A. whether the operations, emissions, activities, discharges, or facilities of the permit applicant or permittee have characteristics creating the potential for significant environmental effects;*
> *B. whether the permittee has been in compliance with the terms of the general permit and applicable statutes and rules;*
> *C. whether the operations, emissions, activities, discharges, or facilities have been altered such that they no longer fit within the category covered by the general permit.* Minn. R. 7001.0210, subp. 6

3. Subpart 3. Preliminary antidegradation determination.

Subp. 3. **Preliminary antidegradation determination.** Based upon the review described in subpart 2, the commissioner shall prepare a written preliminary antidegradation determination as to whether the permit conditions will satisfy the antidegradation standards described in part 7050.0270. The preliminary antidegradation determination must be included with the commissioner's fact sheet according to part 7001.0100, subpart 3.

The preliminary determination is needed and reasonable because it provides those interested in the issuance of a general NPDES permit with adequate information to enable them to comment as to whether the antidegradation standards will be satisfied.

4. Subpart 4. Opportunity for comment.

   Subp. 4. **Opportunity for comment.** The commissioner shall:
   A. include the preliminary antidegradation determination with the public notice of intent to issue a general permit according to part 7001.0210, subpart 4;
   B. distribute the public notice according to part 7001.0100, subpart 5; and
   C. provide opportunity for comment on the preliminary antidegradation determination according to part 7001.0110.

   This provision is similar to proposed provisions for opportunities to comment on individual NPDES permits (subparts 5 of proposed Minn. R. 7050.0280 and 7050.0290). The only difference is that under this provision the preliminary determination is reasonably included with the public notice of intent to issue the permit according to general permit procedures in Minn. R. 7001.0210, subp. 4.

5. Subpart 5. Final antidegradation determination.

   Subp. 5. **Final antidegradation determination.** The commissioner shall consider comments received under subpart 4 before preparing a written final antidegradation determination. The final antidegradation determination must include a statement that issuing the general NPDES permit achieves or fails to achieve the antidegradation standards specified in part 7050.0270. The final antidegradation determination must be included with the commissioner's final determination according to part 7001.0140.

   This provision is similar to the final antidegradation determination proposed for individual NPDES permits for municipal stormwater activities (proposed Minn. R. 7050.0290, subpart 6) because both permit types are subject to the same antidegradation standards. The difference is that in this case the final determination is made regarding whether the issuance of the general permit itself will satisfy the antidegradation standards under proposed Minn. R. 7050.0270.

6. Subpart 6. Further antidegradation procedures not required.

   Subp. 6. **Further antidegradation procedures not required.** Except as provided in part 7050.0325, if the commissioner's final antidegradation determination states that issuing a general NPDES permit will achieve the antidegradation standards specified in part 7050.0270, further antidegradation procedures are not required when a person seeking coverage under the general NPDES permit certifies that the permit conditions can and will be met.

   Subpart 6 is needed to clarify that individual antidegradation procedures are not required when a person seeking coverage under a general NPDES permit meets the conditions of the permit. This is reasonable because the review will have already been conducted, the public will have had an opportunity to weigh in on the MPCA's preliminary determination and a final determination will have been made that the standards are satisfied when permit conditions are met. The only exception to this, as provided in proposed Minn. R. 7050.0325, is when an activity covered under a general NPDES permit is also regulated under a control document where assessments of impacts to existing water quality are reasonable. In such cases it is reasonable that an individual

evaluation of the proposed activity occur and the more protective standards (i.e., proposed Minn. R. 7050.0265) apply.

K. Procedures for section 401 certifications of general section 404 permits. (Proposed Minn. R. 7050.0305)

This part is needed to implement antidegradation requirements through CWA section 401 certifications of section 404 general permits. Section 404 of the CWA authorizes the ACE to issue general permits on a state, regional or nationwide basis for activities which are similar in nature, will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effect on the environment. Just as with section 404 individual permits, section 404 general permits must be based on section 404(b)(1) guidelines found in 40 CFR § 230 (Exhibit 84) and the public interest review (PIR) requirements found in 33 CFR § 320.4 (Exhibit 111).

1. Subpart 1. Antidegradation procedures required.

   Subpart 1. **Antidegradation procedures required.** The antidegradation procedures in this part apply to section 401 certifications of new, reissued, or modified general section 404 permits that the commissioner anticipates will result in net increases in loading or other causes of degradation to surface waters, unless the federal permitting authority is notified that the commissioner is waiving the agency's authority to certify the permit under part 7001.1460.

   This subpart is needed to describe the circumstances that trigger antidegradation procedures for section 401 certifications of section 404 general permits. The specific circumstances that trigger antidegradation procedures are the same as proposed procedures for other control documents. The need and reasonableness for the trigger is found in Section 5.G.1. The exception is for when section 401 certifications that are waived under Minn. R. 7001.1460. This is reasonable because the MPCA should not needlessly undergo a review process for a permit for which a section 401 certification is ultimately waived.

2. Subpart 2. Antidegradation review.

   Subp. 2. **Antidegradation review.** Upon public notice of a draft general section 404 permit, the commissioner shall review the determinations specified in Code of Federal Regulations, title 33, part 320, subpart 4, and Code of Federal Regulations, title 40, part 230, subpart 7. The purpose of the antidegradation review is to evaluate whether issuing the section 401 certification for the general section 404 permit will satisfy the antidegradation standards in part 7050.0270.

   The need and reasonableness of not requiring applicants for general authorizations to provide antidegradation assessments and for the MPCA to conduct reviews without those assessments was provided in Section 5.J.2.

   For general section 404 permits, 40 CFR § 230.7 (Exhibit 75) requires the ACE to provide a determination that activities covered under the permit meet certain requirements that are similar to antidegradation requirements. For example, conditions for section 404 general permit issuance include that the activities will only have a minimal impact on water quality and will not cause or contribute to violations of states' water quality

standards. The regulations require the ACE to make a determination that the discharges will not result in significant adverse effects on special aquatic sites, (e.g., ORVWs, Tier 3 antidegradation protection) or economic values. Federal regulations at 33 CFR § 320.4(a) (Exhibit 111) also require the ACE to conduct a PIR and make a determination that the issuance of a section 404 permit is not contrary to the public interest. This is very similar to the antidegradation demonstration that when high water quality is degraded, the lowering of that quality must be necessary to accommodate important economic or social development.

The ACE's determinations on section 404 general permits are prepared at the time of permit issuance rather than for each subsequent discharge allowed under the authority of that permit (40 CFR § 230.12(b) (Exhibit 115)[115]. Thus, the applicant needs merely to comply with the permit conditions and no further evaluation is required of individual projects covered under the permit (40 CFR § 230.5(b) (Exhibit 116)[116]. This approach aligns with the proposed approach for applying antidegradation requirements though general authorizations.

The ACE is required to provide public notice of section 404 general permits (33 CFR § 325.3(b) (Exhibit 117)[117]. It is at this time that the MPCA has the opportunity to review the draft permit to ensure the issuance of the section 404 permit will result in compliance with water quality standards. It is reasonable for the MPCA to use this time to include conditions in the section 401 certification that will ensure antidegradation requirements are satisfied. The MPCA's inclusion of permit conditions is supported by the ACE regulations, which state that:

> *District engineers will add special conditions to Department of the Army permits when such conditions are necessary to satisfy legal requirements or to otherwise satisfy the public interest requirement. Permit conditions will be directly related to the impacts of the proposal, appropriate to the scope and degree of those impacts, and reasonably enforceable.*
>
> *(1) Legal requirements which may be satisfied by means of Corps permit conditions include compliance with the 404(b)(1) guidelines, the EPA ocean dumping criteria, the Endangered Species Act, and requirements imposed by conditions on state section 401 water quality certifications.* 33 CFR § 325.4(a) (Exhibit 118)[118]

3. Subpart 3. Preliminary antidegradation determination.

Subp. 3. **Preliminary antidegradation determination.** Based upon the review described in subpart 2, the commissioner shall prepare a written preliminary antidegradation determination as to whether the antidegradation standards described in part 7050.0270 are satisfied or can be satisfied by issuing a section 401 certification with conditions. The preliminary antidegradation determination must be included with the commissioner's preliminary determination to issue or deny the section 401 certification according to part 7001.0100 and, if applicable, include the conditions necessary to satisfy antidegradation standards. If, in the commissioner's judgment, the antidegradation standards are not satisfied,

reasons why they are not satisfied must be included in the preliminary antidegradation determination.

This provision is similar to the preliminary antidegradation determinations required in procedures under proposed Minn. R. 7050.0280 and 7050.0285. The difference is that the preliminary determination made under this provision is that the antidegradation standards under proposed Minn. R. 7050.0270 (not the standards in proposed Minn. R. 7050.0265) are satisfied. The preliminary determination is needed to provide those interested in the issuance of a general section 404 permit with adequate information on which to comment.

4. Subpart 4. Opportunity for comment.

Subp. 4. **Opportunity for comment.** The commissioner shall prepare and distribute a public notice of the preliminary antidegradation determination with the preliminary determination to issue or deny the section 401 certification through the procedures described in part 7001.1440, except that part 7001.1440, subpart 2, does not apply.

This provision is the same as the opportunity for comment on preliminary determinations for section 401 certifications of individual federal licenses and permits. The need for and reasonableness is the same (Section 5.H.5).

5. Subpart 5. Final antidegradation determination.

Subp. 5. **Final antidegradation determination.** The commissioner shall consider information received under subpart 4 before preparing a written final antidegradation determination. The final antidegradation determination must include a statement of whether issuing the general section 404 permit achieves or fails to achieve the antidegradation standards specified in part 7050.0270. The final antidegradation determination must be included with the commissioner's final determination according to part 7001.1450.

The need and reasonableness of including a final antidegradation determination is provided in Section 5.G.6. This provision is similar to the final antidegradation determination for general NPDES permits, except that the determination is reasonably made through the MPCA's final determination to issue or not issue section 401 certifications (Minn. R. 7001.1450).

6. Subpart 6. Further antidegradation procedures not required.

Subp. 6. **Further antidegradation procedures not required.** Except as provided in part 7050.0325, if the commissioner's final antidegradation determination states that issuing a general section 404 permit will achieve the antidegradation standards specified in part 7050.0270, further antidegradation procedures are not required when a person seeking coverage under the general section 404 permit certifies that the permit conditions can and will be met.

Like the provision under proposed Minn. R. 7050.0295, subp. 6 for general NPDES permits, antidegradation procedures for activities covered under general section 404 permits will generally not be required when applicants for the general section 404

permits meet permit conditions. The exception to, the need for, and the reasonableness of this exception is discussed in Section 5.M.

L. Procedures for Section 401 Certifications of General Federal Licenses and Permits Other Than Section 404 Permits. (Proposed Minn. R. 7050.0315)

This part is needed to implement antidegradation requirements though CWA section 401 certifications of general federal licenses and permits other than general section 404 permits. While general section 404 permits requirements are similar to those of antidegradation protection, other general federal license and permit requirements may differ. It is therefore reasonable to include a separate set of procedures for general federal licenses and permits other than section 404 permits.

1. Subpart 1. Antidegradation procedures required.

   Subpart 1. **Antidegradation procedures required.** The antidegradation procedures in this part apply to section 401 certifications of new, reissued, or modified general federal licenses and permits that are not section 404 permits that the commissioner anticipates will result in net increases in loading or other causes of degradation to surface waters, unless the federal licensing or permitting authority is notified that the commissioner is waiving the agency's authority to certify the license or permit under part 7001.1460.

   This subpart is needed to describe the circumstances that trigger antidegradation procedures for section 401 certifications of federal licenses and permits other than for section 404 general permits. The specific circumstances that trigger antidegradation procedures are the same as proposed procedures for other control documents. The need and reasonableness for the trigger is found in Section 5.G.1.

2. Subpart 2. Antidegradation review.

   Subp. 2. **Antidegradation review.** Upon public notice of a draft general federal license or permit, the commissioner shall review the draft general federal license or permit to evaluate whether issuing the section 401 certification for the general federal license or permit will satisfy the antidegradation standards in part 7050.0270.

   The need and reasonableness of not requiring applicants seeking general authorization coverage to provide antidegradation assessments, and for the MPCA to conduct reviews without those assessments, is provided in Section 5.J.2. The antidegradation review under these procedures differs from those proposed for general section 404 permits, which rely in part on the ACE's determinations. Other federal agencies do not make equivalent determinations. Thus the MPCA must reasonably rely on review of the draft general federal license or permit itself in the evaluation of whether the issuance of the license or permit will satisfy antidegradation standards.

3. Subpart 3. Preliminary antidegradation determination.

   Subp. 3. **Preliminary antidegradation determination.** Based upon the review described in subpart 2, the commissioner shall prepare a written preliminary

antidegradation determination as to whether the antidegradation standards described in part 7050.0270 are satisfied or can be satisfied by issuing a section 401 certification with conditions. The preliminary antidegradation determination must be included with the commissioner's preliminary determination to issue or deny the section 401 certification according to part 7001.0100 and, if applicable, include the conditions necessary to satisfy antidegradation standards. If, in the commissioner's judgment, the antidegradation standards are not satisfied, reasons why they are not satisfied must be included in the preliminary antidegradation determination.

The need and reasonableness of the MPCA providing a preliminary antidegradation determination is provided in Section 5.G.4.

4. Subpart 4. Opportunity for comment.

Subp. 4. **Opportunity for comment.** The commissioner shall prepare and distribute a public notice of the preliminary antidegradation determination with the preliminary determination to issue or deny the section 401 certification through the procedures described in part 7001.1440, except that part 7001.1440, subpart 2, does not apply.

The need and reasonableness of the MPCA providing an opportunity for comment is provided in Section 5.H.5.

5. Subpart 5. Final antidegradation determination.

Subp. 5. **Final antidegradation determination.** The commissioner shall consider information received under subpart 4 before preparing a written final antidegradation determination. The final antidegradation determination must include a statement of whether issuing the general federal license or permit achieves or fails to achieve the antidegradation standards specified in part 7050.0270. The final antidegradation determination must be included with the commissioner's final determination according to part 7001.1450.

The need and reasonableness of including a final antidegradation determination is provided in Section 5.G.6.

6. Subpart 6. Further antidegradation procedures not required.

Subp. 6. **Further antidegradation procedures not required.** Except as provided in part 7050.0325, if the commissioner's final antidegradation determination states that issuing a general federal license or permit will achieve the antidegradation standards specified in part 7050.0270, further antidegradation procedures are not required when a person seeking coverage under the general federal license or permit certifies that the license or permit conditions can and will be met.

The need and reasonableness for not requiring antidegradation review on individual projects covered general authorizations is addressed in Section 5.J.6.

M. Procedures for Multiple Control Documents. (Proposed Minn. R. 7050.0325)

Items A and B apply to proposed activities requiring more than one control document:

A. when the proposed activity requires compliance with standards in both parts 7050.0265 and 7050.0270, the commissioner shall require procedures for which standards in part 7050.0265 apply; and

B. when the proposed activity requires compliance with standards in part 7050.0265 and is subject to more than one procedure, only the procedure that is most protective of existing water quality, as specified by the commissioner, is required.

This provision is needed to address how antidegradation requirements will be satisfied when a single activity is regulated under more than one control document.

Item A provides procedures for situations where the activity requires more than one control document: one for which the antidegradation standards in proposed Minn. R. 7050.0270 apply (i.e., existing water quality impacts not reasonably quantified), and one for which standards in proposed Minn. R. 7050.0265 apply (i.e., existing water quality impacts are reasonably quantified). In these situations the MPCA will require that the applicant follow the procedures applicable to the latter set of standards. For example, a given activity may be covered under a general NPDES stormwater permit, but may also require a section 401 certification for an individual section 404 permit. In this case the applicant would not be exempt from antidegradation procedures, but must complete those required for the section 401 certification. This approach is reasonable and more protective of the resource because the impacts to existing water quality can reasonably be quantified.

Item B provides procedures for situations where an activity requires more than one control document, both of which are subject to standards in proposed Minn. R. 7050.0265 (i.e., existing water quality impacts are reasonably quantified). In these situations only one procedure will be required. This reduces redundancy and effort in the applicant's preparation of antidegradation assessments and the MPCA's review of those assessments. It is reasonable that the MPCA make the decision of which control document under which the procedures will occur because it is the MPCA that is accountable for antidegradation water quality protection. An example of this situation is where a project requires both an individual Coast Guard permit and an individual section 404 permit.

N. Designated Outstanding Resource Value Waters (Proposed Minn. R. 7050.0335)

This part is needed to identify waters of the state which receive the highest levels of antidegradation protection.

1. Subpart 1. Restricted outstanding resource value waters.

Subpart 1. **Restricted outstanding resource value waters.** For the purposes of parts 7050.0250 to 7050.0335, the following surface waters are restricted outstanding resource value waters:

A. Lake Superior, except those portions identified in subpart 3, item B, as a prohibited outstanding resource value waters;

B. those portions of the Mississippi River from Lake Itasca to the southerly boundary of Morrison County that are included in the Mississippi Headwaters Board comprehensive plan dated February 12, 1981;

C. lake trout lakes, both existing and potential, as determined by the commissioner in conjunction with the Department of Natural Resources, outside the boundaries of the Boundary Waters Canoe Area Wilderness and Voyageurs National Park and identified in parts 7050.0460 to 7050.0470;

D. the following state and federal designated scenic or recreational river segments:
   (1) Saint Croix River, entire length;
   (2) Cannon River from northern city limits of Faribault to its confluence with the Mississippi River;
   (3) North Fork of the Crow River from Lake Koronis outlet to the Meeker-Wright county line;
   (4) Kettle River from north Pine County line to the site of the former dam at Sandstone;
   (5) Minnesota River from Lac qui Parle dam to Redwood County State-Aid Highway 11;
   (6) Mississippi River from County State-Aid Highway 7 bridge in Saint Cloud to northwestern city limits of Anoka;
   (7) Rum River from State Highway 27 bridge in Onamia to Madison and Rice Streets in Anoka; and

E. the following surface waters associated with calcareous fens. The number following the name of the fen is the occurrence number assigned by the Department of Natural Resources that uniquely identifies the record of information for the particular fen:
   (1) Becker County: Spring Creek WMA NHR fen, 34 (T.142, R.42, S.13);
   (2) Carver County: Seminary fen, 75 (T.116, R.23, S.35);
   (3) Clay County:
      (a) Barnesville Moraine fen, 44 (T.137, R.44, S.18);
      (b) Barnesville WMA fen, 10 (T.137, R.45, S.1);
      (c) Barnesville WMA fen, 43 (T.137, R.44, S.18);
      (d) Felton Prairie fen, 28 (T.142, R.46, S.36);
      (e) Felton Prairie fen, 36 (T.141, R.46, S.13);
      (f) Felton Prairie fen, 48 (T.142, R.45, S.31);
      (g) Felton Prairie fen, 53 (T.141, R.46, S.24);
      (h) Haugtvedt WPA North Unit fen, 54 (T.137, R.44, S.28, 29); and
      (i) Spring Prairie fen, 37 (T.140, R.46, S.11);
   (4) Clearwater County: Clearbrook fen, 61 (T.149, R.37, S.17);

(5) Dakota County:
    (a) Black Dog Preserve fen, 63 (T.27, R.24, S.34);
    (b) Fort Snelling State Park fen, 25 (T.27, R.23, S.4); and
    (c) Nicols Meadow fen, 24 (T.27, R.23, S.18);
(6) Goodhue County:
    (a) Holden 1 West fen, 3 (T.110, R.18, S.1);
    (b) Perched Valley Wetlands fen, 2 (T.112, R.13, S.8); and
    (c) Red Wing fen, 72 (T.113, R.15, S.21);
(7) Houston County: Houston fen, 62 (T.104, R.6, S.26);
(8) Jackson County:
    (a) Heron Lake fen, 45 (T.103, R.36, S.29); and
    (b) Thompson Prairie fen, 20 (T.103, R.35, S.7);
(9) Le Sueur County:
    (a) Ottawa Bluff fen, 56 (T.110, R.26, S.3);
    (b) Ottawa WMA fen, 7 (T.110, R.26, S.11); and
    (c) Ottawa WMA fen, 60 (T.110, R.26, S.14);
(10) Lincoln County: Hole-in-the-Mountain Prairie fen, 6; Pipestone (T.108, R.46, S.1; T.109, R.45, S.31);
(11) Mahnomen County: Waubun WMA fen, 11 (T.143, R.42, S.25);
(12) Marshall County:
    (a) Tamarac River fen, 71 (T.157, R.46, S.2);
    (b) Viking fen, 68 (T.155, R.45, S.18);
    (c) Viking fen, 70 (T.155, R.45, S.20); and
    (d) Viking Strip fen, 69 (T.154, R.45, S.4);
(13) Martin County: Perch Creek WMA fen, 33 (T.104, R.30, S.7);
(14) Murray County: Lost Timber Prairie fen, 13 (T.105, R.43, S.2);
(15) Nicollet County:
    (a) Fort Ridgely fen, 21 (T.111, R.32, S.6); and
    (b) Le Sueur fen, 32 (T.111, R.26, S.16);
(16) Nobles County: Westside fen, 59 (T.102, R.43, S.11);
(17) Norman County:
    (a) Agassiz-Olson WMA fen, 17 (T.146, R.45, S.22);
    (b) Faith Prairie fen, 15 (T.144, R.43, S.26);
    (c) Faith Prairie fen, 16 (T.144, R.43, S.35);
    (d) Faith Prairie fen, 27 (T.144, R.43, S.25); and
    (e) Green Meadow fen, 14 (T.145, R.45, S.35, 36);
(18) Olmsted County:
    (a) High Forest fen, 12 (T.105, R.14, S.14, 15); and
    (b) Nelson WMA fen, 5 (T.105, R.15, S.16);
(19) Pennington County:
    (a) Sanders East fen, 65 (T.153, R.44, S.7);
    (b) Sanders East fen, 74 (T.153, R.44, S.7); and
    (c) Sanders fen, 64 (T.153, R.44, S.18, 19);
(20) Pipestone County:

(a) Burke WMA fen, 57 (T.106, R.44, S.28); and
(b) Hole-in-the-Mountain Prairie fen, 6 (see Lincoln County, subitem (10);
(21) Polk County:
(a) Chicog Prairie fen, 39 (T.148, R.45, S.28);
(b) Chicog Prairie fen, 40 (T.148, R.45, S.33);
(c) Chicog Prairie fen, 41 (T.148, R.45, S.20, 29);
(d) Chicog Prairie fen, 42 (T.148, R.45, S.33);
(e) Kittleson Creek Mire fen, 55 (T.147, R.44, S.6, 7);
(f) Tympanuchus Prairie fen, 26 (T.149, R.45, S.17); and
(g) Tympanuchus Prairie fen, 38 (T.149, R.45, S.16);
(22) Pope County:
(a) Blue Mounds fen, 1 (T.124, R.39, S.14, 15);
(b) Lake Johanna fen, 4 (T.123, R.36, S.29); and
(c) Ordway Prairie fen, 35 (T.123, R.36, S.30);
(23) Redwood County:
(a) Swedes Forest fen, 8 (T.114, R.37, S.19, 20); and
(b) Swedes Forest fen, 9 (T.114, R.37, S.22, 27);
(24) Rice County:
(a) Cannon River Wilderness Area fen, 18 (T.111, R.20, S.34); and
(b) Cannon River Wilderness Area fen, 73 (T.111, R.20, S.22);
(25) Scott County:
(a) Savage fen, 22 (T.115, R.21, S.17);
(b) Savage fen, 66 (T.115, R.21, S.16); and
(c) Savage fen, 67 (T.115, R.21, S.17);
(26) Wilkin County:
(a) Anna Gronseth Prairie fen, 47 (T.134, R.45, S.15);
(b) Anna Gronseth Prairie fen, 49 (T.134, R.45, S.10);
(c) Anna Gronseth Prairie fen, 52 (T.134, R.45, S.4);
(d) Rothsay Prairie fen, 46 (T.136, R.45, S.33);
(e) Rothsay Prairie fen, 50 (T.135, R.45, S.15, 16); and
(f) Rothsay Prairie fen, 51 (T.135, R.45, S.9);
(27) Winona County: Wiscoy fen, 58 (T.105, R.7, S.15); and
(28) Yellow Medicine County:
(a) Sioux Nation WMA NHR fen, 29 (T.114, R.46, S.17); and
(b) Yellow Medicine fen, 30 (T.115, R.46, S.18).

The list of waters in subpart 1 is identical to those listed as restricted ORVWs in the current rule found at Minn. R. 7050.0180, subps. 6, 6a and 6b. The proposed provision improves upon the current provision by consolidating the list of designated water bodies into one subpart. The MPCA does not propose to make changes to the list of restricted ORVWs through this rulemaking.

2. Subpart 2. Unlisted restricted outstanding resource value waters.

Subp. 2. **Unlisted restricted outstanding resource value waters.** Until such time that surface waters identified as state or federally designated scenic or

recreational river segments and state designated calcareous fens are designated in rule as restricted outstanding resource value waters, the commissioner shall restrict any proposed activity in order to preserve the existing water quality necessary to maintain and protect their exceptional characteristics.

As with the current rule governing nondegradation of ORVWs, this subpart provides for the protection of unlisted ORVWs. The majority of ORVWs are specifically designated through the administrative rulemaking process after being designated by the MDNR as state wild, scenic or recreation river segments, scientific and natural areas, or calcareous fens; or by the federal government as federal wild, scenic or recreation river segments. The purpose of including provisions for unlisted ORVWs is to provide antidegradation protection in the time period between when a water body is designated by the MDNR or federal government and when the water body is adopted into the proposed rules.

The current rule's provision for unlisted ORVWs (Minn. R. 7050.0180, subp. 7) does not identify the types of waters that are eligible for unlisted ORVW protection, but simply states that they are "*not specified.*" This could be construed as being arbitrary. The proposed provision is needed to clearly identify the kinds of unlisted waters which will receive ORVW protection.

Restricted ORVWs listed in proposed Minn. R. 7050.0335, subp. 1, include waters specifically protected by the federal government or the MDNR. Scenic or recreational river segments protected under the federal Wild and Scenic Rivers Act are designated by Congress or, if certain requirements are met, the Secretary of the Interior. Minnesota's scenic or recreational river segments are designated by a MDNR commissioner's order (Minn. Stat. § 103F.325, subd. 4). Regarding the State's scenic and recreational river segments, the Minnesota legislature may at any time designate additional rivers, exclude rivers previously included, or change the classification of rivers classified by the commissioner (Minn. Stat. § 103F.325, subd. 5). Calcareous fens are designated by the MDNR through written order published in the *State Register* (Minn. Stat. § 103G.223).

This provision reasonably provides the same protection afforded to restricted ORVWs listed in Minn. 7050.0335, subp. 1, to scenic and recreational river segments and calcareous fens in the time period between when the water bodies are designated by the MDNR or federal government and when they are adopted into antidegradation rules.

3. Subpart 3. Prohibited outstanding resource value waters.

Subp. 3. **Prohibited outstanding resource value waters.** For the purposes of parts 7050.0250 to 7050.0335, the following surface waters are prohibited outstanding resource value waters:

A. waters within the Boundary Waters Canoe Area Wilderness;
B. those portions of Lake Superior north of latitude 47 degrees, 57 minutes, 13 seconds, east of Hat Point, south of the Minnesota-Ontario boundary, and west of the Minnesota-Michigan boundary;
C. waters within Voyageurs National Park;
D. the following scientific and natural areas:
   (1) Boot Lake, Anoka County;
   (2) Kettle River in Sections 15, 22, 23, T.41, R.20, Pine County;

(3) Pennington Bog, Beltrami County;
(4) Purvis Lake-Ober Foundation, Saint Louis County;
(5) waters within the borders of Itasca Wilderness Sanctuary, Clearwater County;
(6) Iron Springs Bog, Clearwater County;
(7) Wolsfeld Woods, Hennepin County;
(8) Green Water Lake, Becker County;
(9) Black Dog Preserve, Dakota County;
(10) Prairie Bush Clover, Jackson County;
(11) Black Lake Bog, Pine County;
(12) Pembina Trail Preserve, Polk County;
(13) Falls Creek, Washington County; and

E. the following state and federal designated wild river segments:
(1) Kettle River from the site of the former dam at Sandstone to its confluence with the Saint Croix River; and
(2) Rum River from Ogechie Lake spillway to the northernmost confluence with Lake Onamia.

The list of waters in subpart 3 is identical to those listed as prohibited ORVWs in the current rule found at Minn. R. 7050.0180, subps. 3, 4 and 5. The proposed provision improves upon the current provision by consolidating the list of designated water bodies. The MPCA does not propose to make changes to the list of restricted ORVWs through this rulemaking.

4. Subpart 4. Unlisted prohibited outstanding resource value waters.

Subp. 4. **Unlisted prohibited outstanding resource value waters.** Until such time that surface waters identified as state or federally designated wild river segments and surface waters necessary to maintain state designated scientific and natural areas are designated in rule as prohibited outstanding resource value waters, the commissioner shall prohibit any proposed activity that results in a net increase in loading or other causes of degradation.

The need to protect unlisted ORVWs in general is described in Section 5.N.2.

Prohibited ORVWs listed in proposed Minn. R. 7050.0335, subp. 3, include waters specifically protected by the federal government or the MDNR. This list includes:

- wild river segments under the federal Wild and Scenic Rivers Act (16 U.S.C. §§ 1271-1287) (Exhibit 72);
- state wild river segments under Minn. Stat. ch. 103F; and
- water bodies necessary to maintain state designated scientific and natural areas under Minn. Stat. § 84.033.

This provision reasonably provides the same protection afforded to prohibited ORVWs listed in proposed Minn. R. 7050.0335, subp. 3, to wild river segments and SNAs in the time period between when the water bodies are designated by the MDNR or federal government and when that listing is adopted into antidegradation rules.

5. Subp. 5. **Public hearing.** The commissioner shall provide an opportunity for a hearing before:

   A. identifying and establishing additional outstanding resource value waters; or

   B. changing the effective date of an outstanding resource value water according to part 7050.0255, subpart 13, item B, subitems (1) and (2).

   Both the current rule governing nondegradation of ORVWs and the proposed rules include provisions for public participation regarding the treatment of ORVWs. The current rule reads:

   > *The agency shall provide an opportunity for a hearing before identifying and establishing additional outstanding resource value waters, before determining the existence or lack of prudent and feasible alternatives under subpart 6, and before prohibiting or restricting new or expanded discharges to outstanding resource value waters under subparts 3, 6, 6a, 6b, and 7.* Minn. R. 7050.0180, subp. 8

   Minn. R. 7050.0180, subp. 8 provides an opportunity for a public hearing "*before determining the existence or lack of prudent and feasible alternatives*" for activities impacting restricted ORVWs and "*before prohibiting or restricting new or expanded discharges to outstanding resource value waters.*" These provisions are not included in proposed Minn. R. 7050.0335, subp. 5 because the opportunity for public comment on the MPCA's preliminary determinations regarding impacts to all waters, including ORVWs, is already provided in procedures specified for each type of control document.

   Item A retains the requirement for the MPCA to provide an opportunity for a hearing when the MPCA intends to add a water body to the ORVW list. This is reasonable because ORVWs are designated through the rulemaking process and the MPCA is required to provide an opportunity for a hearing when "*…25 or more persons submit to the agency a written request for a public hearing of the proposed rule.*"(Minn. Stat. § 14.25)

   Item B requires the MPCA to provide an opportunity for a hearing when the effective date of an ORVW is changed. This requirement is reasonable because it provides an opportunity for entities interested in the treatment of the state's most valuable surface water resources to weigh in on the MPCA's decisions. The justification for changing ORVW effective dates is provided in Section 5.B.13.

O. Permitting requirements (Proposed Amendments to Minn. R. 7001)

The proposed rules (subparts 2 of proposed Minn. R. 7050.0280 and Minn. R. 7050.0290) require applicants for individual NPDES permits to provide the MPCA with an antidegradation assessment as part of the written application. This requirement is reasonable because it allows the MPCA enough time to review the assessment and make a preliminary determination within the 150-day period set as a goal for issuing or denying permits (Minn. Stat. § 116.03, subd. 2(b)).

Amendments to rules governing NPDES permits found in Minn. R ch. 7001 are needed to ensure consistency with the proposed rules. The proposed amendments are contained in

Minn. R. 7001.0050 (Written application), Item I, which will require the application to include:

> *I. other information relevant to the application as required by parts 7001.0550 to 7001.0640, 7001.1050, 7001.1290, 7001.3175 to 7001.3475, 7001.4200, ~~or~~ 7041.0700~~.~~, 7050.0280, subp. 2 or 7050.0290, subp. 2.* Minn. R. 7001.0050, item I

6. Proposed housekeeping changes to other Minnesota Rules

Housekeeping changes are needed to Minnesota Rules referencing the nondegradation rules (Minn. R. 7050.0180 and Minn. R. 7050.0185) which will be repealed through this rulemaking.

A. Reference to the definition of "toxic pollutant" found in Minn. R. 7050.0218

Minn. R. 7050.0218, subp. 3(DD) references the term "toxic pollutant" found in Minn. R. 7050.0185, subp. 2(F). Because Minn. R. 7050.0185 will be repealed and the proposed rules do not define "toxic pollutant", the term needs to be defined in Minn. R. 7050.0218, subp. 3(DD). The definition of this term in current nondegradation rules is as follows:

> *"Toxic pollutant" means a pollutant listed as toxic under section 307(a)(1) of the Clean Water Act, United States Code, title 33, section 1317(a)(1), or as defined by Minnesota Statutes, section 115.01, subdivision 20. Minn. R. 7050.0185, subp. 2(F)*

The proposed change is as follows:

> *"Toxic pollutant" ~~has the meaning given it in part 7050.0185, subpart 2, item F.~~ means a pollutant listed as toxic under section 307(a)(1) of the Clean Water Act, United States Code, title 33, section 1317(a)(1), or as defined by Minnesota Statutes, section 115.01 subdivision 20. Proposed change to Minn. R. 7050.0218, subp. 3(DD)*

B. Proposed changes to Minn. R. 7052.0300

Minn. R. 7052.0300 establishes nondegradation standards for surface waters of the state within the Lake Superior Basin. Subparts 1 and 2 of this rule contain numerous references to both Minn. R. 7050.0180 and Minn. R. 7050.0185. Because the current nondegradation rules will be repealed the following changes are needed:

> ***7052.0300 NONDEGRADATION STANDARDS.***
> *Subpart 1.* ***Applicability.*** *This part and parts ~~7050.0180 and 7050.0185~~ 7050.0250 to 7050.0335 establish the nondegradation standards and implementation procedures for surface waters of the state in the Lake Superior Basin. For the purposes of this part and parts 7052.0310 to 7052.0330, lowering of water quality means a new or expanded point source discharge of a BSIC to an outstanding international resource water, or a new or expanded point or nonpoint source discharge, for which there*

is a control document, of a BCC [bioaccumulative chemical of concern] *to a high quality water. The nondegradation standards established in this part and parts ~~7050.0180 and 7050.0185~~ 7050.0250 to 7050.0335 for surface waters of the state in the Lake Superior Basin apply as follows:*

A. Parts 7052.0300 to 7052.0330 apply to the following discharges:

(1) new and expanded point source discharges of BSICs to waters designated as outstanding international resource waters (OIRWs) under subpart 3; and

(2) new and expanded point and nonpoint source discharges of BCCs to waters designated as high quality waters under subpart 4.

B. ~~Part 7050.0180 applies~~ Parts 7050.0250 to 7050.0335 apply to new or expanded discharges of any pollutant to surface waters. ~~of the state designated as ORVWs as described in parts 7050.0460 and 7050.0470. Part 7050.0180, subpart 9, applies to new and expanded discharges upstream of an ORVW.~~

(1) For discharges of BCCs directly to ORVWs or upstream of ORVWs in the Lake Superior Basin, the actions or activities that may trigger a nondegradation demonstration are listed in part 7052.0310, subpart 4, and actions or activities that are exempt from nondegradation requirements are listed in part 7052.0310, subpart 5.

~~C. Part 7050.0185 applies to the discharge of non-BCCs to all surface waters of the state in the Lake Superior Basin not designated as ORVWs, and to the discharge of BCCs to waters not designated as ORVWs or high quality waters. Part 7050.0185~~

(2) Parts 7050.0250 to 7050.0335 also ~~applies~~ apply to the discharge of pollutants to Class 7 waters, except that ~~the following requirements also apply in the indicated circumstances:~~

~~(1) any new or expanded discharge to a Class 7 water upstream of an ORVW must meet the requirements of part 7050.0180, subpart 9; and~~

~~(2)~~ any new or expanded discharge to a Class 7 water upstream of an OIRW or a high quality water must meet the requirements of parts 7052.0310 to 7052.0330 as necessary to ensure compliance with the standards established in subparts 3 and 4.

Subp. 2. ***Maintenance of existing water quality.*** *Existing water uses under ~~part 7050.0185~~ parts 7050.0265, subpart 2 and 7050.0270, subpart 2 and the level of water quality necessary to protect existing uses must be maintained and protected. Where designated uses of the waterbody are impaired, there must be no lowering of the water quality with respect to the GLI pollutants causing the impairment.*
Proposed changes to Minn. R. 7052.0300, subps. 1 and 2.

Minn. R. 7052.0300, subp. 1, references both the current nondegradation rules (Minn. R. 7050.0180 and 7050.0185). Replacing "*7050.0180 and 7050.0185*" with "*7050.0250 to 7050.0335*" is needed eliminate the reference to the current rules and to reference the proposed rules.

While the current rules contain two parts governing nondegradation for ORVWs (Minn. R. 7050.0180) and all waters (Minn. R. 7050.0185), the proposed rules contain 14 parts that govern all waters, including ORVWs. Minn. R. 7052.0300, subp. 1(B) and (C) reference the

current ORVW rule and all waters rules, respectively. Therefore removing reference to individual rule parts and replacing it with a reference to the entirety of the proposed rules (Minn. R. 7050.0250 to 7050.0335) is needed. Note that subpart 1(C)(1) is not needed and therefore eliminated because Minn. R. 7050.0250 to 7050.0335 provide for the protection of ORVWs whether the discharge is to an upstream Class 7 water or not.

Minn. R. 7052.0300, subp 2, makes reference to the maintenance and protection of existing uses under Minn. R. 7050.0185. The proposed rules contain two sets of antidegradation standards. One set (proposed Minn. R. 7050.0265) apply to activities for which changes in existing water quality can reasonable be quantified and the other (proposed Minn. R. 7050.0270) for activities where these assessments are not reasonable. Each set of standards contains requirements for the maintenance and protection of existing uses found in subparts 2 of proposed Minn. R. 7050.0265 and 7050.0270. Therefore it is necessary to replace reference to "*part 7050.0185*" with reference to "*parts 7050.0265, subp. 2 and 7050.0270, subp. 2.*"

C. Proposed renumbering

There are 13 rules which reference the current nondegradation rules. Changes to these rules are needed as a result of repealing the current rules and adopting new ones. Table 1 and associated notes describe the needed changes for each case.

Table 1: Renumbering changes to Minnesota Rules which reference current nondegradation rules. In each rule referred to in Column A, the reference in Column B will be deleted and the reference in Column C will be inserted:

Change #	Column A	Column B	Column C
1	Minn. R. 4410.0200	7050.0180	7050.0335
2	Minn. R. 6115.0211	7050.0180	7050.0335
3	Minn. R. 7002.0253	7050.0180, 7050.0185	7050.0250 to 7050.0335
4	Minn. R. 7037.1000	7050.0180, subpart 2, Item A	7050.0255, subpart 30
5	Minn. R. 7050.0170	7050.0180 and 7050.0185	7050.0250 to 7050.0335
6	Minn. R. 7050.0222	7050.0180 and 7050.0185	7050.0250 to 7050.0335
7	Minn. R. 7050.0460	7050.0180, subpart 3 or 6	7050.0265, subpart 6; 7050.0265, subpart 7; 7050.0270, subpart 5; or 7050.0270, subpart 6
8	Minn. R. 7050.0460	7050.0180, subpart 3	7050.0265, subpart 7 or 7050.0270, subpart 6
9	Minn. R. 7050.0460	7050.0180, subpart 6	7050.0265, subpart 6 or 7050.0270, subpart 5
10	Minn. R. 7052.0260	7050.0180, 7050.0185	7050.0250 to 7050.0335
11	Minn. R. 7077.0105	7050.0180, subpart 2, Item A	7050.0255, subpart 30
12	Minn. R. 7090.1010	7050.0180, subpart 3 and 6	7050.0335
13	Minn. R. 8420.0515	7050.0180	7050.0335

Table 1 Notes:

Change #1. Minn. R. ch. 4410 are Environmental Review rules administered by the Environmental Quality Board. Minn. R. 4410.0200, subp. 79a.(E), makes reference to "*…outstanding resource value waters designated pursuant to part 7050.0180…*" Replacing "*7050.0180*" with "*7050.0335*" provides reference to where ORVWs are actually identified in the proposed rules.

Change #2. Minn. R. ch. are Public Water Resources rules administered by the MDNR. Minn. R. 6115.0211, subp. 6B.(D), makes reference to "*…an outstanding resource value water as defined in part 7050.0180…"* Replacing "*7050.0180*" with "*7050.0335*" provides reference to where ORVWs are actually identified in the proposed rules.

Change #3. Minn. R. ch. 7002 are Permit Fee rules administered by the MPCA. Minn. R. 7002.0253, subp. 2(C), makes reference to "*…a nondegradation review under parts 7050.0180, 7050.0185…*". The current rules separate the protection of ORVWs and all waters into two rules. The proposed rules address all waters including ORVWs. It is therefore appropriate to change the reference to "*7050.0250 to 7050.0335.*"

Change #4. Minn. R. ch. 7037 are Petroleum Contaminated Soil Management rules administered by the MPCA. Minn. R. 7037.1000, subp. 2(B), makes reference to "*…any outstanding resource value water as defined in part 7050.0180, subpart 2, Item A…*" which is the current rules' definition of ORVWs. Replacing "*7050.0180, subpart 2, Item A*" with "*7050.0255, subp. 30*" provides the correct reference to the definition of ORVWs in the proposed rules.

Change #5. Minn. R. ch. 7050 are Waters of the State rules which provide water quality standards and classifications of water bodies, and are administered by the MPCA. Minn. R. 7050.0170 makes reference to the "*…requirements under parts 7050.0180 and 7050.0185…*" The current rules separate the protection of ORVWs and all waters into two rules. The proposed rules address all waters including ORVWs. It is therefore appropriate to change the reference to "*7050.0250 to 7050.0335*".

Change #6. Minn. R. ch. 7050 are Waters of the State rules which provide water quality standards and classifications of water bodies, and are administered by the MPCA. Minn. R. 7050.0222 makes reference to "*…the nondegradation requirements in parts 7050.0180 and 7050.0185…*" in subparts 2a.(B)(1), 3a.(C)(1) and 4a.(C)(1). The current rules separate the protection of ORVWs and all waters into two rules. The proposed rules address all waters including ORVWs. It is therefore appropriate to change the reference to "*7050.0250 to 7050.0335*".

Change #7. Minn. R. ch. 7050 are Waters of the State rules which provide water quality standards and classifications of water bodies, and are administered by the MPCA. Minn. R. 7050.0460, subp. 3, makes reference to "*…the applicable discharge restrictions in part 7050.0180, subpart 3 or 6…*". Subparts 3 and 4 of Minn. R. 7050.0180 describe requirements for the protection of prohibited and restricted ORVWs. The proposed rules contain two sets of antidegradation standards. One set (proposed Minn. R. 7050.0265) apply to activities for which changes in existing water quality can reasonable be quantified and the other (proposed Minn. R. 7050.0270) for activities where these assessments are not reasonable. Each set of standards contains requirements for the protection of both restricted and prohibited ORVWs. The proposed standards for the protection of restricted ORVWs are found at Minn. R. 7050.0265, subp. 6 and Minn. R. 7050.0270, subp. 5, while the proposed standards for prohibited ORVW protection are located at Minn. R. 7050.0265, subp. 7 and Minn. R. 7050.0270, subp. 6. Replacing "*7050.0180, subpart 3 or 6*" with "*7050.0265, subpart 6; 7050.0265, subpart 7; 7050.0270, subpart 5; or 7050.0270, subpart 6*" is needed to ensure the correct references are used for ORVW protection.

Change #8. Minn. R. ch. 7050 are Waters of the State rules which provide water quality standards and classifications of water bodies, and are administered by the MPCA. Minn. R. 7050.0460, subp. 3, makes reference to "*…the prohibited discharges provision in part 7050.0180, subpart 3…*".Replacing "*7050.0180, subpart 3*" with "*7050.0265, subpart 7 or 7050.0270, subpart 6*" ensures the correct reference is used for the protection of prohibited ORVWs.

Change #9. Minn. R. ch. 7050 are Waters of the State rules which provide water quality standards and classifications of water bodies, and are administered by the MPCA. Minn. R. 7050.0460, subp. 6, makes reference to "*…the restricted discharges provision in part 7050.0180, subpart 6…*". Replacing "*7050.0180, subpart 6*" with "*7050.0265, subpart 6 or 7050.0270, subpart 5*" ensures the correct reference is used for the protection of restricted ORVWs.

Change #10. Minn. R. ch. 7052 are Lake Superior Basin Water Standards administered by the MPCA. Minn. R. 7052.0260, subp. 6, makes reference to "*…nondegradation standards and implementation procedures in parts 7050.0180, 7050.0185…*" The current rules separate the protection of ORVWs and all waters into two rules. The proposed rules address all waters including ORVWs. It is therefore appropriate to change the reference to "*7050.0250 to 7050.0335*".

Change #11. Minn. R. ch. 7077 are Wastewater and Stormwater Treatment Assistance rules administered by the MPCA. Minn. R. 7077.0105, subp. 28, makes reference to the definition of ORVW as "*…those waters defined in part 7050.0180, subpart 2, Item A…"* Replacing "*7050.0180, subpart 2, Item A*" with "*7050.0255, subp. 30*" provides the correct reference to the definition of ORVWs in the proposed rules.

Change #12. Minn. R. ch. 7090 are Stormwater Regulation Program rules administered by the MPCA. Minn. R. 7090.1010, subp. 2(B)(8), makes reference to ORVWs "*…as identified in part 7050.0180, subparts 3 and 6…*". Subparts 3 and 4 of Minn. R. 7050.0180 describe **requirements** for the protection of prohibited and restricted ORVWs, not **where** ORVWs are identified in rule. Replacing "*7050.0180, subparts 3 and 6*" with "*7050.0335*" is needed to provide the correct reference to the location in the proposed rules where ORVWs are actually identified.

Change #13. Minn. R. ch. 8420 are Wetland Conservation rules administered by the MBWSR. Minn. R. 8420.0515, subp. 7, makes reference to "*…outstanding resource value waters listed in part 7050.0180…*" Replacing "*7050.0180*" with "*7050.0335*" is needed to provide the correct reference to where ORVWs are listed in the proposed rules.

7. Rulemaking requirements

A. Background

The process for adoption of administrative rules in Minnesota is regulated under the Administrative Procedures Act (Minn. Stat. ch. 14) and also Minn. R. ch. 1400. These rulemaking requirements establish the rulemaking process and obligations of state agencies conducting rulemaking and ensure that adequate notification is provided to all interested or affected persons and entities. These include the general public and affected stakeholders, but also various state agencies and departments, including the legislature and the Office of the Governor. An additional requirement of Minn. Stat. §14.131 is that a SONAR "*must also describe the agency's efforts to provide additional notification under section 14.14, subdivision 1a , to persons or classes of persons who may be affected by the proposed rule or must explain why these efforts were not made*". This Section of the SONAR will address:

- how the MPCA has provided required notifications;
- how the MPCA has addressed the requirement to provide additional notice.

B. Required Notice

The MPCA must provide notification to the following as appropriate:

- Office of the Governor
- Parties who specifically requested notification (Minn. Stat. § 14.14, subd. 1a)
- Office of Management and Budget (Minn. Stat. § 14.131)
- Legislators (Minn. Stat. §§ 14.116, 14.127 and 14.131)
- Department of Agriculture (Minn. Stat. § 14.111)
- Governing bodies of municipalities bordering affected waters (Minn. Stat. § 115.44, subd. 7)

1. Office of the Governor

Under Minn. Stat. § 14.05, subd. 6, the Governor may veto adopted administrative rules prior to their effective date. In order to minimize the possibility of a veto at the end of the rulemaking process, the Governor's office has developed a protocol to keep the Governor apprised of rulemaking activities throughout the rulemaking process. At the start of the rulemaking process the MPCA notified the Governor's office of the MPCA's general rulemaking intentions. The second Governor's notification coincides with the completion of the SONAR and will be sent prior to publication of the proposed rules in the *State Register*.

2. Parties who have registered with the MPCA for purposes of receiving notice of rule proceedings

Minnesota Statute section 14.14, subdivision 1a requires that agencies maintain such lists and notify those parties at the time a rule is proposed for public comment or hearing. The MPCA maintains such a list and for this rulemaking has also provided notification to these parties at numerous points in the early phases of rule development.

The MPCA published three RFCs in the *State Register* to obtain public input into the development of the proposed rules and to develop a list of interested parties. The notices were published in the January 29, 2007, May 29, 2007 and February 25, 2013 *State Register*. In the first request (Exhibit 119)[119] the MPCA identified its intention to review and amend the nondegradation rules and sought public comment on that subject. The second RFC (Exhibit 120)[120], re-stated that intent and extended the time period for submittal of comments for an additional four months. The third RFC (Exhibit 121)[121] provided notice of MPCA's intent to propose supporting changes to Minn. R. ch. 7001 that are necessary to reflect the proposed rules. The comments received in response to those RFCs included a petition for rulemaking (Exhibit 1) and comments from the Builders Association of the Twin Cities (Exhibit 122)[122], MNDNR (Exhibit 123)[123], Rochester, Minnesota Public Works Department (Exhibit 124)[124] and Minnesota Cities Stormwater Coalition (Exhibits 125[125] and 126[126]).

When each RFC was published the MPCA provided notification to the parties that were identified as requesting notice of rulemaking activities and also to a number of additional parties that had indicated a general interest in water quality-related rulemaking. For the first two RFCs, these notifications were sent by US mail. In 2012 the MPCA transitioned to the GovDelivery system to provide electronic notifications. The GovDelivery system allows registrants to self-register to receive notices of interest and, as a result, reaches a more current list of addressees and much larger number of interested parties than were previously identified to receive the required notices under Minn. Stat. § 14.14, subd. 1a. The MPCA maintains that providing notice through the GovDelivery system meets the requirements of Minn. Stat. § 14.14, subd. 1a. The MPCA used the most current GovDelivery mailing lists to provide notice of the third RFC and for all subsequent notifications.

3. Office of Management and Budget

Minnesota Statute § 14.131 requires state agencies to consult with the Commissioner of Management and Budget to help evaluate the fiscal impact and fiscal benefits of proposed rules on local units of government. The MPCA will send the required information, including this SONAR, to the designated staff person at the Office of

Management and Budget at the time they are approved to be published for public comment.

4. Legislative notification

Minnesota Statute §14.116 requires specific notification of interested legislators. The MPCA will provide this notification at the time the proposed rules will be published for public comment. The MPCA plans to send the required information to the chairs and ranking Republican members of the Senate Environment and Energy Committee; Senate Environment, Economic Development and Agriculture Finance Division; and to the chairs and Democratic Leads of the House Environment and Natural Resources Policy and Finance Committee. (Note that the statutory authority to adopt the proposed rules is not a new grant of rulemaking authority and therefore the additional notification requirements of Minn. Stat. § 14.116 are inapplicable.)

Minnesota Statute §14.127 requires that an agency evaluate the cost of compliance with a proposed rule in the first year after the rule takes effect. If that cost exceeds $25,000 for any business that has less than 50 full-time employees or for any city that has less than ten full-time employees, and if a small business or municipality files for an exemption from the rules, then specific additional legislative approval is required. The MPCA has provided a discussion of the proposed rules in relation to this statute in Section 8.J. Because the MPCA has determined that it is possible that the cost threshold could be exceeded in the first year after the rule takes effect, a small business or city may file a written statement requesting a temporary exemption. If that occurs, the MPCA will take the necessary steps as required under Minn. Stat. §14.127.

Minnesota Statute section 14.131 also requires state agencies to send a copy of the SONAR to the Legislative Reference Library when the notice of hearing is mailed. This MPCA will provide this notification at that time.

5. Department of Agriculture

Minnesota Statute section 14.111 requires that if proposed rules will affect farming operations, an agency must provide a copy of the proposed rule changes to the Commissioner of the Minnesota Department of Agriculture (MDA) no later than 30 days prior to publication of the proposed rules in the *State Register*. The proposed rules do not change the applicability of antidegradation requirements related to farming practices under current regulatory or statutory authority. However, the MPCA believes it is prudent to keep the MDA informed regarding this rulemaking and staff of the MDA has been kept informed. Staff from the MPCA has met with MDA staff to discuss the proposed rules and MDA staff has participated in general stakeholder meetings. The MPCA will provide a 30 day review period to the Commissioner of MDA prior to publication.

6. Department of Health

There is no statutory requirement for the MPCA to notify the Minnesota Department of Health (MDH) of its rulemaking efforts, although because of the shared responsibility for water issues, the MPCA frequently provides special notice of rulemaking involving water standards. Although the MPCA does not believe that there is a need to provide special notification of the Commissioner of MDH for this rulemaking, MDH staff who are registered with GovDelivery will be notified at the time the rules are published for public comment.

7. Local government affected by the standards

Minnesota Stat. § 115.44, subd. 7 requires:

> *For rules authorized under this section, the notices required to be mailed under sections 14.14, subdivision 1a, and 14.22 must also be mailed to the governing body of each municipality bordering or through which the waters for which standards are sought to be adopted flow.*

The intent of this statute is to ensure that local governments are notified when the standards that apply to local waters are being changed. Because the proposed amendments will apply statewide and to all surface waters of the state the MPCA believes it is appropriate to provide notice to all municipalities. The MPCA will obtain a current list of all city administrators from the League of Minnesota Cities when the rules are proposed for public comment. Sending notice to this list of 800+ municipal officials will meet the requirements of Minn. Stat. § 115.44, subd. 7.

C. Additional notice

Minnesota Statute section 14.131 requires the MPCA to include in its SONAR a description of its efforts to provide additional notification to persons or classes of persons who may be affected by the proposed rules, or the MPCA must explain why these efforts were not made.

The MPCA's efforts to provide additional notice consist of:

- the development of an extensive mailing list of actively interested parties;
- early stage efforts to provide opportunities to interested parties to participate in the rule development process;
- efforts at the time the rules are published for comment.

1. Extensive mailing list

The current list of parties interested in the antidegradation rulemaking was developed over a number of years through a very broad outreach effort to a variety of sources. The original invitation to participate in this rulemaking was sent to approximately 700 organizations and individuals the MPCA expected to have an interest in antidegradation. These mailing lists were composed of NPDES/SDS permittees, persons who were active in past water quality standards rulemakings and persons and organizations known to have an interest in water-related issues. The individuals who indicated their interest in the antidegradation rulemaking were placed on a mailing list to receive invitations to the early phase stakeholder meetings. In 2012, the MPCA transitioned to a GovDelivery system for the distribution of rulemaking notices. The individuals who had previously indicated their interest in the antidegradation rulemaking were automatically entered into the GovDelivery system to receive future notices. In addition, a number of efforts were made to encourage others to register with the GovDelivery system with the result that, at the time of the development of this SONAR, more than 1,500 interested parties have registered with GovDelivery to receive notifications specifically about the antidegradation rulemaking and 2,000 have also registered to be notified of changes to the state water quality standards in general. This extensive list of self-registered interested parties far exceeds the requirement of Minn. Stat. § 14.14, subd. 1a and when notice of the publication of the proposed rules is sent, will constitute significant "additional" notification.

2. Stakeholder activities

a. *Meetings*

The MPCA initiated this rulemaking with a commitment to extensive public engagement. Before rules were drafted, the MPCA held a series of stakeholder meetings to discuss fundamental aspects of antidegradation policy and implementation. Formal meetings were held in 2008 and 2009 and interested parties had the opportunity to attend meetings held in three locations, St. Paul, Duluth and Rochester. Following that series of general interest meetings, MPCA staff continued to meet with specific groups and individuals to discuss issues associated with the antidegradation rulemaking. A list of meetings is provided in Attachment 1.

After receiving extensive stakeholder input, MPCA staff began the process of drafting rule language and resolving specific implementation issues. A meeting to re-engage stakeholders and to explain the MPCA's preliminary intentions regarding antidegradation rules was held on September 10, 2012. This meeting was held in the MPCA's offices in St. Paul, but was also simultaneously webcast to all interested parties. The MPCA provided a 25-day advance notice of that meeting and following the meeting, provided an additional 30 days to submit comments. The webcast remains available for review and a link to it is provided on the rulemaking webpage.

b. *Webpages*

The MPCA uses webpages to provide information about rulemaking activities and access to rulemaking information.

The MPCA maintains a general public notice webpage at https://www.pca.state.mn.us/public-notices. On this webpage the MPCA posts official notices of rulemaking activity, including each of the Request for Comments (RFCs) published in the *State Register* and the Notice of Hearing when it is published in the *State Register*. Notices that are published on the public notice remain available for viewing during the entire term of the comment period.

The MPCA also maintains a webpage (http://www.pca.state.mn.us/oxpg919) to provide information specifically about this rulemaking. This webpage was developed at the start of the rulemaking and is periodically updated to include new information about the MPCA's activities. As the MPCA completed the initial round of stakeholder meetings, the background materials, issue papers and the comments and notes from each meeting were posted. The MPCA has also posted "pre-proposal draft rule language" on this webpage for review. Three revisions to the pre-proposal draft rule language have been posted and each time the MPCA sent GovDelivery notices to notify interested parties. The MPCA intends to post this SONAR, the proposed rule language, exhibits and ongoing rulemaking documents (e.g., comments) on this webpage.

c. *Board Meetings*

MPCA staff provided an informational briefing at the January, 2015 meeting of the MPCA Citizens' Board. This meeting was webcast and advance notice of the meeting and agenda was provided to all persons registered to receive notice of Board

meetings and also through a Govdelivery notice to all persons registered to receive information about the antidegradation rules.

3. Additional notice when rules are proposed

When the MPCA publishes the Notice of Hearing in the *State Register* and conducts all statutorily required notifications, the following additional notice will be provided:

- An extended pre-hearing comment period will be provided.
- GovDelivery notice of hearing will be sent to all persons who have registered their interest in antidegradation or water quality standards.
- Notice of hearing and proposed rule language will be posted on the MPCA's public notice webpage as well as the antidegradation webpage.
- A "plain English" version of the Notice and a simplified summary of the amendments being proposed will be posted on the rulemaking webpage.
- Notice of hearing and proposed rule language will provided to the city administrators of all Minnesota municipalities.
- Participation in the rulemaking hearings will be encouraged by providing interactive access to the hearings through video-links to multiple regional locations. Information about regional access opportunities and directions to the videoconference sites will be provided as part of the Notice of Hearing.

D. Summary of notifications

The activities identified above meet the MPCA's mandatory notification requirements and also additional notice, ranging from the early stages of the rule drafting process through publication of the Notice of Hearing. The most important aspect of the MPCA's additional notice plan is the development of a current and extensive GovDelivery mailing list of interested parties. Throughout the rule development process the MPCA has provided opportunities for interested parties to be informed of the MPCA's rulemaking plans and to provide input into the development of the proposed amendments. In addition to publishing three RFCs in the *State Register*, the MPCA provided mailed and electronic notifications to interested parties and numerous opportunities for review and comment. The RFCs, plus draft rule language and additional information, were also regularly posted on MPCA's websites related to rulemaking and public information. The MPCA has met all statutory requirements for providing required and additional notice.

8. Regulatory analysis

Several Minnesota statutes establish requirements that must be addressed in the SONAR. Minn. Stat. § 14.131 requires that an Agency include a discussion on economic effect of the proposed rule amendments on the regulated community, regulatory entities and other affected parties. An Agency proposing a rule must also consider the effect of the rule on local government, and provide a discussion of how it has addressed additional specific legislative directives in the development of the rule. The following discussion addresses each of the statutory requirements of Minn. Stat. §§ 14.127, 14.128 and 14.131 to the extent they specifically relate to the proposed amendments.

A. Classes of persons who probably will be affected by the proposed rules

The MPCA is required to provide:

> *A 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.* Minn. Stat. § 14.131 *(1)*

The main classes of persons who will benefit from the proposed rules are the users and persons who have an interest in and reliance on the quality of Minnesota's surface waters and the biological communities those waters support. This is an extensive and significant class that includes any person who uses Minnesota waters for drinking water, recreation (swimming, fishing, boating, etc.), commerce, scientific, educational, cultural, and aesthetic purposes. The sustainable maintenance of the state's surface water quality benefits not only this generation, but generations to come. Those that will use the proposed rules, including the regulated community, consultants, concerned citizens, the MPCA and other governmental agencies, will benefit from their clear description of purpose and scope, standards, and procedures.

As with the current rules, there are costs associated with the implementation of the proposed antidegradation procedures. Applicants for individual permits will bear the cost of gathering information for their antidegradation assessments, the MPCA will bear the cost of conducting antidegradation reviews for both individual and general authorizations, and concerned citizens and other entities will bear the cost of participating in the MPCA's antidegradation determinations. Regulated parties will bear most of the cost associated with minimizing impacts to high water quality.

The EPA has an interest in the proposed rules. The EPA Regional Administrator (EPA Region 5 in Chicago) must approve all changes to Minnesota's water quality standards (see 40 CFR § 131.5)) (Exhibit 127)[127].

B. Probable costs to the MPCA and to any other agency and any anticipated effect on state revenues

The MPCA is required to provide an analysis of:

> *The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues.* Minn. Stat. § 14.131 *(2)*

1. Probable costs to the MPCA

The MPCA will expend additional effort in conducting antidegradation reviews when the proposed rules are implemented and enforced. The increased effort will be due to an increase in the number of reviews: 1) as a result of removing the significance threshold; and 2) as a result of including implementation procedures specific to different types of control documents. Attachment 2 provides details on how the following estimates were made.

As illustrated in Table 2, the MPCA conservatively estimates that it will expend $108,185 annually to conduct antidegradation reviews where they have not been conducted previously.

Table 2: Summary of the estimated number of additional antidegradation reviews and associated costs to the MPCA as a result implementing the proposed rules

Control document type	Anticipated annual increase in the number of reviews	Total increase in annual cost to conduct reviews
Individual NPDES wastewater permits	14.3	$44,416
Individual NPDES industrial stormwater permits	2.0	$6,212
Individual NPDES construction stormwater permits	0	0
Individual NPDES municipal stormwater permits	0	0
Section 401 actions on individual section 404 permits	15.5	$48,143
Section 401 actions on individual federal licenses and permits other than section 404 permits	0.8	$2,485
General NPDES wastewater permits	2.0	$4,778
General NPDES stormwater permits	0.2	$478
Section 401 actions on general section 404 permits	0.5	$1,195
Section 401 actions on general federal licenses and permits other than section 404 permits	0.2	$478
TOTAL	**35.5**	**$108,185**

The MPCA expects that it will need to conduct 14.3 additional antidegradation reviews on applications for individual NPDES wastewater permits each year as a result of removing the significance threshold. The additional cost to the MPCA associated with these reviews is estimated at $44,413 annually.

The probable increased cost to the MPCA associated with the inclusion of additional procedures (i.e., procedures other than those for individual NPDES wastewater permits) is estimated at $63,769 annually. This estimate requires some additional explanation. As discussed in Section 4.B.5., antidegradation requirements are and will continue to be applicable to all regulated activities that are required to comply with water quality standards. However, the current nondegradation rules do not contain implementation procedures for specific types of control documents and are difficult to apply to regulated activities other than wastewater treatment covered under individual NPDES permits. Because of these limitations, until recently the MPCA has not implemented nondegradation requirements through control documents other than individual NPDES wastewater permits. (Not including control document-specific implementation procedures in the current rules does not, in and of itself, exempt other regulated activities from antidegradation requirements.) The proposed rules will be more clearly applicable and readily implemented to other regulated activities than the current rules and, as a result, the MPCA expects to increase the number of antidegradation reviews

when the proposed rules are adopted. However, except for removing the significance thresholds discussed above, the proposed rules do not increase the actual universe of entities subject to antidegradation review.

Although the MPCA expects that there will be an increase in the number of future antidegradation reviews, the MPCA believes that the increase cannot be attributed to any new requirement of the proposed rules but instead is the result of removing the obstacles to the proper implementation of the current rules. If the MPCA were indeed implementing nondegradation provisions through control document issuance for all regulated activities subject to water quality standards, the proposed rules would not increase the scope of antidegradation implementation and thus not increase costs to the MPCA or regulated community simply by including implementation methods.

Including control document-specific implementation procedures in the proposed rules does, however, force the issue of which activities are subject to antidegradation procedures. Although the MPCA is not considering that the proposed rules will impose a significant "new" cost to the MPCA, the MPCA finds it prudent to discuss the costs associated with conducting reviews for activities in addition to the wastewater activities previously reviewed in association with individual permits.

The level of effort necessary for conducting the reviews will be absorbed into the normal staff complement and current budgets. Importantly, long-term costs to the MPCA surface water programs as a whole may actually decrease as a result of the clearly articulated implementation procedures and improved water quality protection, especially in regard to costs currently expended to restore waters not attaining water quality standards. This is further explained in Section 8. E., which addresses the probable costs or consequences of not adopting the proposed rules.

As with the current rules, the proposed procedures provide for public input on the MPCA's antidegradation determinations through existing provisions in Minn. R. ch. 7001. The proposed rules provide more opportunity for comment as a result of the increase in the number of preliminary antidegradation determinations. However, the proposed rules also create much greater transparency and consistency, which may, in fact, result in fewer comments. Costs associated with reviewing comments, whether under existing or proposed provisions, vary depending on the level of interest and the complexity of the proposed activity. Based on these considerations the MPCA cannot reasonably determine whether there will be an increase in cost as a result of the proposed changes.

2. Probable costs to other agencies

Antidegradation is currently and will continue to be an integral part of Minnesota's water quality standards and is implemented and enforced through MPCA-issued control documents that require compliance with those standards. Other agencies do not implement or enforce antidegradation as it relates to the protection of the state's water quality. Other agencies may, however, have an interest in and provide comment on the MPCA's preliminary antidegradation determinations. Estimates of the costs to other agencies for developing comments cannot reasonably be made because they will vary widely depending on whether other agencies have an interest in a given activity, the level of interest and the complexity of the proposed activity.

3. Anticipated effects on state revenues

The MPCA does not anticipate that implementation and enforcement of the proposed rules will directly affect state revenues. There may, however, be indirect effects to public funds where those funds are used to financially assist public projects. For example, the Public Facilities Authority (PFA) provides financial assistance to wastewater facilities based on a proposer's ability to pay for a project. It is possible that the proposed rules' requirements to implement prudent and feasible alternatives that minimize high water quality degradation may incur costs that will need to be covered by PFA funding. Predicting these costs is not possible given the situation-specific nature of antidegradation implementation.

C. Assessment of alternative methods for achieving the purpose of the proposed rules, including those that may be less costly or less intrusive

The MPCA is required to provide:

> *A determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule.* Minn. Stat. § 14.131 *(3)*

and;

> *A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule.* Minn. Stat. § 14.131 *(4)*

The MPCA is addressing both of these statutory requirements in the same discussion because the MPCA's efforts are similar. The discussion of how the MPCA considered less costly or less intrusive methods is very similar to the discussion of the MPCA's consideration of how to alternatively achieve the purpose of the proposed rules.

1. The differences between the purpose of the current nondegradation rules and the purpose of the proposed rules

The stated purpose of the proposed rules is to "*…achieve and maintain the highest possible quality in surface waters of the state.*"(Proposed Minn. R. 7050.0250) This purpose is different than the stated purpose of the current nondegradation rules. The current rule (Minn. R. 7050.0185, subp. 1) states that "*it is the policy of the state of Minnesota to protect all waters from significant degradation from point and nonpoint sources and wetland alterations, and to maintain existing water uses, aquatic and wetland habitats, and the level of water quality necessary to protect these uses."* The proposed purpose of achieving and maintaining the highest possible quality of waters of the state is fundamental to the federal standard of antidegradation. Federal regulations at 40 CFR § 131.12 require that states and authorized tribes adopt antidegradation policy that is consistent with the levels of protection specified in the same regulations. These levels of protection are plainly articulated in the proposed rule's purpose statement. Meeting this stated purpose is accomplished by strictly prohibiting water quality degradation where that water quality is necessary to maintain outstanding characteristics of ORVWs or to maintain an existing use. For waters that are of high quality, the proposed rules allow for degradation when necessary to accommodate important social or economic development.

2. Determination of whether there are less costly or less intrusive methods for achieving the purpose

The MPCA cannot achieve the purpose of meeting the federal antidegradation standard without requiring those new elements of the proposed rules that are specifically designed to meet those federal standards. For example, the MPCA cannot meet the federal expectation of protecting assimilative capacity of high quality waters without eliminating the current exemptions for significance thresholds.

In this rulemaking the MPCA is proposing to repeal Minn. R. 7050.0180 and Minn. R. 7050.0185, which have been the basis of the state's nondegradation program for decades, and replace them with new rules. The MPCA has carefully considered the potential costs of the proposed antidegradation requirements and does not believe that there are any less costly or less intrusive methods that meet the needs identified for this rulemaking.

3. Determination of whether there are alternatives to achieving the purpose

The MPCA spent considerable effort in reviewing other states' antidegradation policy and implementation procedures, as well as antidegradation-related case law. States' antidegradation provisions vary considerably due, in part, to each state's unique regulatory framework and the water resources they protect. For example, implementation procedures for water-rich states tended to differ from states with fewer water resources. Applicable concepts from other states and court decisions were important factors in the development of the proposed rules.

As discussed in Section 1.C.1., the MPCA's approach to this rulemaking was to first obtain an independent evaluation of the current rules in relation to the federal antidegradation standards and those in other states. This evaluation revealed the areas the MPCA needed to address in establishing the scope of the proposed rules. The MPCA then obtained significant external and internal stakeholder input through multiple reiterations of draft rules.

The MPCA considered simply amending the current nondegradation rules. The last major revisions to the nondegradation rules occurred in 1988. Since that time there have been significant changes in understanding of water quality protection, state and federal regulatory programs, and EPA guidance concerning the implementation of antidegradation policy. The inadequacies of the current rules have resulted in legal challenges (see Section 4.B.4.), resulting in substantial costs to both the MPCA and the regulated community. (A detailed analysis of the shortcomings of the current rules is provided in Section 4.B., while detailed analysis of specific provisions in the proposed rule is provided in Section 5.) The current rules have such significant omissions and are so significantly out of date, the MPCA determined it would be clearer to simply repeal the existing nondegradation rules and propose entirely new rules that met the current needs.

The MPCA considered retaining some form of *de minimis* exemptions from antidegradation procedures, but this concept was rejected due to reasons provided in Section 5.G.1.b.

An alternative the MPCA also considered was using ACE's determinations made under section 404(b)(1) guidelines (Exhibit 84) to satisfy antidegradation requirements for

those activities involving physical alterations to water bodies. The determinations made under section 404(b)(1) guidelines are based on a broad range of considerations, only one of which is water quality. The MPCA found this option to be unacceptable because of the inadequacy of the review factors. Furthermore, this idea was rejected because the ACE relies on the MPCA to ensure water quality standards are met through CWA section 401 certification processes.

D. Probable costs of complying with the proposed rules

The MPCA is required to provide:

> *The probable costs of complying with the proposed rule, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses, or individuals.* Minn. Stat. § 14.131 *(5)*

The following discussion addresses the probable costs of complying with the proposed rules, beyond those associated with implementing current rule requirements, borne by entities other than the MPCA. Costs to the MPCA are discussed in Section 8.B.

Due to the length of this discussion, the following outline may help readers find a particular topic of interest:

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2. Explanation of probable costs
   - 2.a. What differences between the proposed rules and the current rules will increase probable costs of compliance? 144
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   - 2.f. What are the probable costs of minimizing high water quality degradation to permittees regulated under general authorizations? 154
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1. Summary

Probable costs of complying with the proposed rules will be borne by the regulated community as a result of 1) providing the information the MPCA needs to make antidegradation determinations, and 2) minimizing high water quality degradation. Costs will also be incurred by entities interested in the MPCA's antidegradation assessments as a result of reviewing assessments and preparing comments.

a. Probable costs to the regulated community (summary)

(1) Preparation of antidegradation assessments (summary)

The proposed rules require applicants seeking coverage under an individual control document to provide an antidegradation assessment – information the MPCA needs to make antidegradation determinations. (Note: applicants seeking coverage under general authorizations will not be required to provide assessments.) **Probable annual cost to applicants regulated through individual control documents resulting from the preparation of antidegradation assessments is conservatively estimated at $2,175,155.** These costs are summarized in the table below:

Table 3: Summary of estimated annual costs to the regulated community for preparing antidegradation assessments as a result of implementing the proposed rules.

Applicants for the following control documents:	Anticipated annual increase in the number of assessments prepared	Estimated total annual costs for preparing assessments
Individual NPDES wastewater permits	14.3	$ 925,939
Individual NPDES industrial stormwater permits	2.0	$ 129,502
Individual NPDES construction stormwater permits	0	$ 0
Individual NPDES municipal stormwater permits	0.4	$ 23,470
Individual section 404 permits	15.5	$ 1,003,641
Individual federal licenses or permits other than section 404 permits	0.8	$ 92,603
TOTAL	**33.0**	**$2,175,155**

(2) Minimizing high water quality degradation (summary)

The proposed rules do not specify which pollution control measures will result in minimizing degradation of high quality water because those determinations, made through the review process, are situation-specific. Considerations include the nature of the discharge, the characteristics of the impacted waters and which control measures are considered to be prudent and feasible for a given regulated entity. The availability and reliability of pollution control measures change over time – what is considered to be infeasible today may be found to be feasible in the future. The economic realities (e.g., ability to pay for a given control measure) of one

applicant may not be the same for another. Given the situation-specific nature of antidegradation considerations, cost estimates for minimizing degradation of high quality water cannot reasonably be made.

b. Probable costs to entities commenting on preliminary antidegradation determinations (summary)

The proposed rules will provide more opportunity for comment as a result of the increase in the number of activities subjected to antidegradation procedures, which would be expected to result in a greater number of comments. Conversely, the procedure also creates much greater transparency and consistency, which may in fact result in a fewer number of comments. Costs associated with reviewing assessments and preparing comments, whether under existing or proposed rules, vary depending on the level of interest and the complexity of the proposed activity. The MPCA considers that overall there will be no increase in the cost to entities commenting on antidegradation determinations.

2. Explanation of probable costs

The following discussion, presented in a question and answer format, will aid the reader in understanding how the MPCA arrived at the conclusions provided in the above summary.

a. What differences between the proposed rules and the current rules will increase probable costs of compliance?

Probable costs of implementing the proposed rules are the result of the following changes to the current provisions.

- An increase in the number of reviewable activities due to removing the significance threshold.
- An increase in the number of reviewable activities due to the inclusion of viable implementation procedures for specific types of control documents. As previously discussed (see Section 4.B.5.), antidegradation provisions are applicable to regulated activities which require compliance with surface water quality standards. Because the current rules are outdated, they are written in a way making it difficult to apply them to activities other than wastewater activities regulated under individual NPDES permits. Until recently the MPCA has not actively applied nondegradation provisions to activities other than individually-permitted wastewater facilities. The proposed rules do not create additional regulatory authority, but rather provide procedures through which antidegradation requirements are to be applied to regulated activities which must already comply with water quality standards. The MPCA argues that the proposed rules will not create additional costs simply by including activity-specific procedures. However, for the sake of completeness, the MPCA is providing a discussion of the probable costs to impacted entities.
- An increased opportunity for comment on the MPCA's preliminary determinations due to the wider range of activities explicitly subject to antidegradation procedures.

b. What are the general categories of parties who will bear the probable cost of complying with the proposed rules?

In regard to the increases in reviewable activities due to removing the significance threshold, the affected parties will be owners and operators of proposed new or expanding wastewater facilities covered under individual NPDES permits that would not have been considered significant under the current rules. These include both municipal and industrial facilities. The PFA may also incur costs in situations where facilities request financial assistance.

In regard to the increase in the number of reviewable activities due to the inclusion of viable implementation procedures for specific types of control documents, the affected parties include applicants for NPDES stormwater permits for MS4s, construction and industrial activities. Affected parties will also include applicants for federal licenses and permits requiring CWA section 401 certification actions. These same parties, plus all those who may be affected, either positively or adversely, by the proposal, will also bear some degree of cost by participating in the increased opportunity for comment in the proposed rules. To the extent that there is a cost associated with participating in the public involvement phase of the antidegradation review, citizens, environmental groups, industry representatives and persons interested in a particular water resource may all bear some part of the cost of participation.

c. *What specific requirements in the proposed rules will cause the regulated community to expend resources beyond those expended under the current rules?*

(1) Antidegradation assessments – applicants for individual authorizations

The proposed rules require that applicants for individual authorizations (i.e., individual NPDES permits and section 401 certifications of individual federal licenses and permits) provide the MPCA with antidegradation assessments. The assessments will include an analysis of alternatives which avoid net increases in loading or other causes of degradation. If there is no prudent and feasible alternative that avoids net increases in loading or other causes of degradation, the applicant will need to identify the alternative that prudently and feasibly minimizes high water quality degradation, assess impacts to existing high water quality, and provide a justification for degrading high water quality based on the economic and/or social needs of the community. Applicants for individual municipal stormwater permits will be less affected. They will need to provide the same demonstration as other applicants for individual authorizations, except that the assessment of existing water quality and resulting impacts to that quality will not be required.

There are challenges in determining the additional level of effort spent in developing antidegradation assessments beyond current practices and/or other regulatory requirements. For example, the planning processes for new or expanding wastewater facilities generally include a review of pollution control measures with the goal of identifying those that are the most cost-effective. The antidegradation assessment requires an alternatives analysis that may consider cost-effectiveness, but is focused on identifying alternatives which prudently and feasibly minimize high water quality degradation. Some of the effort required in existing facility planning processes will be applied to the preparation of antidegradation assessments. In another example, the ACE is required to make determinations that proposed projects regulated under CWA section 404

permits have avoided or minimized impacts (see 40 CFR § 230) (Exhibit 84) and that the proposed project is in the public interest (see 33 CFR § 320.4) (Exhibit 111). Some of the information provided by section 404 permit applicants to the ACE will be applicable in developing antidegradation assessments.

Applicants seeking coverage under general authorizations will not be required to provide antidegradation assessments, which will reduce their costs. The MPCA will be responsible for conducting the necessary antidegradation reviews during the development of general authorizations. Antidegradation requirements are satisfied when an applicant demonstrates that the terms and conditions of the general authorization can and will be met.

(2) Minimizing degradation of high water quality

Permittees will be required to implement the alternative, identified through the alternatives analysis, which prudently and feasibly avoids or minimizes high water quality degradation. This requirement applies to entities covered under both individual and general authorizations.

d. What are the probable costs to applicants seeking individual control document authorization for preparing antidegradation assessments?

The MPCA estimates the following number of applicants (by control document type) will be required to provide antidegradation assessments each year. These estimates identify those applicants that do not currently provide antidegradation assessments, but would under the proposed rules either because of removing the significance threshold or because the proposed rules' inclusion of procedures for specific types of control documents.

- 14.3 applicants for individual NPDES wastewater permits
- 2.0 applicants for individual NPDES industrial stormwater permits
- 0 applicants for individual NPDES construction stormwater permits
- 0.4 applicants for individual NPDES municipal stormwater permits
- 15.5 applicants for individual section 404 permits where the MPCA provides or denies a section 401 certification
- 0.8 applicants for individual federal licenses and permits (other than section 404 permits) where the MPCA provides or denies a section 401 certification

The total number of applicants that will be required to provide assessments each year is estimated to be 33. Note that these numbers are similar to those estimated for the number of reviews conducted by the MPCA (Section 8.B.). The difference is in the number of reviews versus assessments for individual NPDES municipal stormwater permits. The discussion in Section 8.B. stated that there will be no increase in the number of **reviews** for these permit types because the most-recent (and only) nondegradation procedures entailed the MPCA (not the applicant) gathering the information needed to make its determination. In other words, the MPCA essentially conducted what is equivalent to the antidegradation assessment in the past. Because the proposed rules explicitly require applicants for individual NPDES municipal stormwater permits to provide antidegradation assessments and because the MPCA conducted these activities in the past, the MPCA is considering this a new activity.

Costs for preparing assessments will be dependent upon the complexity of the project, and the availability of both water quality data and information needed for the social and economic justification. Therefore predicting the exact cost of preparing assessments is difficult because the MPCA cannot reasonably predict who will apply for permits and the complexity of the proposed activities.

The costs of learning how to conduct an assessment will be minimized by previous experience. Although the current rules do not explicitly require that an applicant provide an antidegradation assessment, they or their consultants provide similar information to the MPCA for nondegradation reviews of significant discharges. In addition, applicants seeking financial assistance for municipal wastewater and stormwater treatment systems have, since 2007, submitted plans that include alternative analyses, which are in many ways similar to those required in the proposed rules. (Minn. R. 7077.0272, subp. 2(D))

The discussion below provides the estimated costs for each type of applicant. The MPCA understands that the cost estimates use very broad assumptions and that the effort required for completing assessments depends greatly upon the size and complexity of the project and the associated environmental risks. Estimating the effort and expense to establish existing water quality and the impacts to existing water quality is difficult. Variables associated with the determination of existing water quality include the parameter in question and the availability of existing water quality information. When previously-gathered data are insufficient to establish existing water quality, the applicant will likely make an assessment of existing water quality by conducting monitoring and/or modeling.

(1) Individual NPDES wastewater permits

The MPCA reviewed the economic impacts analyses from three states which recently adopted antidegradation rules (Table 4). The analyses for all three states addressed the costs to NPDES regulated wastewater treatment facilities for providing what is equivalent to the proposed rules' antidegradation assessment.

Table 4: Analyses from three states' rulemaking activities on estimated costs and levels of effort to prepare antidegradation assessments for wastewater treatment activities regulated under individual NPDES permits.

	Simple Assessments		Complex Assessment	
State	**Cost/Assessment**	**Hours/Assessment**	**Cost/Assessment**	**Hours/Assessment**
Iowa	$4,125	41	$16,025	160
Indiana	$4,000	(not provided)	$16,000 - $48,000 (using hourly rates of $100 and $300, respectively)	160
Missouri	$11,200	115	$94,300	759

Table 4 notes:

Information sources:

Iowa: A Fiscal Impact Statement Associated with the Notice of Intended Action, Antidegradation – Water Quality Standards (Chapter 61), Department of Natural Resources (September 2, 2008, Revised October 27, 2008) (Exhibit 128)[128]

Indiana: Fiscal Impact Statement, Title 327, Water Pollution Control Board, Indiana Register, December 7, 2011 (Exhibit 129)[129]

Missouri: Proposed Amendment, Water Quality Standards (10 CSR 20-7.031), Missouri Register, Vol. 33, No. 2 (January 16, 2008) (Exhibit 130)[130]

The term "antidegradation assessment" denotes information provided by an applicant to the regulating agency for the purpose of informing an antidegradation determination.

"Simple assessments" for Iowa and Missouri represent those that resulted in the identification of alternatives that did not discharge to or degrade a water body. The MPCA assumes, in these cases, that when the applicant identified a no discharge/degradation alternative, additional information from the applicant was not required. For Indiana, a "simple assessment" was one in which the applicant provided information that the discharge does not meet the significance threshold (i.e. is *de minimis*) and therefore additional information is not required. (Note that Iowa's rules and the proposed rules do not provide exemptions for *de minimis* discharges.)

"Complex assessments" for each state require the applicant to provide information on how degradation or loading is to be minimized and how the benefits of the proposed activity accommodate important economic or social development. Missouri's "complex assessment" also requires the applicant to provide an assessment of existing water quality. Missouri's estimated time to complete a "complex assessment" does not include laboratory hours for water quality analyses. The cost for the analyses ($25,000) is reflected in the total cost per assessment ($94,300).

Iowa's analysis includes the costs and levels of effort for the applicant to provide a public notice of the assessment. Under the proposed rules, the cost of public notice will be incurred by the MPCA.

Indiana used the same level of effort as Iowa (160 hours) to prepare "complex assessments".

The proposed rules are similar to the rules of the above-mentioned states in a number of areas:

- Provisions for all three Tiers of antidegradation protection.
- Scope – antidegradation is implemented through the issuance of NPDES permits and section 401 actions.
- High water quality is determined on a parameter-by-parameter basis.
- Alternatives analyses, which consider non-degrading and minimally-degrading alternatives, are required, resulting in the identification of the alternative that reasonably minimizes impacts to high water quality.

- Antidegradation review is conducted when general permits are developed, eliminating individual reviews for each applicant seeking coverage under the general permit
- Antidegradation is implemented through section 401 considerations regarding section 404 permits.

There are, however, differences. Both Missouri and Indiana provide for *de minimis* exemptions, while Iowa and the proposed rules do not. Iowa requires the applicant to provide a public notice of the assessment, while the proposed rules require the MPCA to conduct this task. Like Missouri, the proposed rules clearly require the applicant to provide an assessment of existing high water quality before allowing degradation to occur.

Table 4 illustrates a wide range in estimated costs for developing antidegradation assessments. The MPCA is proposing to base its own cost estimation on Missouri's for the following reasons.

- Missouri's cost analysis is the most comprehensive and provides the greatest detail.
- Missouri's analysis includes information on assessing existing water quality, a requirement found in the proposed rules.
- The levels of effort spent for each part of Missouri's assessment are, in MPCA's opinion, conservative yet reasonable. Missouri's cost estimates are conservative not only because its costs are relatively higher than the estimates provided by other states, but also because Missouri's rules provide exemptions for *de minimis* discharges, while the proposed rules do not. Thus Missouri's estimates for an individual application will likely be higher than that experienced under the proposed rules because Missouri's antidegradation assessments are weighed toward more complex projects which are assumed to require more costly assessments.

  Based on Missouri's levels of effort (i.e., hours to complete a given task and laboratory costs for determining existing water quality), Table 5 provides conservative estimates for preparing antidegradation assessments under the proposed rules.

Table 5: Estimated increased costs that will be incurred by applicants for individual NPDES wastewater permits for the preparation of an antidegradation assessment as a result of implementing the proposed rules.

Low Cost (Less Complex) Scenario

Assessment Part	Estimated hours required	Estimated cost
Part 1. Analysis of alternatives which avoid net increases in loading	Engineer – 50 hrs.	$7,365
	Technician – 65 hrs.	$6,383
Estimated cost to complete less complex assessment (Part 1.)		$13,748

High Cost (More Complex) Scenario

Assessment Part	Estimated hours required	Estimated cost
Part 1. Analysis of alternatives which avoid net increases in loading	Engineer – 100 hrs.	$14,730
	Technician – 130 hrs.	$12,766
Estimated cost to complete Part 1.		$27,496
Part 2. Determining existing water quality.	Sampling labor – 100 hrs.	$1,841
	(Laboratory costs)	$30,687
	Consultant (sampling and analysis plan) -200 hrs.	$24,550
Estimated cost to complete Part 2.		$57,078
Part 3. Analysis of minimally degrading alternatives.	Engineer – 120 hrs.	$17,676
	Technician – 52 hrs.	$5,107
Estimated cost to complete Part 3.		$22,783
Part 4. Social/Economic Justification	Planner – 36 hrs.	$5,303
	Engineer – 21 hrs.	$3,094
Estimated cost to complete Part 4.		$8,397
Estimated cost to complete a more complex assessment		$115,754

Table 5 notes:

Costs are based on the economic impact analysis for Missouri's antidegradation rulemaking (Proposed Amendment, Water Quality Standards (10 CSR 20-7.031), Missouri Register, Vol. 33, No. 2 (January 16, 2008). (Exhibit 130)

Missouri's 2008 cost estimates were adjusted to reflect:

- A 13% increase for higher wages in Minnesota. According the U.S. Department of Labor, Bureau of Labor Statistics, the average wage for all occupations in 2012 was approximately 13% higher in Minnesota compared to Missouri (http://www.bls.gov/oes/current/oessrcst.htm).
- Inflation from 2008 to 2013 using the U.S. Department of Labor, Bureau of Labor Statistics CPI Inflation Calculator (http://www.bls.gov/data/inflation_calculator.htm)

The "Low Cost (Less Complex) Scenario" represents situations where the applicant identifies a prudent and feasible alternative that avoids a net increase in loading or other causes of degradation. In these cases the applicant will not be required to provide information of existing water quality, minimally degrading alternatives, or social/economic justification.

The "High Cost (More Complex) Scenario" represents situations where prudent and feasible alternatives are not available to avoid a net increase in loading or other causes of degradation. In these cases the applicant will be required to provide information of existing water quality, minimally degrading alternatives, and social/economic justification.

In Missouri's analysis, antidegradation assessments are equally divided between the "Low Cost (Less Complex) Scenario" and the "High Cost (More Complex) Scenario." Following this same assumption, the MPCA estimates the average cost of preparing an assessment will be $64,751 (($13,748 + $115,754)/2).

Therefore, the MPCA estimates that the increased total cost of preparing antidegradation assessments to those applying for individual NPDES wastewater permits will be $925,939 per year ($64,751/assessment X 14.3 additional assessments per year). Note that this is a conservative estimate because it does not account for any shared costs applicants may incur with facility planning outside of what is required for antidegradation assessments.

A portion of the cost associated with the preparation of antidegradation assessments will be shared with the normal practice of developing of facility plans. The MPCA reviewed facility planning costs for applicants seeking PFA assistance and estimates an average of $43,000 (range = $4,000 - $176,000) is spent on the preparation of each plan (see Attachment 3). It is not possible to state with any accuracy what portion of these costs will be shared the preparation of antidegradation assessments, but the MPCA expects that they will be significant.

(2) Individual NPDES industrial stormwater permits

The MPCA estimates that two applicants for individual NPDES industrial stormwater permits will be required to provide antidegradation assessments each year. Industrial facilities with stormwater discharges are in some ways similar to wastewater facilities in that the discharges typically enter surface waters at relatively discrete locations and the facilities are owned and/or operated by a single entity. For both industrial stormwater and wastewater discharges regulated under individual permits, the discharges are to relatively few surface waters, which are identified at the time the assessments are prepared. Because of these similarities, the same antidegradation procedures will apply to both types of activities. The MPCA anticipates that the costs associated with preparing an antidegradation assessment ($64,751/assessment) will be similar to that of wastewater activities. **Therefore, the estimated annual**

cost to individual NPDES industrial stormwater applicants will be $129,502 ($64,751 per assessment X 2 assessments per year).

(3) Individual NPDES municipal stormwater permits

The MPCA currently issues two individual municipal stormwater permits – one for the city of Minneapolis and the other for the city of St. Paul. As other cities increase in size, it is conceivable that they could fall under individual permit coverage but the MPCA cannot predict if and when this will happen. Based on past permitting issuance, the MPCA estimates that, on average, annually 0.4 applications for individual NPDES municipal stormwater permits will include antidegradation assessments where they have not previously been provided by the applicant.

Even though pollution control measures used for wastewater and for stormwater are very different, the process of developing antidegradation assessments will be similar. Therefore, the costs identified in Table 5 may be used to roughly estimate those costs incurred by applicants for individual municipal stormwater permits. Note that the proposed rules do not require applicants for these permits to provide an assessment of existing water quality, which will reduce the cost of the antidegradation assessment. Assuming all antidegradation assessments are complex (high cost scenario), the average cost per assessment is estimated to be $58,676 ($115,754 average cost for complex assessments - $57,078 cost of assessing existing water quality). **Therefore, the estimated annual cost to individual NPDES municipal stormwater applicants is $23,470 per assessment ($58,676/assessment X 0.4 assessments per year).**

(4) Individual CWA section 404 permits

The MPCA estimates that 15.5 CWA section 401 actions will require applicants for individual section 404 permits to provide antidegradation assessments to the MPCA each year. Section 404 dredge and fill permits are issued by the ACE and are subject to states' section 401 actions.

The proposed rules require an applicant to determine impacts to existing water quality, minimize degradation, meet water quality standards, ensure that adequate mitigation is provided for loss of aquatic resources, ensure that proposed activities are in the public interest (i.e., important), and protect outstanding resources. These requirements are also found in federal regulations (see 40 CFR § 230 (Exhibit 84) and 33 CFR § 320.4) (Exhibit 111). The ACE is required to make factual determinations that the above requirements are satisfied when issuing a section 404 individual permit.

In an effort to streamline permitting processes the MPCA, ACE and other regulatory agencies have developed a joint application for projects involving physical alterations to wetlands and other water bodies. Some of the information needed to make MPCA's antidegradation determinations may be obtained from this application. The current application, however, is relatively simple and is used for a very wide range of projects including those that are covered under the ACE general permits. The MPCA expects that the MPCA will need additional information not provided in the joint application to make antidegradation determinations on complex projects. For example, the current

joint application does not require information to address compensatory mitigation for impacts to waters other than wetlands. It also does not require the applicant to provide a justification for impacts based on the importance of economic or social development. It should be noted that the ACE and the MPCA are engaged in ongoing efforts to modify the joint application to meet the needs of both agencies.

Depending on a number of factors, including the type and complexity of the project and the sensitivity of the surface water, applicants may be required to provide additional information not currently found on the joint application. The costs associated with providing the additional information will vary accordingly and cannot be generally estimated.

Taking a conservative approach that assumes that none of the information provided by the applicant on the joint application is relevant to an antidegradation assessment and assuming that the average cost for developing an assessment is the same as for individual wastewater applicants ($64,751), the estimated annual cost for individual section 404 applicants to prepare antidegradation assessments is $1,003,641 ($64,751/assessment X 15.5 assessments/year). Using the average cost of $64,751 to prepare an assessment is reasonable because proposed projects will range from those that are relatively less complex to ones that are more complex.

(5) Individual federal licenses and permits other than CWA section 404 permits

Some section 401 actions, other than those taken on individual section 404 permits discussed above, will require an applicant to provide an antidegradation assessment to the MPCA. The MPCA estimates 0.8 of these types of assessments will be submitted annually. Non-section 404 individual federal licenses or permits that require a section 401 action are usually complex and require preparation of an Environmental Impact Statement (EIS). Some of the elements of an EIS are very similar to antidegradation assessments. In Minnesota a variety of independent statutory authorities carry out solutions suggested by an EIS. State agencies, including the MPCA, can reject the proposer's preference in favor of a "feasible and prudent" alternative if the former is "likely to cause pollution, impairment or destruction" of natural resources (Minn. Stat. § 116D.04, subd. 6).

Keeping with the conservative approach to estimating costs by assuming that none of the information provided in an EIS is applicable to the preparation of an assessment, the MPCA estimates the annual cost to applicants preparing assessments for federal licenses and permits (other than section 404 permits) to be $92,603 ($115,754 to prepare a complex assessment X 0.8 assessments/year).

e. What are the probable costs of minimizing high water quality degradation to permittees regulated under individual authorizations?

For significant discharges, the current rule governing nondegradation for all waters requires the MPCA to determine whether additional control measures beyond those necessary to comply with water quality standards and effluent limits can reasonably be taken to minimize the impacts (see Minn. R. 7050.0185, subp. 4.). In other words,

the MPCA is currently not required to determine whether reasonable control measures can be taken to minimize impacts for discharges that are not significant. The proposed rules do not contain a similar *de minimis* exemption. The proposed provisions require the MPCA to approve high water quality degradation only when there is implementation of the alternatives that minimize the degradation. The proposed rules do not specify which pollution control measures will result in minimizing degradation. Those determinations, made through the review process, are situation-specific. Considerations include the nature of the discharge, the characteristics of the surface waters and the control measures considered to be prudent and feasible. The availability and reliability of pollution control measures change over time – what is considered to be infeasible today may be found to be feasible in the future. The economic realities (e.g., ability to pay for a given control measure) of one applicant may not be the same for another applicant. Given the situation-specific nature of antidegradation review, estimates of the costs of minimizing high water quality degradation cannot reasonably be made.

The MPCA reviewed the economic impacts analyses from three states, Iowa, Illinois, and Missouri (see Table 4) and found that the costs associated with implementing reasonable control measures that minimize high water quality degradation was not addressed in any of the states' analyses for the same reasons expressed above.

Although the MPCA cannot provide specific data on costs to implement alternatives that minimize high water quality degradation, the MPCA can provide examples of how alternatives analyses will be conducted and the associated costs of implementing the preferred alternatives under different circumstances. Attachment 4 provides examples.

f. What are the probable costs of minimizing high water quality degradation to permittees regulated under general authorizations?

Through the review process associated with general authorizations, the MPCA identifies alternatives that prudently and feasibly minimize net increases in loading or other causes of degradation. Permittees regulated under these authorizations will be required to implement these pollution control measures. The proposed rules are not prescriptive about which control measures will accomplish this requirement. Water quality protection through general permitting programs is achieved through an adaptive management process whereby control measures are constantly evaluated and reevaluated. Because of the selection of pollution control measures are made at the time general authorizations are made it is not possible to estimate associated probable costs.

g. What are the probable costs of preparing comments on preliminary determinations?

As required by federal antidegradation regulations, the proposed rules also provide an opportunity for interested entities to participate the MPCA's decision regarding the lowering of high water quality. Interested entities include individuals, environmental groups, industry associations and governmental agencies affected by potential changes in water quality. As with the current rule, the proposed rules provide for public input through existing provisions in Minn. R. ch. 7001. The proposed rules will increase the number of activities subjected to antidegradation procedures and therefore increase the number of possible opportunities for comment, but also create much greater transparency and consistency, which may

result in a fewer number of comments or reduced effort needed to meaningfully participate in the public input process. Costs associated with preparing comments, whether under existing or proposed provisions, vary depending on the level of interest and the complexity of the proposed activity and cannot be reasonably estimated.

E. Probable costs or consequences of not adopting the proposed rules

The MPCA is required to provide:

> *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.* Minn. Stat. § 14.131 (6)

The consequence of not adopting the proposed rules is the continued application of the current nondegradation rules, including continued uncertainty in their implementation. Lack of clarity in the current rules has resulted in a number of legal challenges that, in addition to the legal costs, led to delays in permit issuance. Two cases illustrate such situations. In the first case, the city of Princeton in 2003 requested a permit for a wastewater treatment plant with a discharge capacity three times greater than the current facility. The MPCA's original review of Princeton's nondegradation assessment favored approval. However, an environmental group objected and sued for reconsideration, maintaining that meaningful alternatives to the increased discharge were overlooked and that the existing water quality was not adequately understood before the MPCA made its nondegradation determination. The Minnesota Court of Appeals found in favor of the plaintiffs:

> *Under Minnesota's nondegradation rules, the City of Princeton must analyze the prudence and feasibility of a downsized WWTP used in conjunction with acceptable decentralized treatment to meet additional anticipated population growth before such an alternative can be rejected by the city and MPCA as not prudent or feasible. The MPCA must establish the existing water quality of the Rum River and impose necessary requirements and restrictions on Princeton's proposed WWTP to protect that quality.* MCEA v. MPCA, City of Princeton, 696 N.W.2d 95, 108*109 (Minn. App. 2005) (Exhibit 60)

The Court said simply that Princeton's and the MPCA's evaluations were not good enough. It did not set a standard for nondegradation evaluations. The permit was ultimately issued, but only after the city revised its assessment to include an evaluation of additional alternatives to downsize the WWTP and an assessment of existing water quality.

The other case involved a legal challenge to the issuance of a general NPDES permit for municipal separate storm sewer system (MS4s) discharges. The Minnesota Court of Appeals in 2003 ruled that, although the use of general permits was appropriate to regulate municipal stormwater discharges, the existing rules were inadequate because they did not provide a means to determine whether nondegradation review was required (Exhibit 59). In other words, the rules did not address whether individual discharges covered under the general permit were in fact expanded discharges. A settlement was reached between the environmental group which brought the suit, the MPCA, and a group representing cities regulated by the NPDES program for stormwater discharges. The settlement required 30 MS4s to conduct nondegradation analyses. The analyses included loading assessments to

estimate changes in average annual flow, phosphorus and total suspended solids from 1988-1990 to the present (2000-2005), and from the present to 2020. The information was then used to determine if stormwater discharges from a given MS4 was considered to be an expanded discharge. Those MS4s found to have expanded discharges were required to submit nondegradation reports which identified what additional control measures would be needed to bring the volume and/or loadings back to 1988 levels. Considerable effort and cost on behalf of both the MS4s and the MPCA was expended to make these determinations, all because the current rules do not adequately address the application of antidegradation through general permits.

Both of the above cases resulted in costs associated with litigation and significant delays in permit issuance due to the inadequacies of the current rules. If the proposed rule is not adopted, such legal challenges and delays are likely to continue. Regardless of the outcome of future legal challenges, there would be significant direct costs to the plaintiffs and the MPCA. The indirect costs from delays would result in the loss of productivity in the case of private enterprises, and costs to taxpayers when public projects are involved. To reduce the likelihood of future litigation, the proposed rules are written to clearly comport with federal antidegradation regulations and associated EPA guidance, and they contain implementation procedures for specific regulated activities.

There are also indirect costs and consequences of not adopting the proposed rules related to the value of foregone alternatives which minimize degradation of high quality water. Without the rigorous review standard of the proposed rules it is possible that some alternatives will be overlooked. If overlooked alternatives would have favored water quality improvements, some loss of resource value (i.e., cost) would result. On the other hand, if alternatives that would have favored local economic development are overlooked, there would be a resulting economic loss.

Adopting the proposed rules will reduce the risk of impairing high quality water and save the costs associated with water quality restoration. A water body is "impaired" if it fails to meet one or more water quality standards. Section 303(d) of the CWA (Exhibit 13) requires states to:

- assess all waters of the state to determine if they meet water quality standards;
- list waters that do not meet standards and update the list every even-numbered year;
- conduct TMDL studies in order to set pollutant reduction goals needed to restore water quality

Federal and state regulations also require implementation of restoration measures to meet TMDLs. MPCA responsibilities include monitoring and assessing water quality, listing impaired waters, and conducting TMDLs in Minnesota. The MPCA also coordinates closely with other state and local agencies on restoration activities.

Monitoring shows about 40% of Minnesota's lakes and streams are currently impaired for conventional pollutants, a level comparable to other states. According to MPCA's 2014 Proposed Impaired Waters List, (Exhibit 131)[131] the number of all impaired waters in Minnesota now totals 4,114. Some of the water bodies are listed for more than one pollutant or reach. The number of impairments includes those in need of TMDLs and those with EPA-approved TMDLs for waters that have not yet been restored. The vast majority of impairments, greater than 99%, are human-caused.

The CWA requirement for states to restore impaired waters has significant cost implications. A recent legislative report provides some perspective:

> *The U.S. has spent an average of $1 billion per year in stream restoration since 1990. In Minnesota, implementation plans for just 13 approved TMDL projects (out of a total of 76 projects approved so far) estimated approximately $530 million in restoration needs. Restoration needs for the South Metro Mississippi River and Minnesota River TMDLs are anticipated to total hundreds of millions of dollars alone.* Biennial Report of the Clean Water Council, Final Report, (2013), p. 17 (Exhibit 132)[132]

The requirement to restore impaired waters may have a direct impact on economic growth. Until a TMDL is completed, the CWA prohibits any new or expanded discharge to an impaired water, if the discharge negatively affects the impairment. This means if TMDLs do not move forward, communities and businesses may find themselves unable to expand.

The proposed rules reduce the risk of impairment by:

- Removing the current significance thresholds. The current thresholds are not based on the consumption of available assimilative capacity and the rules do not contain a cumulative cap to account for multiple impacts from activities that fall below the thresholds. As a result, there is a potential risk that multiple activities falling below the thresholds may cause water quality impairments.
- Requiring applicants for individual authorizations to provide an assessment of existing water quality and impacts to that quality as a result of the proposed activity. If degradation is allowed and existing water quality is not well understood, there is a real risk of causing water quality impairments.

Although adopting and implementing the proposed rules will reduce the risk of impairments, they will not entirely prevent them nor eliminate costs associated with restoration. The reason for this is that antidegradation provisions are enforceable through the issuance of control documents governing regulated sources – sources which contribute to only a portion of total water quality degradation. For example, the contribution from unregulated nonpoint sources for bacteria and turbidity degradation is very high compared to regulated point sources. Conversely, the sources of some parameters, such as polychlorinated biphenyls, come almost exclusively from regulated activities.

Determining the relative contributions from point and nonpoint sources for most parameters statewide is very difficult and has not been thoroughly studied. One exception, which has significant contributions from both sources, is phosphorus – the primary nutrient causing eutrophication of Minnesota's surface waters. Under average flow conditions, the point source total phosphorus contribution represents 31% of the loading to surface waters, statewide, whereas nonpoint sources contribute 59%. (Detailed Assessment of Phosphorus Sources to Minnesota Watersheds, Barr Engineering Company, February, 2004, p. 248 (Exhibit 133)[133]) There has also been recent interest in characterizing nitrogen loading to Minnesota's surface waters. In one study, the MPCA estimated 73% of statewide nitrogen entering surface waters is from cropland sources and 9% is from wastewater point sources, with several other sources adding the other 18%. (Nitrogen in Minnesota Surface Waters, Minnesota Pollution Control Agency, June 2013, p. 20 (Exhibit 134)[134])

Determining accurate costs of restoring water quality if the rules are not adopted is difficult because of an incomplete understanding of the relative contribution of degradation from regulated sources. However, given the overall high cost of restoration, preventing or reducing the contribution from regulated sources will result in significant cost savings.

In summary, the consequences of not adopting the proposed rule are:

- legal challenges and associated costs to all parties;
- delays in permit issuance, resulting in lost opportunity for municipal and industrial dischargers;
- inefficiency in administration of the antidegradation program and in the process of obtaining public input;
- environmental damage;
- cost of remediation of impaired waters.

F. Assessment of any differences among the proposed rules and existing federal regulations

The MPCA is required to provide:

> *An assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference.* Minn. Stat. § 14.131 *(7)*

Additionally:

> *The Commissioner of the Pollution Control Agency shall include, in any statement of need and reasonableness for rules to adopt air quality or hazardous waste or water quality standards, an analysis of proposed standards that are more stringent than similar federal standards, including justification for why the standards are needed to protect public health and the environment,…* Minnesota Executive Order 11-04*, January 24, 2011* (Exhibit 135)[135]

Federal antidegradation regulations at 40 CFR § 131.12 are quite broad and states and authorized tribes have a great deal of discretion in implementing the requirements. Attachment 5 provides a detailed comparison of federal regulations with the standards found in the proposed rules. To summarize, the proposed rules are not more stringent that federal regulatory requirements, but provide detail on how those requirements will be implemented.

Minnesota, like a number of other states, has elected to provide a fourth level of protection more stringent than Tier 2, yet less stringent than Tier 3. This extra Tier in states' antidegradation policy (referred to as Tier 2.5 in some states) is not found in 40 CFR 131.12, but its inclusion in rule is permissible under section 510 of the CWA (Federal Water Pollution Control Act, 33 U.S.C. § 1370 (1972, as amended) (Exhibit 74). In Minnesota, this level of protection is provided to water bodies specifically designated in the current rule as restricted ORVWs (Minn. R. 7050.0180, subp. 6 through subp. 6b). The MPCA is not proposing to add or remove restricted ORVWs in this rulemaking. Like the prohibited category of ORVWs, restricted waters possess extraordinary or unique characteristics. Whereas prohibited waters are designated because of outstanding water quality, some

restricted ORVWs are designated for reasons other than their exceptional water quality. The proposed rules do not fundamentally change how restricted ORVWs are currently protected, but provide clarification. Section 5.D.6. provides additional detail on how restricted ORVWs will be protected.

The MPCA does not consider maintaining the level of protection afforded to restricted ORVWs as being more stringent than federal regulations. This is because the level of protection for restricted ORVWs is less stringent than Tier 3 protection of prohibited ORVWs (or, as stated in federal regulations – outstanding national resource waters). Maintaining restricted ORVWs protection provides reasonable protection of waters which may not have been designated strictly because of excellent water quality.

G. Assessment of the cumulative effect of the proposed rules with other federal and state regulations

The MPCA is required to provide:

> *An assessment of the cumulative effect of the rule with other federal and state regulations related to the specific purpose of the rule.* Minn. Stat. § 14.131 *(8)*

The specific purpose of antidegradation is "*to achieve and maintain the highest possible quality in surface of waters of the state*." Proposed Minn. R. 7050.0250. This broad goal aligns with those of the CWA and with federal water quality regulations, including antidegradation policy. The proposed rules improve the means by which the MPCA carries out its duties (see Minn. Stat. § 115.03). These improvements are accomplished by the proposed rules' reasonable standards and the inclusion of implementation procedures to address the various activities the MPCA regulates. Improving Minnesota's antidegradation provisions will, in turn, improve protection of the State's water quality. As addressed in Section 8.D., there will be costs associated with complying with the proposed rules, but there are also overall economic benefits to maintaining water quality as described in Section 4.A. If the proposed rules are implemented, the MPCA believes that long-term cost savings will result.

The MPCA has made an effort to ensure that the proposed rules do not add duplicative requirements. In many cases, the information and assessment required for an antidegradation review is already required by another program (e.g., publicly funded project, ACE, etc.). This may seem like a duplication of effort, but the MPCA is clear that even though the information may be used in different ways, the requirements are not cumulative. No other program conducts antidegradation reviews. The PFA, for example, may require information about alternatives to the proposed project, and that same information may also be used to meet the alternatives assessment requirement for the antidegradation review. But the two reviews are not cumulative, the outcome of the reviews are entirely separate. Using the same information to complete two types of reviews is not a cumulative effect; it is a reflection of the MPCA's efforts to make the most efficient use of the applicant's resources. Regarding section 401 certifications of 404 permits, the proposed rules provide compatibility with the ACE permitting processes. The MPCA is the CWA delegated authority to develop, implement and enforce water quality standards, including antidegradation requirements. As such, the ACE relies on the MPCA's section 401

actions to make sure that the issuance of CWA section 404 permits does indeed comply with those standards.

H. Consideration of legislative policy supporting performance-based regulatory systems

The MPCA is required to:

> *Describe how the agency, in developing the rules, considered and implemented the legislative policy supporting performance-based regulatory systems set forth in section 14.002.* Minn. Stat. § 14.131

Minnesota statutes state that:

> *…the legislature finds that some regulatory rules and programs have become over prescriptive and inflexible, thereby increasing costs to the state, local governments, and the regulated community and decreasing the effectiveness of the regulatory program. Therefore, whenever feasible, state agencies must develop rules and regulatory programs that emphasize superior achievement in meeting the agency's regulatory objectives and maximum flexibility for the regulatory party and the agency in meeting those goals.* Minn. Stat. § 14.002

The MPCA's mission is to work with Minnesotans to protect, conserve and improve our environment and enhance our quality of life. The proposed rules emphasize superior achievement in meeting this goal by providing a publically-informed decision-making process for the protection and sustainable use of the state's water quality. The MPCA is making an effort to be flexible and open minded in the implementation of regulatory programs and to seek solutions to problems in an atmosphere of freedom to "think outside the box." These efforts are consistent with the spirit of this statute.

There are strong and legitimate pressures to, on one hand, make rules very precise and prescriptive, and, on the other hand, to make them flexible and open to interpretation. Finding the balance in rulemaking between the ends of the prescriptive/flexible spectrum is not always easy; the balance the MPCA finds can be unsatisfactory to various outside parties. For some, flexibility means inconsistent application of rules and the granting of too much authority to the MPCA. To others, too much prescriptiveness means inability to deal with case-by-case variability and being forced into untenable bureaucratic positions and endless red tape. Also the office of the Revisor of Statutes, appropriately, applies certain conventions to rules that places limits on language that is deemed too flexible or "open ended." Finally, not all rules or provisions in rules require, or should have, the same level of prescriptiveness. A reasonable middle ground between the two ends of this spectrum varies depending on the proposed amendment and part of the rule being revised. In the rules being proposed, the MPCA has found a reasonable balance between detail and flexibility.

Federal regulations at 40 CFR § 131.12 lay out the minimum requirements that states must include in their antidegradation provisions. The states, however, are provided a certain degree of latitude in how these requirements are to be implemented.

The proposed rules provide flexibility for the regulated community and the MPCA in the following ways:

- Antidegradation standards

The proposed rules contain two sets of antidegradation standards. One set of standards applies to activities where impacts to existing water quality can reasonably be quantified and the other applies to activities where such assessments are not reasonable.

- Exemptions from antidegradation procedures

  The proposed rules exempt activities that impact Class 7 waters (provided that uses are maintained and downstream high water quality and ORVWs are protected) and activities that are temporary and limited in nature.

- Alternatives analysis

  Applicants seeking individual authorizations are provided the opportunity to evaluate and identify prudent and feasible pollution control measures that minimize degradation. This same flexibility is also provided for general authorizations.

- Social and economic justification

  Applicants seeking an individual authorization are provided the opportunity to demonstrate that degradation of high water quality is important for economic or social development. Likewise, in conducting an antidegradation review for a general authorization, the MPCA is provided the flexibility to demonstrate the need to increase loading to high quality waters for reasons of economic or social development.

The range of changes the MPCA is proposing in these rules represents a reasonable balance between detail and flexibility; that "balance" appropriately varies depending on the particular provision. The MPCA believes that the examples provided above are consistent with the intent of Minn. Stat. § 14.002.

I. Rules requiring local implementation

The MPCA is required to:

> *…determine if a local government will be required to adopt or amend an ordinance or other regulation to comply with a proposed agency rule.* Minn. Stat. § 14.128 *(1)*

The proposed rules will not directly require a local government to adopt or amend an ordinance. Antidegradation is not administered through local governments. Therefore, it is not necessary to incorporate the antidegradation requirements into local codes and the proposed amendments do not specify that certain activities must be undertaken to meet antidegradation standards. However, it may happen that in order for a community to demonstrate that it can meet the permit conditions that ensure that waters will not be degraded, changes to local ordinances may be needed. An example of this is for general NPDES stormwater permits. Communities that can meet the conditions of the general NPDES stormwater permit will not need to change any ordinances to meet the antidegradation conditions of that permit. However, if the community is not able to meet the conditions of the general NPDES stormwater permit, then it may need to make ordinance changes. These may be as simple as adopting an ordinance that prohibits raking leaves into the street or may require more extensive redesign of the stormwater system. Any changes a community must make to its ordinances will be a consequence of the permit conditions, not a direct consequence of the proposed amendments.

It is important to note that local government units subject to NPDES general permits will have the opportunity to provide comment on the MPCA's antidegradation review and determinations through public participation procedures specified in Minn. R. ch. 7001. Local government units are strongly encouraged to engage in discussions with the MPCA during the development of permits and before the formal request for comments.

Other than local government units affected by the antidegradation procedures for NPDES-regulated stormwater activities, the MPCA has determined that the rules proposed will not have any effect on local ordinances or regulation.

J. Determination regarding whether the cost of complying with the proposed rules in the first year after the rules take effect will exceed $25,000

Minnesota's Administrative Procedures Act was amended in 2005 to include a section on potential first-year costs attributable to proposed rule amendments. This amendment requires an agency to:

> *…determine if the cost of complying with a proposed rule in the first year after the rule takes effect will exceed $25,000 for: (1) any one business that has less than 50 full-time employees; or (2) any one statutory or home rule charter city that has less than ten full-time employees.* Minn. Stat. § 14.127*, subd. 1*

Based on past permitting history the MPCA anticipates that an additional 33 applicants per year will be required to submit antidegradation assessments (Table 3 and associated discussion in Section 8.D.). The MPCA expects at least one small business (i.e., one with less than 50 full-time employees) or one small city (i.e., statutory or home rule charter city with less than ten full-time employees) will be among these applicants.

Data compiled by the Minnesota Department of Employment and Economic Development and MPCA's DELTA database indicate that in 2012 there were 263 cities, townships and unorganized territories with less than 10 employees and which had NPDES permit coverage for wastewater discharges (see Attachment 6) If a city chooses to build a new facility or upgrade its existing facility resulting in an expanded loading, antidegradation procedures will be required. The MPCA does not know in advance which cities will ask for new or expanded loading during the proposed rule's first year of effect.

Data on small business firms are not as readily available. The Minnesota Department of Employment and Economic Development does not report employment information from individual firms. Small businesses comprise the largest number of all firms in all economic sectors from which the Census Bureau collects employment data. (U.S. Census Bureau website, County Business Patterns for Minnesota). The MPCA is able to identify certain economic sectors that are likely to have wastewater discharges (e.g., food processing). Although the data show the proportion of small firms that comprise an economic sector, it does not allow the MPCA to identify with any accuracy the number of small firms that might trigger antidegradation procedures.

The probable costs to the regulated community of complying with the proposed rules are addressed in Section 8.D. The type of small businesses or cities that may be impacted are those applying for NPDES permits, as well as those that require section 401 actions on

federal licenses and permits. The costs to these businesses and cities will be associated with: 1) the preparation of antidegradation assessments (for individual authorizations); 2) the implementation of pollution control measures that minimize high water quality degradation; and 3) the preparation of comments on the MPCA's preliminary antidegradation determinations.

1) If an activity that triggers antidegradation procedures requires an individual authorization, the applicant will be required to provide an antidegradation assessment to the MPCA. As discussed in Section 8.D., the MPCA estimates the average cost of a typical assessment at $64,751. This is likely a high estimate for wastewater facilities because it includes costs that are intrinsic to facility planning, which will be conducted regardless of the antidegradation review. Also, this estimate is high because new or expanding facilities for small cities will be less complex, and therefore the antidegradation assessments will be less costly, than for larger cities. Antidegradation assessment costs for applicants for CWA section 404 permits are also expected to be much less than the average assessment cost because that figure does not take into account cost sharing with the ACE permitting processes and requirements.

2) Costs may be incurred by small businesses and cities as a result of implementing prudent and feasible pollution control measures which minimize high water quality degradation. These costs cannot reasonably be estimated because decisions on how impacts will be minimized are situation-specific and will need to be determined through the antidegradation review process for each small entity. Also, because of the lengthy planning, review and construction phases, the MPCA cannot determine when a small business or city will actually incur costs associated with pollution control measures. The MPCA expects that very few actual costs will be incurred during the first year after adoption of the proposed rules. In most instances the costs of implementing pollution control measures will not be incurred until after the planning and review phases of the facility.

3) Costs may be incurred by small businesses and cities if a given small entity decides it wants to comment on the MPCA's preliminary determination. The actual cost of preparing those comments will vary depending on each situation. And again, the timing of these costs will depend on whether the business or city has triggered the need for a permit revision and therefore an antidegradation review. A small business or city may also wish to comment on preliminary determinations regarding proposed activities of other entities. The MPCA cannot make a reasonable estimate of how many small entities will prepare comments, whether those comments will be prepared in the first year after adoption of the proposed rules and the costs associated with the preparation of those comments.

In summary, the cost to any one small business or city in the first year after the proposed rules take effect may exceed $25,000. However, more specific analysis of which and how many small entities will be impacted, and the site-specific costs associated with preparing assessments, implementing pollution control measures and the preparation of comments on antidegradation determinations is not possible.

K. Assessment of any differences among the proposed rules, existing federal standards and similar standards in states bordering Minnesota and EPA Region 5 states

For rulemakings which propose changes to standards for water quality under Minn. Stat. ch. 115, the SONAR must include:

> *(1) an assessment of any differences between the proposed rule and:*
> *(i) existing federal standards adopted under the Clean Air Act, United States Code, title 42, section 7412(b)(2); the Clean Water Act, United States Code, title 33, sections 1312(a) and 1313(c)(4); and the Resource Conservation and Recovery Act, United States Code, title 42, section 6921(b)(1);*
> *(ii) similar standards in states bordering Minnesota; and*
> *(iii) similar standards in states within the Environmental Protection Agency Region 5; and*
> *(2) a specific analysis of the need and reasonableness of each difference.*
> Minn. Stat. § 116.07 (2)(f)

An assessment between the proposed rules and federal regulatory requirements is provided in Section 8. F.

The process of comparing the proposed antidegradation standards and requirements to those of border and EPA Region 5 states is complicated because the wide range of policies and intricacies of each state's water quality standards program – as well as values, priorities and regulatory structure that are unique to each state. It is not as simple as comparing one numeric water quality standard to another. Although there are some differences between the proposed rules and other states' rules in how federal requirements are implemented, the proposed requirements do not represent a significant departure from requirements in other states. Attachment 7 provides a detailed comparison of the proposed requirements to those found in border and EPA Region 5 states. The antidegradation rules of EPA Region 5 and border states that were evaluated are:

- Illinois (IL), Illinois Administrative Code, Title 35, Section 302.105, (35 IAC 305.105) effective December 20, 2002 (Exhibit 136)[136]
- Indiana (IN), Indiana Administrative Code, Title 327, Article 2, Section 1.3, (327 IAC 2-1.3) effective June 28, 2012 (Exhibit 94)
- Iowa (IA), Iowa Administrative Code, 567, Chapter 61.2(2), (567 IAC 61.2(2) effective February 16, 2011 (Exhibit 104) (Note that IA's implementation procedures (Iowa Antidegradation Implementation Procedure), (effective February 17, 2010) (Exhibit 103) are incorporated into rule by reference.)
- Michigan (MI), Michigan Administrative Code: Water Resources Protection -- Part 4. Water Quality Standards, R 323.1098, effective December 13, 1973, revised April 2, 1999 (Exhibit 137)[137]
- North Dakota (ND), North Dakota Administrative Code, 33-16-02.1, effective June 1, 2001 (Exhibit 138)[138]

- Ohio (OH), Ohio Administrative Code, 3745-1-05, effective March 1, 2011 (Exhibit 139)[139]
- South Dakota (SD), Administrative Rules of South Dakota (ARSD) 74:51:01:34, effective July 20, 1997 (Exhibit 140)[140]; ARSD 74:51:01:35, effective January 27, 1999 (Exhibit 141)[141]; ARSD 74:51:01:36, effective January 27, 1999 (Exhibit 142)[142]; ARSD 74:51:01:37, effective January 31, 1993 (Exhibit 143)[143], ARSD 74:51:01:37.01, effective September 13, 2004 (Exhibit 144)[144]; ARSD 74:51:01:38, effective July 1, 1996 (Exhibit 145)[145], ARSD 74:51:01:39, effective July 20, 1997 (Exhibit 146)[146]
- Wisconsin (WI), Water Quality Standards for Wisconsin Surface Waters, Chapter NR 102, effective October 1, 1973 (Exhibit 147)[147]; Water Quality Antidegradation, Chapter NR 207, effective September 1, 1997 (Exhibit 148)[148]

The following aspects are common among the proposed rules and most (and in some cases, all) other states' rules:

- Antidegradation standards are applied through control documents regulating activities subject to the CWA.
- Antidegradation standards apply to surface waters of the state.
- Antidegradation procedures are triggered by net increases in loading.
- Exemptions to antidegradation procedures are provided.
- High water quality is determined on a parameter-by-parameter basis.
- The determination of whether a proposed activity is necessary is made through an analysis of reasonable alternatives that avoid or minimize degradation.
- The determination of whether a proposed activity is important is made through the evaluation of changes to a wide range of economic and social indicators. Like the proposed rules, other state rules do not include a threshold by which importance is ultimately determined.
- Public participation in decisions regarding the treatment of high water quality occurs through existing permitting procedures.

Two aspects that vary considerably among states' rules are: 1) exemptions for *de minimis* impacts to high water quality; and 2) the application of antidegradation requirements through the issuance of general permits.

1. Exemptions for de minimis impacts to high water quality

   Some states' rules provide exemptions from Tier 2 procedures based on *de minimis* impacts to high water quality. If it is determined that the proposed activity would fall below a predetermined level or significant threshold, that activity would be considered not to be significant (i.e., *de minimis*) and a Tier 2 procedures would not be required. Environmental Protection Agency guidance (Tier 2 Antidegradation Reviews and Significance Thresholds, U.S. EPA memorandum from Ephraim S. King (Office of Science and Technology) to Water Management Division Directors, Regions 1-10, (2005) (Exhibit 55) recommends that "*significant*" lowering of water quality be defined in terms of a demonstrated projected lowering of water quality, specifically the available assimilative capacity of a water body. The memorandum defines "*available assimilative capacity*" as

"…the difference between the applicable water quality criterion for a pollutant parameter and the ambient water quality for that pollutant parameter where it is better than the criterion…" The memorandum supports the use of significant threshold set at 10% of available assimilative capacity, above which an activity would be required to receive "*a full tier 2 antidegradation review.*"

The proposed rule does not provide a *de minimis* exemption for reasons given in Section 5.G.1.b.

Illinois, Iowa, and South Dakota also do not provide this exemption. In some, but not all cases, Michigan and Indiana consider proposed discharges that consume less than 10% of the available assimilative or loading capacity to be *de minimis*. Indiana provides some *de minimis* exemptions for heat-related impacts.

In North Dakota, proposed discharges to Category 1 waters covered under nationwide permits are not considered significant when they would:

- lower the ambient water quality by less than 15%;
- reduce available assimilative capacity by less than 15%;
- increase the loading by more than 15%

In the determination of significance, North Dakota also considers the:

- nature, persistence, and potential effects of the parameter;
- potential for cumulative effects;
- predicted impacts to aquatic biota;
- degree of confidence in any modeling techniques utilized

Wisconsin determines a proposed discharge to be significant in one of two ways:

- The proposed new or increased discharge, along with all other new or increased discharges after March 1, 1989, taking into account any changes in assimilative capacity, results in an expected level of an indicator parameter in the water of either of the following:
    - greater than one–third multiplied by the assimilative capacity for any indicator parameter other than dissolved oxygen;
    - greater than the sum of the existing level multiplied by two–thirds and the water quality criterion multiplied by one–third for dissolved oxygen
- For a discharge to the Great Lakes system, the mass loading of any substance in the proposed new or increased discharge having a bioaccumulation factor greater than 1000 would be increased.

Ohio's determination of significance is more complex and is based on the surface water classification. For general high quality waters, any net increase in the discharge of a regulated pollutant that is less than 10% of the wasteload allocation to maintain water quality standards is not considered significant, provided the proposed lowering of water quality does not exceed eighty per cent of the wasteload allocation. For superior high quality waters, other than Lake Erie, and outstanding state waters, any net increase in the discharge of a regulated pollutant that results in less than a five per cent change in the ambient water quality concentration is not considered significant, provided the proposed lowering of water quality does not exceed the portion of the remaining

available assimilative capacity. For Lake Erie, any net increase in the discharge of a regulated pollutant that is less than ten per cent of the water body pollutant assimilative capacity is not considered significant. For the discharge of primarily sanitary wastewaters, only ammonia-nitrogen is evaluated is used to determine significance.

2. Application of antidegradation requirements through the issuance of general permits

The proposed rules include specific antidegradation procedures for general permits. Under these procedures the MPCA conducts the antidegradation review during the development of the general permit. Like reviews for activities covered under individual permit, the public is given the opportunity to comment on the MPCA's review. Antidegradation review of individual activities covered under a general permit is not required as long as the terms and conditions of the permit are met.

North Dakota, South Dakota and Wisconsin rules do not provide specifics on how antidegradation is applied to general permits. In Illinois and Ohio, activities covered under general permits are not required to undergo review. In Indiana, the regulatory agency conducts the review of NPDES general permits and activities covered under that permit are not subject to additional review. In Michigan, (except for Outstanding State Resource Waters, or as the state determines on a case-by-case basis) new or increased loadings authorized by certificates of coverage under NPDES general permits and notices of coverage for stormwater from construction activities are not required to undergo review.

Iowa's rules are similar to what is being proposed here. In that state, activities authorized by general permits are not required to undergo a Tier 2 antidegradation review as part of the Notice of Intent process. However, new and reissued general permits must be evaluated to consider the potential for degradation as a result of the permitted discharges. All NPDES general permits require that permit conditions be met, including the general requirement that permitted discharges must ensure that water quality standards are not violated and BMPs contained in the permit are implemented. Compliance with the terms of the general permits issued by the department is required to maintain authorization to discharge under the general permit. Discharges covered by a general permit that cannot comply with general permit conditions or antidegradation requirements will be required to seek coverage under an individual permit.

L. Consideration of economic factors affecting the feasibility and practicality of the proposed rules

Minnesota statutes require that:

> *In exercising all its powers the pollution control agency shall give due consideration to the establishment, maintenance, operation and expansion of business, commerce, trade, industry, traffic, and other economic factors and other material matters affecting the feasibility and practicability of any proposed action, including, but not limited to, the burden on a municipality of any tax which may result therefrom, and shall take or provide for such action as may be reasonable, feasible, and practical under the circumstances.* Minn. Stat. § 116.07, *subd. 6*

The reader is referred to Sections 8.A., 8.B., 8.C., 8.D., 8.E., 8.I., and 8.J. for detailed discussions on how the MPCA considered economic factors and other material factors in proposing these rules.

As discussed in Section 8.B.1., including control document-specific implementation procedures in the proposed rules brings to light the issue of which activities are subject to antidegradation requirements. Control document applicants, which in the past did not undergo nondegradation procedures because of the current rules' lack of clarity, may now need to submit antidegradation assessments and implement control measures that prudently and feasibly minimize degradation of high water quality. In particular this will affect applicants for federal licenses and permits requiring section 401 actions because they have not historically been subject to nondegradation requirements. The vast majority of federal licenses and permits are CWA section 404 dredge and fill permits for one-time impacts – not like renewing NPDES permits which govern discharges over time. The vast majority of section 404 permits are also granted to private interests, not public or municipal projects. It is therefore unlikely that the inclusion of control document-specific implementation procedures will create a tax burden on municipalities.

The proposed rules will increase costs to applicants seeking individual NPDES permits for wastewater discharges due to the removal of the significance threshold. This change will affect small municipalities wishing to build new facilities or expand existing ones. Costs associated with this change will include the preparation of antidegradation assessments and minimizing high water quality degradation, to the extent prudent and feasible. The cost of assessment preparation will be incurred only when applying for a new or expanding discharge. The MPCA estimates that an additional 14.3 applicants per year will be required to prepare assessments and the total annual costs for doing this work will be approximately $925,939 (see Section 8.D.2.d.(1)).. The cost of preparing individual assessments will likely be spread out over the time period from when a project is initiated to when a request is made to further increase loading.

The cost of prudently and feasibly minimizing high water quality degradation will be an on-going cost. Because the determination of which alternatives will minimize high water quality degradation is situation-specific and is made through the permitting process, it is difficult to accurately predict if there will be a tax burden to a given municipality and, if so, how much burden that might impose.

In summary, the MPCA recognizes that in general, the proposed amendments will result in costs to regulated entities, by requiring more antidegradation reviews and more complete development antidegradation reviews. There will also be very real economic benefits to the regulated entities and also to other entities associated with the protection of water resources by providing a more predictable and transparent process for antidegradation review. In addition, there will be general benefits to Minnesota by providing a more effective process for implementing antidegradation standards, which will improve the condition of water resources. The MPCA is sensitive to the economic challenges currently facing the state and strives to be as reasonable and flexible as possible in implementing its regulatory programs. However, it is essential that regulated activities comply with state and federal laws and that the quality of Minnesota's waters is protected for the benefit of all citizens, both now and in the future. It is neither prudent nor consistent with federal and state law to allow the removal of existing uses, unnecessarily degrade high water quality or degrade water quality necessary to maintain the exceptional characteristics of ORVWs.

9. Comments received

The MPCA received a number of comments in response to the published Requests for Comments (RFC) and at the public informational meetings. These comments came from a range of non-government interested parties, as well as the Minnesota Departments of Health, Agriculture and Natural Resources. All the comments received were considered in the drafting of the proposed amendments. The comments received in the pre-proposal rulemaking period can be generally grouped into the following areas:

- Comments identifying deficiencies in the existing program and supporting changes to address those deficiencies.
- Comments relating to the scope of the rulemaking, specifically regarding the application of nondegradation to unregulated activities.
- Comments relating to the protection of ORVWs.
- Comments relating to the determination of a baseline to establish existing water quality, especially as it relates to the protection of high water quality.
- Comments relating to economic effects, particularly regarding the development of antidegradation assessments to determine the necessity for lowering high water quality to accommodate important economic or social development.
- Comments relating to the implementation of antidegradation requirements through stormwater permits.

10. Conclusion

In this SONAR the MPCA has established the need for and the reasonableness of each of the proposed amendments to Minn. R. ch. 7001 and 7050. The MPCA has provided the necessary notifications and in this SONAR documented its compliance with all applicable administrative rulemaking requirements of Minnesota statute and rules. Based on the forgoing, the proposed amendments are both needed and reasonable.

12/17/2015
Date

John Linc Stine, Commissioner
Minnesota Pollution Control Agency

11. List of authors, witnesses, attachments and exhibits

A. Author

1. William Cole, Supervisor, Environmental Assessment and Outcomes Division, MPCA

B. Witnesses

The MPCA anticipates the following witnesses may testify in support of the proposed amendments:

1. William Cole , Supervisor, Environmental Assessment and Outcomes Division, MPCA
2. Jean Coleman, Attorney, MPCA
3. Carol Nankivel, Rule Coordinator, Resource Management and Assistance Division, MPCA
4. Katrina Kessler, Manager, Environmental Assessment and Outcomes Division, MPCA
5. David Bael, Economist, Environmental Assessment and Outcomes Division, MPCA
6. Catherine Neuschler, Supervisor, Resource Management and Assistance Division, MPCA
7. Scott Fox, Hydrologist, Municipal Division, MPCA

C. Attachments

Attachment 1. List of meetings with external parties

Attachment 2. Probable costs to the Minnesota Pollution Control Agency associated with adopting the proposed antidegradation rules

Sub-Attachments within Attachment 2.

Sub-Attachment 2a. Nondegradation reviews conducted by the Minnesota Pollution Control Agency between 2003 and 2012 for proposed new or expanded wastewater discharges

Sub-Attachment 2b. Internal MPCA memorandum of the projected number of antidegradation reviews for individual wastewater NPDES permits as a result of implementing the proposed antidegradation rules

Sub-Attachment 2c. Internal MPCA memorandum of the estimated time to conduct nondegradation reviews

Sub-Attachment 2d. Section 401 actions conducted by the Minnesota Pollution Control Agency from 2007 through 2012

Attachment 3. Internal MPCA memorandum of estimated cost of wastewater facility planning and its relationship to preparing antidegradation assessments under the proposed antidegradation rules

Attachment 4. Conducting antidegradation alternatives analyses for individual NPDES municipal wastewater permits - a suggested approach

Attachment 5. Comparison of federal antidegradation regulatory requirements with standards in the proposed antidegradation rules

Attachment 6. Minnesota cities, townships and unorganized territories with fewer than ten total employees and with NPDES wastewater permits in 2012

Attachment 7. Assessment of differences between the proposed antidegradation rules and similar standards in states bordering Minnesota and EPA Region 5 states

D. Exhibits

[1] Petition for Rulemaking to the Minnesota Pollution Control Agency, Petitioner: Minnesota Center for Environmental Advocacy (MCEA), April 30, 2007

[2] Minn. R. 7050.0180, Nondegradation for outstanding resource value waters. (1998)

[3] Minn. R. 7050.0185, Nondegradation for all waters. (2008)

[4] Technical Memorandum #1: Nondegradation Loading Assessment Evaluation and Recommendations for Selected Municipal Separate Storm Sewer Systems, Tetra Tech, Inc., August 20, 2007

[5] Technical Memorandum #2: Overview of State, Federal, and Judicial Guidance on Antidegradation, Tetra Tech, Inc., August 20, 2007

[6] Technical Memorandum # 3: Recommendations for Nondegradation Rulemaking, Tetra Tech, Inc., August 20, 2007

[7] Responses to Questions Raised in the Written Comments Received from Stakeholders Attending the Nondegradation Rulemaking Stakeholder Meetings, MPCA (2009)

[8] Proposed Antidegradation Rule and Implementation Changes, MPCA (2010)

[9] Draft Antidegradation Rule, MPCA (2011)

[10] Proposed Permanent Rules Relating to Antidegradation of State Waters, MPCA (2012)

[11] Draft Proposed Antidegradation Rules, 6/02/2014, MPCA (2014)

[12] Federal Water Pollution Control Act, 33 U.S.C. § 1251 (CWA section 101) (1972, as amended)

[13] Federal Water Pollution Control Act, 33 U.S.C. § 1313 (CWA section 303) (1972, as amended)

[14] Advanced Notice of Proposed Rulemaking, 63 Fed. Reg., 36741 (1998)

[15] Water Quality Act, Public Law 89-234 (1965)

[16] Compendium of Department of the Interior Statements on Non-degradation of Interstate Waters, U.S. Department of the Interior, Federal Water Pollution Control Administration, Office of the Secretary (1968)

[17] 40 CFR Part 130, Policies and Procedures for Continuing Planning Process (Federal Register, Vol. 40, No. 230, pp. 55334, 1975)

[18] 40 CFR § 130.17 Water Quality Standards (1976)

[19] 40 CFR § 131.12, Antidegradation policy (1983)

[20] 40 CFR § 131.12, Antidegradation policy and implementation methods (2015)

[21] Water Quality Standards Handbook, Second Edition, U.S. EPA Chapter 4 (Antidegradation) (1994)

[22] WPC 1, Classification and Standards for the Mississippi River and Tributaries from the Rum River to the Upper Lock and Dam at St. Anthony Falls (1963)

[23] WPC 2, Classification and Standards for the Mississippi River and Tributaries from the Upper Lock and Dam at St. Anthony Falls to the Outfall of the Minneapolis – St. Paul Sanitary District Sewage Treatment Plant (1963)

[24] WPC 3, Classification and Standards for the Mississippi River and Tributaries from the Outfall of the Minneapolis – St. Paul Sanitary District Sewage Treatment Plant to Lock and Dam No. 2 Near Hastings (1963)

[25] WPC 14, Criteria for the Classification of the Intrastate Waters of the State and the Establishment of Standards of Quality and Purity (1967)

[26] WPC 15, Criteria for the Classification of the Interstate Waters of the State and the Establishment of Standards of Quality and Purity (1967)

[27] WPC 15, Supplement, Criteria for the Classification of the Interstate Waters of the State and the Establishment of Standards of Quality and Purity (1969)

[28] WPC 14(a)(8), Criteria for the Classification of the Intrastate Waters of the State and the Establishment of Standards of Quality and Purity, Non-Degradation. (1973)

[29] WPC 15(a)(7), Criteria for the Classification of the Interstate Waters of the State and the Establishment of Standards of Quality and Purity, Non-Degradation. (1973)

[30] 6 MCAR § 4.8014, Criteria for the Classification of the Intrastate Waters of the State and the Establishment of Standards of Quality and Purity (1982)

[31] 6 MCAR § 4.8015, Criteria for the Classification of the Interstate Waters of the State and the Establishment of Standards of Quality and Purity (1982)

[32] Minn. R. 7050.0180, Nondegradation policy (1984)

[33] Statement of Need and Reasonableness, In the matter of the proposed Revision of 6 MCAR §§ 4.8014 and 4.8024 and Proposed Repeal of 6 MCAR §§ 4.8015 and 4.8025, Relating to the Standards and Classification of Waters of the State, MPCA (1984)

[34] Letter from Valdas V. Adamkus, Regional Administrator, EPA Region 5, to Thomas Kalitowski Executive Director, MPCA (March 12, 1985)

[35] Letter from Charles H. Sutfin, Director, Water Division, EPA Region 5, to Barry Schade, Director, Division of Water Quality, MPCA (May 17, 1985)

[36] Minn. R. 7050.0180, Nondegradation for outstanding resource value waters (1988)

[37] Minn. R. 7050.0185, Nondegradation for all waters (1988)

[38] Guidance Manual for Applying Nondegradation Requirements for All Waters (Non-ORVW) in Minnesota, MPCA (1988)

[39] Guidance Manual for Applying Nondegradation Requirements on Outstanding Resource Value Waters in Minnesota, MPCA (1988)

[40] Letter from Charles H. Sutfin, Director, Water Division, EPA Region 5, to Gerald L. Willet, Commissioner, MPCA (March 23, 1989)

[41] Letter from Charles H. Sutfin, Director, Water Division, EPA Region 5, to Gerald L. Willet, Commissioner, MPCA (September 1, 1989)

[42] Minn. R. 7050.0180, Nondegradation for outstanding resource value waters (1990)

[43] Minn. R. 7050.0185, Nondegradation for outstanding resource value waters (1994)

[44] Minn. R. 7050.0185, Nondegradation for all waters (1994)

[45] Minn. R. 7052.0300 through Minn. R. 7052.0330 (Nondegradation rules for the Lake Superior basin (1998)

[46] Notice of Approval of the State of Minnesota's Submission Pursuant to Section 118 of the Clean Water Act and Water Quality Guidance for the Great Lakes System, 65 Fed. Reg. 48517 (2000)

[47] Minn. Stat. § 115.03, Powers and duties. (2014)

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Attachment to the Statement of Need and Reasonableness: In the Matter of Proposed Revisions of Minnesota Rules ch. 7050, Relating to Nondegradation and minor supporting changes to Minnesota Rules ch. 7001; Repeal of Minnesota Rules 7050.0180 (Nondegradation for Outstanding Resource Value Waters) and Minnesota Rules 7050.0185 (Nondegradation for All Waters); Proposed Addition of New Rules, Minnesota Rules 7050.0250 through 7050.0335 (Antidegradation), Minnesota Pollution Control Agency (MPCA)

Attachment 1. List of meetings with external parties

Date	Interested Party/Parties or Stakeholder Meeting	Location	Major Topic(s)
1/29/07	Stakeholders in general	*State Register*	Notice of rulemaking
5/29/07	Stakeholders in general	*State Register*	Notice of rulemaking
5/28/08	Bonestroo, Inc.	Bonestroo Offices, St. Paul	General overview of federal antidegradation requirements, rulemaking update
6/5/08 (AM)	Opening Stakeholder Meeting	Dakota Lodge, West St. Paul	Issue Paper 1. Introduction to Nondegradation Issue Paper 2. To which activities does nondegradation apply? Issue Paper 3. What is tier 2 protection of high quality waters?
6/5/08 (PM)	Opening Stakeholder Meeting	Minnesota Pollution Control Agency (MPCA) Offices, St. Paul	Same as above
6/9/08	Opening stakeholder Meeting	MPCA Offices, Rochester	Same as above
6/11/08	Opening Stakeholder Meeting	MPCA Offices, Duluth	Same as above
6/25/08	Minnesota Center for Environmental Advocacy	MPCA Offices, St. Paul	Rulemaking update
6/25/08	Minnesota Cities Stormwater Coalition (MCSC)	MPCA Offices, St. Paul	Challenges of applying antidegradation provisions to NPDES-permitted stormwater discharges, Minimal Impact Design Standards (MIDS)
7/29/08	Second Stakeholder Meeting	MPCA Offices, Rochester	Issue Paper 4. What triggers a nondegradation review of potential impacts to high quality waters? Issue Paper 5. Nondegradation Review: alternatives analysis, economic and social justification, intergovernmental cooperation and public participation.
7/30/08	Second Stakeholder Meeting	Dakota Lodge, West St. Paul	Same as above

Date	Interested Party/Parties or Stakeholder Meeting	Location	Major Topic(s)
8/1/08	Second Stakeholder Meeting	MPCA Offices, Brainerd	Same as above
9/5/08	MCSC	MPCA Offices, St. Paul	Minimal Impact Design Standards
9/25/08	Third Stakeholder Meeting	MPCA Offices, Duluth	Issue Paper 6. What are the best ways to describe impacts on receiving waters? Issue Paper 7. How are baseline conditions used in the assessment of impacts on receiving waters?
9/29/08	Third Stakeholder Meeting	MPCA Offices, Rochester	Same as above
9/30/08	Third Stakeholder Meeting	Dakota Lodge, West St. Paul	Same as above
10/30/08	Minnesota Environmental Science and Economic Review Board (MESERB)	Holiday Inn, St. Cloud	Rules update
1/26/09	Fourth Stakeholder Meeting	MPCA Offices, Duluth	Issue Paper 8. How should nondegradation be applied to NPDES-permitted stormwater activities?
1/30/09	Fourth Stakeholder Meeting	Dakota Lodge, West St. Paul	Same as above
2/11/09	Surface Water Monitoring and Standards (SWiMS) meeting	Chicago, IL	Rulemaking update
3/10/09	Stormwater stakeholders	MPCA Offices, St. Paul	"Options to Address Important Antidegradation Issues Related to NPDES-Permitted Stormwater Activities", presented at: Stakeholder Meeting for Revisions to Rules Governing Antidegradation, Issues Related to Regulated Stormwater Activities
3/25/09	Wastewater Operations Conference	Brooklyn Park, MN	Rulemaking update
6/8/09	Minnesota Department of Natural Resources (MDNR)	MPCA Offices, St. Paul	Check the status of the MN DNR Shoreland Rules revision and update the MN DNR on MPCA's Nondegradation Rule revision.
6/9/09	Fifth Stakeholder Meeting	MPCA Offices, Rochester	Issue Paper 9. How should cumulative impacts be addressed? Issue Paper 10. How should Outstanding Resource Value Waters be protected?
6/10/09	Fifth Stakeholder Meeting	MPCA Offices, Duluth	Same as above
6/12/09	Fifth Stakeholder Meeting	Dakota Lodge, West St. Paul	Same as above
9/10/09	Environmental Protection Agency (EPA) Webcast: Water Quality Standards	Webcast from Washington, D.C. and MPCA Offices, St. Paul	Presented "Revising Minnesota's Antidegradation Provisions"
11/12/09	Conference on the Environment	Brooklyn Park, MN	Presented "Antidegradation Rulemaking Update"
12/1/09-	Antidegradation	Anchorage, AK	Presented "Antidegradation: Minnesota Perspectives". Discussion regarding states'

Date	Interested Party/Parties or Stakeholder Meeting	Location	Major Topic(s)
12/5/09	Implementation Conference		implementation of antidegradation.
2/10/10	Water and Watersheds Meeting	MPCA Offices, St. Paul	Presented "Antidegradation Rulemaking Update"
4/28/10–4/29/10	EPA Region 5 Water Directors Meeting	Chicago, IL	Presented "MPCA Nondegradation Rule Revision"
5/3/10	MDNR	MPCA Offices, St. Paul	Discussed how the MDNR's Public Waters relates to antidegradation protection
6/3/10	Minnesota Center for Environmental Advocacy (MCEA)	MPCA Offices, St. Paul	Discussed options for making the determination of social and economic importance in antidegradation decisions to lower high water quality. Provided an update on the rule revision.
6/18/10	Minimal Impact Design Standards (MIDS) Work Group	MPCA Offices, St. Paul	Presented "Antidegradation and Minimal Impact Design Standards" which explained MPCA's perspective on how antidegradation may or may not be applied through MIDS.
7/15/10	Minnesota Stormwater Steering Committee	Bonestroo Offices, St. Paul	Presented "Antidegradation and Minimal Impact Design Standards" which explained MPCA's perspective on how antidegradation may or may not be applied through MIDS.
7/16/10	MCSC	MPCA Offices, St. Paul	Provided update on rule revision, with particular emphasis on applying antidegradation to regulated stormwater discharges.
7/16/10	MIDS Work Group	MPCA Offices, St. Paul	Follow up presentation to the 7/18/10 meeting.
7/27/10	Nondegradation Rulemaking Stakeholders	Nondegradation rulemaking Web page	Solicited comments on three documents posted on the nondegradation rulemaking Web page. The documents outlined proposed changes to the current nondegradation rules and implementation methods.
9/8/10	Nondegradation Rulemaking Stakeholders	Nondegradation rulemaking Web page	Follow-up request for the three documents post on the nondegradation rulemaking Web page. The documents outlined proposed changes to the current nondegradation rules and implementation methods.
9/23/10	MCEA	MPCA Offices, St. Paul	Provided update on rule revisions.
10/20/10	Minnesota Water Resources Conference	River Center, St. Paul	Provided update on rule revisions.
11/15/10	Coon Creek Watershed District	Coon Creek Watershed District Offices, Blaine	Provided update on rule revisions.
12/7/10	Minnesota Interagency Wetland Group	MPCA Offices, St. Paul	Provided update on rule revisions.
3/10/11	Barr Engineering	Barr Engineering Offices, Minneapolis	Provided update on rule revisions.

Date	Interested Party/Parties or Stakeholder Meeting	Location	Major Topic(s)
5/25/11	Nondegradation Rulemaking Stakeholders	Nondegradation rulemaking Web page	Solicited comments on draft rules posted on the nondegradation rulemaking Web page.
9/12/11	Minnesota Department of Agriculture (MDA)	MPCA Offices, St. Paul	Provided update on rule revisions.
12/16/11	MIDS Work Group	MPCA Offices, St. Paul	Provided MPCA's thoughts on the linkage between MIDS and antidegradation
1/10/12	MDNR	MPCA Offices, St. Paul	Discuss linkage between MDNR's listing of scientific and natural areas and fens with MPCA's listing of ORVWs
9/10/12	General stakeholder meeting	MPCA Offices, St. Paul	Overview of most-recent draft rules and opportunity for discussion
10/1/12	MN Chamber of Commerce	MN Chamber of Commerce, St. Paul	Provided overview of most-recent draft rule and opportunity for discussion
10/22/12	Army Corps of Engineers (ACE)	MPCA Offices, St. Paul	Discussion regarding the implementation of antidegradation through section 401 certifications of section 404 permits
10/23/12	Interagency workgroup (Metropolitan Council, Board of Soil and Water Resources, Minnesota Department of Transportation, MDNR, MPCA)	MPCA Offices, St. Paul	Provided rulemaking update
11/13/12	Conference on the Environment	University of Minnesota, St. Paul	Provided rulemaking update
11/14/12	MDNR	MPCA Offices, St. Paul	Discuss linkage between MDNR's listing of scientific and natural areas and fens with MPCA's listing of ORVWs
1/28/13	ACE	MPCA Offices, St. Paul	Discussion regarding the implementation of antidegradation through section 401 certifications of section 404 permits
1/7/14	MCSC	MPCA Offices, St. Paul	Rulemaking update and antidegradation implementation for regulated stormwater discharges
7/11/14	MN Chamber of Commerce	MN Chamber of Commerce, St. Paul	Provided overview of most-recent draft rules and opportunity for discussion
9/2/14	Barr Engineering	Barr Engineering Offices, Minneapolis	Provided update on rule revisions. Discussed potential revisions to rule language and implementation of rules
1/27/15	MPCA Citizens Board	MPCA, St. Paul Offices	Provided rulemaking update
2/12/15	Mining Companies (Quarterly meeting among mining companies and MPCA)	MPCA, St. Paul Offices	Provided rulemaking update. Addressed questions related to mining activities.
5/14/15	Red Lake DNR and 1854 Treaty Authority	MPCA, St. Paul Offices	Provided rulemaking update
11/23/15	PolyMet Mining (pre-permitting planning meeting)	MPCA, St. Paul Offices	Reviewed antidegradation requirements under current and proposed rules

Date	Interested Party/Parties or Stakeholder Meeting	Location	Major Topic(s)
12/9/15	Minnesota Environmental Science and Economic Review Board	MPCA, St. Paul Offices	Provided rulemaking update

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Attachment 2. Probable costs to the Minnesota Pollution Control Agency associated with adopting the proposed antidegradation rules

This attachment supports the regulatory requirement addressed in Section 8.B. of the Statement of Need and Reasonableness (SONAR). It contains references to sections and attachments within the SONAR.

1. Summary of anticipated additional number of antidegradation reviews and associated costs

As illustrated in Table 1, the MPCA conservatively estimates that it will expend $108,185 annually to conduct antidegradation reviews where they have not been conducted previously.

Table 1 of Attachment 2. Summary of the estimated number of additional antidegradation reviews and associated costs to the MPCA as a result implementing the proposed rules. (Note that this table is the same as Table 2 in the SONAR.)

Control document type	Anticipated annual increase in the number of reviews	Total increase in annual cost to conduct reviews
Individual NPDES wastewater permits	14.3	$44,416
Individual NPDES industrial stormwater permits	2.0	$6,212
Individual NPDES construction stormwater permits	0	0
Individual NPDES municipal stormwater permits	0	0
Section 401 actions on individual section 404 permits	15.5	$48,143
Section 401 actions on individual federal licenses and permits other than section 404 permits	0.8	$2,485
General NPDES wastewater permits	2.0	$4,778
General NPDES stormwater permits	0.2	$478
Section 401 actions on general section 404 permits	0.5	$1,195
Section 401 actions on general federal licenses and permits other than section 404 permits	0.2	$478
TOTAL	**35.5**	**$108,185**

The level of effort necessary for conducting the reviews will be absorbed into the normal staff complement and current budgets. Importantly, long-term costs to the MPCA surface water programs as a whole may actually decrease as a result of the clearly articulated implementation procedures and improved water quality protection, especially in regard to costs currently expended to restore waters not attaining water quality standards. This is further explained in Section 8. E. of the SONAR which addresses the probable costs or consequences of not adopting the proposed rules.

2. Explanation of costs for conducting additional antidegradation reviews

The discussion below provides details on how the above estimates were made for each control document type.

a. Individual NPDES wastewater permit reviews

The MPCA currently incurs costs associated with conducting nondegradation reviews of significant new or expanded wastewater discharges to all waters and any new or expanded discharges to the restricted category of ORVWs. Implementation of the proposed rules will require the MPCA to conduct more antidegradation reviews of proposed wastewater discharges as a result of removing the significance threshold. The MPCA estimates that the number of reviews for wastewater treatment facilities covered under individual NPDES permits will increase from 10.7 (Attachment 2a) to 25.0 per year (Attachment 2b); an increase of 14.3 reviews per year.

The cost of conducting a review depends on the time spent conducting the review and the cost of employing the people doing the work. The time spent and type of positions involved in a review depends on the complexity of the proposed activity and the timeliness and quality of information provided to, or obtained by, the MPCA. Based on previous experience (Attachment 2c), a typical review takes 182 hours to complete. Of this time 66 hours are spent doing actual work and the remaining time is attributed to waiting for additional information from the applicant and routing of information between MPCA reviewers.

There may be many different types of positions involved in conducting a review. A typical review entails input from engineers, research scientists, economists and managers. The following illustrates the kind of work done by typical position types and the percentage of effort contributed to a review:

Engineer Senior	Alternatives analysis, setting effluent limits, writing preliminary determination; 60% of effort
Research Scientist 2	Water quality analysis (i.e., assessment of impacts to existing water quality), writing preliminary determination; 25% of effort
Research Analysis Specialist (economist)	Economics review (i.e., substantial impacts analysis, demonstration of importance), writing preliminary determination; 10% of effort
Pollution Control Specialist, Principal (manager)	Review preliminary determination; 5% of effort

The following table provides an estimate for the cost of conducting a typical review.

Table 2 of Attachment 2. Estimated cost to the MPCA of conducting an antidegradation review for wastewater treatment activities regulated under individual NPDES permits as a result of implementing the proposed rules.

Position	Cost of employment ($/hr.)	Active hours (time actually spent on review)	Cost of active time ($)	Total (active + inactive) hours	Cost of total time ($)
Engineer Senior	48.75	40 (60% of total)	1950.00	109 (60% of total)	5313.75
Research Scientist 2	44.82	16 (25% of total)	717.12	46 (25% of total)	2061.72
Research Analysis Spec.	38.92	7 (10% of total)	272.44	18 (10% of total)	700.56
Pollution Cont. Spec. Prin.	55.41	3 (5% of total)	166.23	9 (5% of total)	498.69
TOTAL		**66**	**3105.79**	**182**	**8574.72**

Table 2 of Attachment 2 notes:

Total cost of employment equates to the wage multiplied by 30% for fringe benefits, the product of which was multiplied by 20.04% for indirect costs. Wages are based on mid-level steps for each position.

Based on estimated costs actually spent on a typical review ($3106) and the anticipated annual increase in the number of reviews (14.3), the MPCA estimates an additional cost of $44,416 for conducting reviews for wastewater treatment activities regulated under individual NPDES permits each year. This is a conservative estimate that includes MPCA effort for additional reviews on facilities that would have previously been excluded by the significance threshold provided in the current rules. Review of the additional formerly "sub-significant" discharges will require less effort than reviews of other types of discharges because they will likely be relatively less complex. However, predicting how much less effort would be required is not possible.

The EPA estimates that between 130 hours and 195 hours are required to conduct an antidegradation review which contains, like the proposed rules, an analysis of pollution prevention measures (Economic Analysis for the Water Quality Standards Regulatory Clarifications (Proposed Rule), USEPA, (2013), p. 3-8 (Exhibit 149)). The average hourly wage rate of the reviewer was estimated at $48/hour (Economic Analysis for the Water Quality Standards Regulatory Clarifications (Proposed Rule), USEPA, (2013), p. 3-2 and 3-8). Based on the above information, the cost to state agencies for conducting an antidegradation review ranges from $6,240 to $9,360.

Under current practices, the MPCA's Effluent Limit Setting Unit manages and conducts the majority of work involved in the review process. When the proposed rules are adopted, facility review engineers will have a much greater role in antidegradation review by working with applicants in identifying alternatives that minimize impacts to receiving waters. This is reasonable because, for any specific regulated activity, it is the review engineers who are most familiar with pollution prevention and treatment technologies associated with a given activity. The analysis of alternatives by MPCA review engineers is not a new practice. Minnesota Rules 7077.0272, subp. 2(D), require that applicants seeking financial assistance for wastewater treatment include in their facility plans an analysis of feasible alternatives capable of meeting the applicable effluent, water quality, and public health requirements. These plans are submitted to MPCA engineers for review and approval. The Effluent Limit Setting Unit will still play a critical role in the review process by establishing limits that protect water quality standards necessary to maintain beneficial uses. Others that may assist with future reviews include staff economists and staff familiar with water quality analysis.

b. **Individual NPDES industrial stormwater permit reviews**

There are currently ten facilities with individual industrial stormwater permits. Assuming a typical five-year permit cycle, the MPCA will conduct two reviews per year.

Although there are significant differences between how stormwater and wastewater discharges are regulated, the MPCA anticipates that reviews for individual industrial stormwater permits will be similar in nature and level of effort to those for individual wastewater permits. The review for both types of discharges will entail an alternatives analysis to identify minimally degrading pollution control measures, an assessment of impacts to existing water quality and a demonstration of importance when water quality impacts cannot reasonably be avoided. **Therefore, the MPCA estimates an additional annual cost of $6,212 ($3,106/review X 2 reviews/year) for antidegradation reviews of individual NPDES industrial stormwater permits.**

c. **Individual NPDES construction stormwater permit reviews**

All construction stormwater discharges have historically been covered under general permits and the MPCA does not anticipate issuing individual construction stormwater permits in the near future. **Therefore, the MPCA does not anticipate an increase in the cost of conducting reviews of individual NPDES construction stormwater permits.**

d. **Individual NPDES municipal stormwater permit reviews**

The cities of Minneapolis and St. Paul are the only municipalities currently regulated under individual municipal stormwater permits and the MPCA does not anticipate that additional cities will require individual permit coverage in the near future. Assuming a typical five-year permitting cycle, the MPCA expects to conduct 0.4 reviews each year related to individual municipal stormwater permits. The latest permits for these cities, issued in 2000, included nondegradation reviews conducted by the MPCA in the permitting process (see Nondegradation Review for the Minneapolis and Saint Paul Stormwater NPDES Permitting Process, MPCA, December 2009). **Therefore, the MPCA does not consider conducting future reviews related individual NPDES municipal stormwater permits as an additional effort and as a result there will be no increase in review costs.**

e. **Individual section 404 permit review (through section 401 actions)**

The MPCA estimates the number of section 401 actions for which antidegradation procedures may be required, based on records between 2007 and 2012 (see Attachment 2d). In that six year period the MPCA processed (certified, waived or denied) 159 section 401 certification applications for individual section 404 permits. Of these, 93 were either certified or denied, while the remainder was waived. Assuming the number of certified or denied actions represents what may be expected in the future, antidegradation procedures may apply to 15.5 section 401 actions for individual section 404 permits each year. This is a conservative estimate because it assumes that all of the 15.5 actions would actually trigger antidegradation procedures, which is unlikely.

The MPCA anticipates that reviews for section 401 actions on individual section 404 permits will be similar in nature and level of effort to those for individual wastewater permits. The review for both types of activities will entail an alternatives analysis to identify minimally degrading pollution control measures, an assessment of impacts to existing water quality and a demonstration of importance when water quality impacts cannot reasonably be avoided. **Therefore, the MPCA estimates an additional annual cost of $48,143 ($3,106/review X 15.5 reviews/year) for antidegradation reviews of section 401 actions on individual section 404 permits.**

f. **Individual non-section 404 federal license and permit reviews (through section 401 actions)**

Between 2007 and 2012, the MPCA certified five individual federal licenses and permits which were not section 404 permits (see Attachment 2d). These were licenses and permits issued by the U.S. Coast Guard (USCG) and the Federal Energy Regulatory Commission (FERC). Assuming this trend continues, the MPCA would conduct 0.8 reviews per year in the future. The MPCA estimates that the level of effort for these

reviews will be similar to the level of effort to conduct nondegradation reviews for individual NPDES permits. **The MPCA estimates an additional annual cost of $2,485 ($3,106/review X 0.8 reviews/year) for antidegradation reviews of section 401 actions on individual federal licenses and permits other than section 404 permits.**

g. **General NPDES wastewater permit reviews**

The MPCA expects to conduct antidegradation reviews on ten general wastewater permits. Based on a five-year permitting cycle, the MPCA would conduct 2.0 antidegradation reviews for general NPDES wastewater permits each year.

Under the proposed rules, the MPCA will conduct antidegradation reviews during the development of general NPDES permits. Review will entail an alternatives analysis and a justification for lowering high water quality based on important economic and social development of the permitted activity. The alternatives analysis is a process which identifies prudent and feasible alternatives that minimize loading or other causes of degradation. Once identified, the selected alternatives (i.e., pollution control measures) will be incorporated into the permit conditions. Thus, antidegradation review of individual activities covered under these permits is not required as long as conditions specified in the permit are satisfied. This will require the MPCA to put some additional effort in the development of these types of permits, but will eliminate the need for individual review for each project covered under the permit, thus saving time and effort for both the MPCA and applicants seeking coverage under a general permit.

A significant difference between reviews of individual and general NPDES permits is that, under the proposed rules, an antidegradation review for the latter does not require an assessment of anticipated impacts to existing water quality. Assuming the level of effort for conducting reviews of general permits is similar to that for individual permits (as described above), except that the cost for assessing impacts to existing water quality is removed, the estimated cost for conducting a general permit review is $2,389 ($3,106 (cost of individual review) – $717 (cost for a Research Scientist to assess impact to existing water quality)). **Based on these assumptions, the MPCA estimates an additional annual cost of $4,778 ($2,389/review X 2.0 reviews/year) for antidegradation reviews of general NPDES wastewater permits.**

h. **General NPDES stormwater permit reviews**

The MPCA issues three general stormwater permits:

- municipal (permit #: MNR040000);
- industrial (permit #: MNR050000); and
- construction (permit #: MNR100001).

Nondegradation reviews have previously been conducted by the MPCA for municipal stormwater general permits (Nondegradation for Small Municipal Separate Storm Sewer Systems (MS4s), MPCA, May 21, 2012) (Exhibit 150) and industrial stormwater general permits (Fact Sheet for the National Pollutant Discharge Elimination System/State Disposal System Multi-Sector General Permit of Industrial Storm water Activity, MPCA, November, 2010) (Exhibit 151). Therefore, the MPCA does not consider conducting reviews related to these permit types as an additional effort. However, because the MPCA has not conducted antidegradation reviews on construction general NPDES permits, the MPCA does consider review of these general permits as an additional effort.

Assuming a five-year permit cycle, the MPCA would conduct 0.2 antidegradation reviews for NPDES construction stormwater general permits each year. Gauging the level of effort to conduct an antidegradation review of stormwater general permits is difficult because current practices in the development of these permits overlap with what the proposed rules require. The issuance of general stormwater permits is an adaptive management process whereby the MPCA learns from past experiences and makes adjustments to permit conditions that are effective in protecting water quality. This is an ongoing process that contains many of the same elements as an antidegradation review, particularly the alternatives analysis.

Antidegradation review of general NPDES stormwater permits will be similar in nature to that for general NPDES wastewater permits in that the assessment of impacts to existing water quality will not be required. The MPCA anticipates the cost of conducting reviews for both permit types will be similar. **Therefore, the MPCA estimates an additional annual cost of $478 ($2,389/review X 0.2 reviews/year) for antidegradation reviews of general NPDES stormwater permits.**

i. **General section 404 permit reviews (through section 401 actions)**

For actions involving general section 404 permits, the proposed rules will require the MPCA to conduct antidegradation review during the certification process of the general permit itself and not individual projects covered under the permit. As with general NPDES permits, antidegradation requirements are satisfied when a permittee complies with the terms and conditions of a section 404 general permit.

Between 2007 and 2012, the MPCA certified three general section 404 permits (Attachment 2d). Assuming that current permitting trends continue, the MPCA will conduct 0.5 antidegradation reviews of general section 404 permits each year when the proposed rules are implemented. **Making the same assumptions for the level of effort to conduct review of general NPDES permits, the MPCA estimates an additional annual cost of $1,195 ($2,389/review X 0.5 reviews/year) for antidegradation reviews of section 401 actions on general section 404 permits.**

j. **General non-section 404 federal license and permit reviews (through section 401 actions)**

Between 2007 and 2012, the MPCA certified one general federal and permit which was not a general section 404 permit (Attachment 2d). The certification was for a general NPDES vessel discharge permit. Assuming that current permitting trends continue, the MPCA will conduct 0.2 antidegradation reviews of this type each year when the proposed rules are implemented. **Making the same assumptions for the level of effort to conduct review of section 401 actions on general section 404 permits, the MPCA estimates an additional annual cost of $478 ($2,389/review X 0.2 reviews/year) for antidegradation reviews of section 401 actions on general federal licenses and permits other than section 404 permits.**

3. Review and respond to comments on preliminary determinations

As with the current rules, the proposed procedures provide for public input on the MPCA's antidegradation determinations through existing provisions in Minn. R. ch. 7001. The proposed rules provide more opportunity for comment as a result of the increase in the number of preliminary antidegradation determinations. However, the proposed rules also create much greater transparency and consistency, which may in fact result in fewer comments. Costs associated with reviewing comments, whether under existing or proposed provisions, vary depending on the level of interest and the complexity of the proposed activity. Based on these considerations the MPCA cannot reasonably determine whether there will be an increase in cost as a result of the proposed changes.

Attachment to the Statement of Need and Reasonableness: In the Matter of Proposed Revisions of Minnesota Rules ch. 7050, Relating to Nondegradation and minor supporting changes to Minnesota Rules ch. 7001; Repeal of Minnesota Rules 7050.0180 (Nondegradation for Outstanding Resource Value Waters) and Minnesota Rules 7050.0185 (Nondegradation for All Waters); Proposed Addition of New Rules, Minnesota Rules 7050.0250 through 7050.0335 (Antidegradation), Minnesota Pollution Control Agency (MPCA)

Attachment 2a. Nondegradation reviews conducted by the Minnesota Pollution Control Agency between 2003 and 2012 for proposed new or expanded wastewater discharges

Year	Permit Number	Permit Type	Applicant
2003	MN0024538	MUN	Princeton
	MN0041076	MUN	Big Lake
	MN0049328	MUN	Brainerd
	MN0064190	MUN	Otsego East
	MN0020036	MUN	Benson
	MN0021857	MUN	Chatfield
	MN0064190	MUN	Otsego East
	MN0066966	MUN	Annandale/Maple Lake Joint WWTP
	MN0046868	MUN	Dover Eyota St. Charles SD
	MN0066494	IND	Le Sueur Cheese Co. WWTF
	MN0056219	MUN	Elko/New Market
TOTAL 2003 = 11 reviews			
2004	MN0025682	MUN	Currie
	MN0040754	MUN	Beaver Bay
	MN0021229	MUN	Annandale/Maple Lake
	MN0041076	MUN	Big Lake
	MN0055808	MUN	Chisago Lakes Joint Sewage Treatment Commission
	MN0067211	IND	Bushmills Ethanol, Atwater
	MN0024619	MUN	Rochester
		IND	Willmar Bio-Mass Power Plant (A.K.A. Barlow Projects, Inc.)
	MN0051926	MUN	Howard Lake
	MN0061646	IND	Ochs Brick Co. – Springfield Quarry
	MN0031917	IND	Rahr Malting Co. Industrial waste
	MN0003247	IND	Minneapolis Water Works
	MN0060232	IND	Diversified Energy Co.
		MUN	Private Development in Dayton
	MN0022501	MUN	Barnesville
	MN0047490	MUN	Clear Lake/Clearwater
	MN0025666	MUN	Becker, Domestic
	MN0066796	IND	Becker, Industrial
	MN0025666	MUN	Becker, Combined Domestic and Industrial

Year	Permit Number	Permit Type	Applicant
2004, continued	MN0051926	MUN	Howard Lake
	MN0053457	MUN	Carver (Scenario 1)
	MN0053457	MUN	Carver (Scenario 2)
	MN0053457	MUN	Carver (Scenario 3)
	MN0021202	MUN	Mayer
TOTAL 2004 = 24 reviews			
2005	MN0002852	IND	Hutchinson Water Treatment Plant
	MN0022152	MUN	LeSueur
	MN0110914	IND	USEPA MED Duluth
	MN0025666	MUN	Becker Expansion
	MN0021407	MUN	Saint Francis Rum River
	MN0021407	MUN	Saint Francis Existing Seeleye Bk. Site
	MN0067806	IND	Edward Kraemer & Sons: EKS Mille Lacs Quarry
	MN0066800	IND	Granite Falls Energy LLC (Ethanol Plant)
		MUN	MinAqua, Inc.
		MUN	Willmar, Hawk Ck. #1
		MUN	Willmar, Hawk Ck. #2
		MUN	Willmar, Co. Dt. 19 #1
		MUN	Willmar, Co. Dt. 19 #2
	MN0050130	MUN	Harris (revised)
		MUN	Willmar, Co. Dt. 23A #1
		MUN	Willmar, Co. Dt. 23A #2
	MN0064351	IND	Lincoln-Pipestone Rural Water SD002
	MN0022501	MUN	City of Barnsville
	MN0040649	MUN	City of Buffalo
	MN0051926	MUN	Howard Lake
TOTAL 2005 = 20 reviews			
2006	MN0068063	IND	Buffalo Lake Energy
	MN0068110	IND	Agassiz Energy, LLC
	MN0068161	IND	VeraSun Energy Corp. (Ethanol Plant)
		IND	Mankato Water Works
	MN0020940	MUN	Watertown
		MUN	Foley
	MN0055832	MUN	Hutchinson
	MN0068357	IND	Otter Tail Ag Enterprises (Ethanol Plant)
		MUN	Owatonna
	MN0055832	MUN	Hutchinson
	MN0050130	MUN	City of Harris
	MN0055808	IND	Granite Falls Energy
	MN0020150	MUN	New Prague
	MN0046868	MUN	Dover Eyota St. Charles SD
TOTAL 2006 = 14 reviews			

Year	Permit Number	Permit Type	Applicant
2007	MN0068659	MUN	Central Lakes Region SD
	MN0053341	MUN	Coleraine-Bovey-Taconite Joint Wastewater Commission
	MN0020834	MUN	Arlington
	MN0068241	IND	Minnesota Steel Industries, LLC at Nashwauk
	MN0064351	IND	Lincoln-Pipestone Rural Water System
		IND	Hutchinson Water Treatment Plant
	MN0068985	IND	MinnEnergy, LLC
	MN0047261	IND	Gold'n Plump Poultry
	MN0049204	MUN	Cokato
	MN0055832	MUN	City of Hutchinson
TOTAL 2007 = 10 reviews			
2008	MN0024538	MUN	Princeton
	MN0068764	IND	L.G. Everist, Inc.
	MN0047261	IND	Gold'n Plump Poultry
	MN0049204	MUN	Cokato
TOTAL 2008 = 4 reviews			
2009	MN0002101	IND	MAC SD003 (Metropolitan Airport)
	MN0002101	IND	MAC SD005 (Metropolitan Airport)
	MN0002101	IND	MAC SD006 (Metropolitan Airport)
	MN0002101	IND	MAC SD0010 (Metropolitan Airport)
	MN0002101	IND	MAC SD0012 (Metropolitan Airport)
	MN0063045	IND	Milestone Materials (Quarry)
	MN0062804	IND	Panhandle Quarry/Stewartville
	MN0021571	MUN	Winsted (Outfall Relocation MPCA Suggestion)
	MN0021571	MUN	Winsted (Outfall Relocation #2)
	MN0021571	MUN	Winsted (Outfall Relocation #3)
TOTAL 2009 = 10 reviews			
2010	MN0031879	IND	Keetac SD012
	MN0021296	MUN	Welcome (Expansion)
	MN0021776	IND	Denco, LLC Alternative #3
	MN0055948	IND	US Steel Keetac, SD009 (New)
	MN0069531	IND	Milestone Materials – Stewartville
	MN0069523	IND	Milestone Materials – North Quarry
	MN0066079	MUN	Long Prairie WWTF
	MN0020257	MUN	North Koochiching Area SD (International Falls Area)
TOTAL 2010 = 8 reviews			
2011	MN0022128	MUN	Fosston, SD 001
	MN0022128	MUN	Fosston, SD 002
	MN0020257	MUN	North Koochiching Area SD (International Falls Area)
	MN0069710	IND	MDNR: Spire Valley Hatchery SD001
	MN0069710	IND	MDNR: Spire Valley Hatchery SD002
TOTAL 2011 = 5 reviews			

Year	Permit Number	Permit Type	Applicant
2012	MN0021725	MUN	Tracy WWTF
TOTAL 2012 = 1 review			
TOTAL reviews conducted between 2003 and 2012 = 107			
AVERAGE number of reviews conducted annually between 2003 and 2012 = 10.7			

Attachment 2a notes:

- This information was retrieved from LIMITRAK, an MPCA database.
- The numbers represent reviews conducted, but not necessarily completed. In some cases reviews were initiated but not completed because the applicant decided not to pursue the original project as initially proposed.
- Projects without a permit number indicated that one was not assigned when the nondegradation materials were received by the MPCA.
- Repeated permit numbers and/or applicants indicate a change in the proposed activity including changes in discharge locations. In such cases individual reviews were conducted and are treated as separate reviews.
- MUN means municipal; IND means industrial

Attachment to the Statement of Need and Reasonableness: In the Matter of Proposed Revisions of Minnesota Rules ch. 7050, Relating to Nondegradation and minor supporting changes to Minnesota Rules ch. 7001; Repeal of Minnesota Rules 7050.0180 (Nondegradation for Outstanding Resource Value Waters) and Minnesota Rules 7050.0185 (Nondegradation for All Waters); Proposed Addition of New Rules, Minnesota Rules 7050.0250 through 7050.0335 (Antidegradation), Minnesota Pollution Control Agency (MPCA)

Attachment 2b. Internal MPCA memorandum of the projected number of antidegradation reviews for individual wastewater NPDES permits as a result of implementing the proposed antidegradation rules

SF-00006-05 (4/86)

DEPARTMENT: POLLUTION CONTROL AGENCY

STATE OF MINNESOTA
Office Memorandum

DATE: May 28, 2014

TO: Bill Cole
Water Assessment & Env. Information Section
Environmental Analysis & Outcomes Division

FROM: Dave Sahli, P.E.
Principal Engineer
Municipal Wastewater Section
Municipal Division

PHONE: 651/757-2687

SUBJECT: Estimated number of reviews required under the proposed antidegradation rules
Revision of October 8, 2013 Memo

Revisions

This memo is a revision of the memo referenced above. The data listed in the table below for "Limits Review – Outside Request" has been changed to address multiple requests coming from the same entity in the same year. It is assumed that those different scenarios would likely be covered by a single antidegradation alternative analysis. Each specific case of multiple requests was not evaluated, so it is possible that more than one antidegradation review may be necessary in some cases. But, for the purposes of this memo multiple requests for the same facility were only counted once in each year.

Estimate

Below is my evaluation of the potential number of antidegradation reviews that may be required under the proposed rule. There is no one single source of information that can accurately determine the number of possible reviews that will be required. As shown in the table below, there are multiple programs that have requirements that deal with new or expanding discharges that could indicate the need for an antidegradation review. With the data from those programs, a reasonable estimate of the potential number of antidegradation review can be made.

The available information related to new and expanding wastewater treatment plants (WWTPs), shows that the annual work load can vary greatly from year to year. This is attributed to many factors such as the permit expiration cycle, age of WWTPs, the current economy, housing markets, population growth, and the availability of financial assistance.

What appears to be the most reasonable representation of the possible number of antidegradation reviews is the "limits review - outside request" column in the table below. These are requests from regulated parties for a determination of effluent limits. These requests usually occur during the typical 5-year permit cycle for existing permits and they are likely for a change to the existing permit discharge. It seems reasonable to assume that these requests are because of an expansion or a new discharge. The number of outside requests has decreased in recent years. It is speculated that it is due to a downturn in economic conditions. The number of potential request could also increase suddenly in response to positive economic conditions.

The annual antidegradation review workload is anticipated to vary significantly from year to year, but it can be expected to be an average of about 25 per year.

Supporting Information

The Clean Water Revolving Fund (CWRF) Project Priority List (PPL) is the list of all municipalities that have requested financial assistance. The 2013 PPL includes 331 requests with 72 that are described as new or expanding. All of those projects would likely require review under the proposed antidegradation rule. Projects on the PPL remain listed until they are funded, so the number of new or expanding projects on the list is not a reliable indicator of the number of antidegradation reviews in a single year. As projects are constructed and removed from the PPL, new projects are added and the make-up of the list remains relatively constant.

The "Total CWRF Funded Projects" column lists the number of projects that received funding and went into construction. The "New or expanded CWRF projects" column lists funded projects that were included a new or expanded discharge. The CWRF is only for municipalities and does not include privately funded municipal projects, non-municipal, or industrial projects. If there were similar numbers of projects funded outside of the CWRF, then the average of all wastewater projects that are new or expanding would be around 23 per year.

The Environmental Assessment Worksheet (EAW) column shows the number of EAWs for wastewater projects. The EAWs completed prior to 2005 were for flow increases of at least 50,000 gallons per day (gpd). After 2005 the criteria was raised to 200,000 gpd. The proposed rule does not have a flow threshold so it is reasonable that the number of reviews be greater than the number of EAWs.

Table of the estimated number of potential reviews under the proposed antidegradation rule

Year	Total CWRF* Funded Projects	New or expanding CWRF* projects	Wastewater EAW	Limits review - outside request
2013	61	7	0	9
2012	58	6	1	6
2011	83	15	5	7
2010	37	12	3	15
2009	29	10	2	21
2008	50	13	3	13
2007	56	15	8	24
2006	38	5	6	23
2005	45	14	7	35
2004			19**	37
2003			13**	
2002			11**	
Avg.	51	11	14.3**	19 (2004-2013) 25.5 (2004-2009)

*CWRF = Clean Water Revolving Fund. The numbers in these 2 columns are those project that were actually constructed

**14.3 avg. is of 2002-2004 the flow threshold requirement for an EAW was 50,000 gpd.

Conclusions

- There is no single source of available data that simply identifies how many antidegradation reviews would be required as a result of the proposed rule.
- There is program data that approximates the potential number of reviews, but there isn't the same information for every program.
- The program data shows that the number of projects/reviews can vary significantly from year to year.
- Based on available information and making projections for data that is not available, it seems reasonable that the average number of antidegradation reviews as a result of the proposed rule is approximately 25 per year.

dsahli

Attachment to the Statement of Need and Reasonableness: In the Matter of Proposed Revisions of Minnesota Rules ch. 7050, Relating to Nondegradation and minor supporting changes to Minnesota Rules ch. 7001; Repeal of Minnesota Rules 7050.0180 (Nondegradation for Outstanding Resource Value Waters) and Minnesota Rules 7050.0185 (Nondegradation for All Waters); Proposed Addition of New Rules, Minnesota Rules 7050.0250 through 7050.0335 (Antidegradation), Minnesota Pollution Control Agency (MPCA)

Attachment 2c. Internal MPCA memorandum of the estimated time to conduct nondegradation reviews

SF-00006-05 (4/86)

DEPARTMENT: POLLUTION CONTROL AGENCY

STATE OF MINNESOTA
Office Memorandum

DATE: October 25, 2013, Revised January 30, 2014

TO: William Cole
Water Quality Standards Unit
Water Assessment & Environmental Information Section
Environmental Analysis & Outcomes Division

FROM: Bruce P. Henningsgaard, P.E.
Effluent Limits Unit
Water Assessment & Environmental Information Section
Environmental Analysis & Outcomes Division

PHONE: 651-757-2427

SUBJECT: Nondegradation Review Time

This memo includes estimated time the MPCA has spent developing and reviewing nondegradation reports. This can hopefully be used to estimate the amount of time the MPCA will spend developing and reviewing antidegradation reports in the future.

Unfortunately the nondeg process varies extensively from project to project. Some nondeg reports are pulled together very quickly and move through the review process rapidly. Other times it can take a year or more to finish. Projects taking a year are the rare exception, but they have occurred. Below I have listed the basic steps in the nondeg process and tried to determine work time for those steps. This information is based on email responses I received after asking MPCA supervisors and staff for information. I heard back from those who write nondeg reports, those who assist in writing, those who review and supervisors who review and sign-off on them as part of the routing process.

The largest range of time, and on average the most time, appears to be spent obtaining information and waiting for responses. There are times when it takes as little as a few days to pull together the information and one week to write the document and in some rare cases up to a year or more to get all the information and complete the document. A part of the delay is waiting for the permittee to respond to information requests. These time estimates do not take into account other work assignments staff may have. Sometimes it takes a while to start working on a specific job due to other commitments.

The estimated times below do not take into account the comments I received that stated some complicated and/or contentious projects can take up to a year to obtain all the information necessary to produce a finalized nondeg review. It also does not take into account the comment I received that stated that some complicated and/or contentious projects can take up to 40 hours of review time by supervisors. I have left these out of the ranges below because they are very extreme values and evidently occur only on rare occasions. It should also be noted that nondeg reviews are routed to three supervisors: the supervisor of effluent limit review staff, the supervisor of the permit writer/review engineer and the supervisor of the basin planner. In almost all cases, staff associated with these supervisors are also doing reviews. For the supervisor of the permit writer/review engineer, this could include up to three staff: the permit writer, the review engineer and the compliance staff. The classifications of staff doing reviews could include any of the following: Engineer 1 Graduate, Engineer 2 Graduate, Engineer Senior, Engineer Principal, Engineering Specialist, Engineering Specialist Senior, Pollution Control Specialist (PCS), PCS Intermediate, PCS Senior, PCS Principal, State Program Administrator (SPA), SPA Intermediate, SPA Senior, SPA Principal, Research Scientist (RS), RS 2, Environmental Scientist and Research Analyst Specialist. Other staff classifications may be involved, depending on the projects complexities and visibility. This could include all levels of management, up to and including the commissioner.

The total time estimates below include time for three supervisors and one staff member per supervisor even though it is likely that there may be more than one staff member per supervisor doing review work.

Activity	Range (hours)	Average (hours)	Range (Days, based on 8 hour day)	Average (Days, based on 8 hour day)
ACTIVE WORK TIME				
Writing	24 - 64	44	3 - 8	6
Staff Reviews*	6 - 24	15	<1 - 3	2
Supervisor Reviews**	1.5 - 12	7	<1 - 1.5	<1
Total Active Work Time	31.5 - 100	66	4 - 12.5	8
INACTIVE WORK TIME				
Waiting for information from applicant	8 - 168	88	1 - 21	11
Document routing	24 - 32	28	3 - 4	3.5
Total Inactive work time	32 - 200	116	4 - 25	14.5
TOTAL TIME	63.5 - 300	182	8 - 37.5	23

* Staff Reviews includes time for 3 staff members

** Supervisor Reviews includes time for 3 supervisors

The Office of Water from EPA put out a report dated July 2013 titled Economic Analysis for the Water Quality Standards Regulatory Clarifications (Proposed Rule). This report includes, on page 3-8, an estimate of hours required to review an antidegradation report. The report says the following:

> Thus, the EPA estimates the number of hours required to review a single antidegradation review that includes the analysis of pollution prevention ranges between 130 hours (100 hours + (100 hours × 30%)) and 195 hours (150 hours + (150 hours × 30%)).

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Attachment 2d. Section 401 actions conducted by the Minnesota Pollution Control Agency from 2007 through 2012

Key:

- "Permit Type" abbreviations have the following meanings: I404 = Individual section 404 permit; G404 = General section 404 permit; IFLPnon404 = Individual federal license or permit other than section 404 permit (i.e., Coast Guard (CG)and Federal Energy Regulatory Commission (FERC)); GFLPnon404 = General federal license or permit other than section 404 permit (i.e., Nation-wide NPDES permit)
- "Action" column abbreviations have the following meanings: W=waived; C=certified; D=denied.

Summary: Total and average annual section 401 actions (certifications and denials) between 2007 and 2012 that may have required antidegradation procedures under the proposed rules.

Permit Type	Total Number of Actions, 2007 - 2012	Average Number of Actions per Year
Individual section 404 permits	93	15.5
General section 404 permits	3	0.5
Individual federal licenses and permits other than 404 permits (Coast Guard (4) + (Federal Energy Regulatory Commission)(1))	5	0.8
General federal licenses and permits other than 404 permits (Nation-wide NPDES general permit)	1	0.2
TOTAL	**102**	**17**

Year 2007 Actions

Permit Type	Applicant	Project Name	Project Number	Action
I404	Southern Minnesota Const.	Mining	00-2334-DAS	W
I404	Lake Co Highway Dept.	CSAH 2	05-6883-TWP	W
I404	Meredith Pyles Hogdale F	Harmony Estates	06-6699-TJF	C
I404	Jim Malvin EKN Prop	Emily's Waters	05-5763-TJF	C
I404	DM&E RR Corp.	Powder River	1998-5541-TJF	C
I404	Richard Viita	Peat Mine	2006-7198-TWP	W
I404	Cliffs Erie, LLC	Peat Extraction	06-6997-TWP	C
I404	Minnesota Steel Industries	Mine Expansion	2005-0546-JKA	C
I404	Vic & Michelle Gunderson	Peat Extraction	06-7012-TWP	D
I404	St. Louis Co. Pub. Wks	CSAH 47	07-0435-DWW	W

Year 2007 Actions				
Permit Type	**Applicant**	**Project Name**	**Project Number**	**Action**
I404	JLG Enterprises	Residential Development	02-01572-TWP	W
G404	COE	GP-001-MN	07-1408-MTV	C
I404	MCES	Elko New Market Interceptor	06-0124-BAJ	W
I404	Centex Homes	Centex Glenn Meadows	06-6628-TJF	C
I404	Waupaca Northwoods, LLC	Toivola Peat Bog Mine	07-1073-TWP	D
I404	Mike Johnson & Ed Svek	Peat Mining	07-0281-TWP	C
I404	Middle Snake Tamarac River WD	Snake River Flood Control Project	07-1862-WAB	W
I404	JLG Enterprises	Jackson Estates 1st Settlement LOP	2007-2409-TJS	W
I404	JLG Enterprises Individual Lots	8 individual Lot Owners	multiple	W
I404	Martin Bauerly Materials, LLC	Granite Quarry	2007-2605-TJH	W
I404	Wade & Salli Christensen (Jacksonville Estates)	Jackson Estates 2nd Settlement	2007-3155-TJS	W
I404	St. Louis County Public Works	Vehicle Storage Facility	2007-2513-DWW	W
I404	Quail Creek Villas, LLC	Residential Development	2007-2208-TJF	W
I404	Blue Earth County Highway Department	CSAH 26	2003-0511-DAS	W
IFLPnon404 (Coast Guard)	I-35 Bridge Construction and Demolition	MnDOT app to CG - needs 401		C
I404	United States Steel - Minntac	Mining Processing Facility	2007-1868-TWP	C
I404	Nine Mile Creek Water District	Eden Prairie Water Quality Improv.	2007-05280-JJY	C
I404	Morrison County Public Works	Mining/Excavation Project	2007-04407-LAG	C

Year 2008 Actions				
Permit Type	**Applicant**	**Project Name**	**Number**	**Action**
I404	Enbridge Pipeline (Southern Lights) LLC	Oil Pipeline Manatoba to Clearwat.	2006-5527-LAG	C
I404	The Quarry Retail Develop / Jeff Draxton DMH	Quarry Retail Development	2006-7123-TJH	C
I404	Ferche Excavation, LLC	Pine Lake Plat Project - AUAR	2007-06399-TJH	W
I404	Benton County Highway Department CSAH 5	Reconstruction of app 6-miles	2008-0319-TJH	W
I404	Minnesota DOT	Reconstruction of app 10.5-miles	2007-6021-KJU	W
I404	MN Iron Range Retriever Club	Construction of training pond	2008-00722-JRS	C
I404	Teridon Properties, LLC	L&M Facility Expansion	2006-6259-WAB	D
I404	Kevin Claus, Hermantown, MN	Jackson Estates Residential Dev.	2008-01230-TJS	W

Year 2008 Actions *Continued*

Permit Type	Applicant	Project Name	Number	Action
I404	Regents of the U of M	Const. of Road Research Facility	2007-04858-JRS	W
I404	Mille Lac County Highway Department	Reconstruct and Upgrade CSAH 25	2008-00276-LAG	C
I404	John Braastad, D. Manger Agassiz NWR	US F&WS. - Agassiz NWR	2007-1159-KJU	C
I404	Frattalone Companies	Const. Multiuse - Columbus MN	2008-01762-TJF	C
I404	Vic & Michell Gunderson	Peat Mining Project	2008-00520-TWP	D
I404	City of Willmar	New Wastewater Treatment Facility	2008-01305-DJM	C
I404	Port of Entry - Warroad, MN	Construction of new Port of Entry	2006-2564-KJU	W
I404	Corps EA Project	Minnehaha Falls Wall Repair	NA	W
I404	Hwy 23 (Desoto) Bridge (RGP-03)	MnDOT (did not require CG apprvl)	2008-01876-TJH	C
I404	Marshall County Highway Department	CASH 43 Resurface and Realign.	2008-01064-KJU	W
I404	Northshore Mining Company	Permanent Deversion W. Beaver R.	2007-00841-TWP	C
I404	Itasca Co. Regional Rail Authority	New 9-Mile Rail for Steel Product.	2008-01181-JKA	C
I404	Hibbing Taconite/Cliffs Mining Co. Joint Vent.	Mining Expansion in HibbTac Site	2008-02566-TWP	C
I404	Minnesota DNR - Fisheries	Restore Eco. Func. of Dark River	2006-04440-TWP	D
I404	N. Dakota DOT	Drayton-Robbin Bridge (Red River)	NA	C
I404	Minnesota DNR - Trails and Waterways	Gitchi-Gami State Trail 2-Har to GM	2008-03706-TWP	C
IFLPnon404 (CG)	Hennepin County Lowry Bridge	Demolition and reconstruction - CG is lead fed agency		C
I404	Enbridge Energy Limited Partnership	Alberta Clipper Pipeline Project	2008-04399-BAJ	C
I404	Richard and Christina Fuller	Jackson Estates First Addition	2008-05771-TJS	W
I404	Greg Felt, Scott Highway Department	Construction & Extension of CSAH's	2002-07148-CCB	C

Year 2009 Actions

Permit Type	Applicant	Project Name	Number	Action
IFLPnon404 (FERC)	Northern Natural Gas	Zone EF Expansion - (GP)	Established HDD conditions via FERC EA	W
I404	Corps EA Project	Flood Mgmt in ADA, Wild Rice & Marsh River	NA	C
I404	City of Plymouth	Phos. Reduction-Improve h2o Qual.	2008-05867-JJY	C
I404	Upper MN River WD - Dianne Radermacher	Flood Mitigation Proj - Browns Valley	2008-05521-EMN	C

Year 2009 Actions				
Permit Type	**Applicant**	**Project Name**	**Number**	**Action**
I404	MNDNR - Duluth Area Fisheries	St.Louis River-Fish Spawning Enhance.	2008-02896-TWP	C
I404	Lake County Highway Dept.	Road Construction Project	2008-00036-TWP	W
I404	Peter Ringhofer	Peat harvesting project	2008-05979-TWP	C
I404	Minnesota Power	Phase III - Industrial SW Ash Landfill	2009-00103-TWP	C
I404	City of Crookston, MN	Crookston Flood Protection Project	2008-05594-WAB	C
I404	Corps Project - Mississippi River	POOL 2, Island 112	NA	C
I404	Metropolitan Council	Wastewater Main across Miss. River	2006-03912-TJF	C
I404	Corps EA Project	Brwns Vall_Levee_Lake Traverse 3500 ft Shrline Imp Project	NA	W
I404	Corps EA Project	Big Sandy Lake Beach Expansion Project	NA	W
I404	Mr. Douglas McConnell	Peat Mining Project - Benton County	2009-01161-TJH	W
I404	Corps EA Project	Upper Miss River Pool 2 & Main Channel habitat Enhancement	NA	C
I404	US Steel Corporation	Residential Develop - SE Lake Vermillion	2005-01023-JRS	D
I404	Enbridge Energy Limited Partnership	Alberta Clipper Pipeline Project (2nd PN)	2008-04399-BAJ	C
I404	City of Bigfork, MN	Airport Runway Extension	2009-01223-WAB	C
I404	Corps EA Project	Erosion Protection of Elk River @ CR 35	NA	C
I404	Roseau River Watershed District	Hay Creek Norland Flood Control Project	2003-06766-KJU	C
I404	Charles Fodness	Peat Mine Project	2009-01114-TWP	C
I404	Alexandria School District 206	Construction of New high School	2009-02608-SJC	C
I404	Koochiching County Highway Department	Road Construction Proj. 2.38m. CSAH - 77	2009-01696-KJU	C
I404	Corps Stim Funding Project - no EA required	Lock-n-Dam 3 Navigation/ Safety Project	NA	C
I404	Itasca County Highway Department	Reconstruct CSAH 7 / CR 341 & CSAH 75	2008-05077-WAB	W
I404	MN DOT City of Paynesville Highway 23	Construction 4-Lane Bipass State High. 23	2008-02449-TJH	C
I404	Marshall County Highway Department	Reconstruction of CSAH 54 North of Grygla	2009-01876-LSP	W
I404	St. Louis County Public Works Department	Reconstruction of CSAH 4 ~4miles	2009-04995-TWP	W
I404	City of Crookston, MN, - LeBlanc Addition	100-Year Flood Protection - Stage 6 2009-05495-WAB	2009-05495-WAB	C
I404	Minnesota Department of Transportation	Reconstruc. of Truck Highway 60 ~11.5m	2006-01432-DAS	C
I404	Norman County Highway Department	Upgrading CSAH 1 ~ 7.0 miles	2008-04704-RQM	C

Year 2009 Actions

Permit Type	Applicant	Project Name	Number	Action
I404	Corps EA Project: Painter Creek Restoration Project	Near Lake Minnetonka in Hennipen Co	NA	W

Year 2010 Actions

Permit Type	Applicant	Project Name	Number	Action
I404	Minnesota Department of Transportation	Harbor at Tower - Phase 1 Wetland Permit	2006-00262-TWP	C
I404	C. of Blaine, MN 2008-01846-TJF - Amended	Compensatory Wetland Mit. Bank Site Prop.	2009-05220-TJF	W
I404	Mr. Jack Remick	Lourdes High School - Rochester, MN	2003-03157-DAS	W
I404	MnDOT	Hastings HWY 61 Bridge	NA	C
I404	MnDOT	Lafayette Bridge	NA	C
I404	US Steel Corporation	Minntac Tailings Bas. 2-Wetland Replace Plan	2009-02600-TWP	W
I404	McLeod County	Reconstruction of CSAH 23	2008-05255-DJM	C
I404	MN DOT District 2	Reconstruction of Trunk Highway 11 ~18.5 m.	2009-05717-LSP	C
I404	Koochiching County Highway Dept.	Reconstruction of ~2.35 miles of CSAH 18	2010-00346-LSP	C
I404	City of Moose Lake	Construct. of 3-Wastewater Treatment Ponds	2008-05218-DWW	W
I404	City of Crookston, MN - Jerome's Addition	100-Year Flood Protect - Stage 5	2009-03819-WAB	C
I404	City of Plymouth	Plymouth Creek Streambank Stabilization	2010-03057-JJY	C
I404	Pine County Public Works	Reconstructing CSAH 55	2010-00455-JCC	C
I404	Kittson County Highway Department	Reconstruction of CSAH 4 ~5.49-miles	2008-05849-LSP	C
I404	Corps EA Project	Red Wing Wildlife Shoreline Reclamtn Prject	NA	C
I404	Buffalo-Red River Watershed District	Oakport Flood Mitigation Project - N of MoorH.	2007-0835-LAG	C
I404	Lon Aune Marshall County HD	Reconstruction of CSAH 30	2010-01156-LSP	D
I404	Root River SWCD	Flood Control (Staggemeyer) Dam in New Yorker Creek. Approx 240' downstream this is a designated Trout Sream	2010-01798-(DAS)	D
I404	NDDOT	Drayton-Robbin Bridge Demo (Red River)	NA	C
I404	Aitkin Agri-Peat, Inc.	Reopen Michigan Peat Mining Co.	2010-01360-DWW	D
I404	U.S. Steel Corporation - Keetac	Increase Taconite mining & Pellet Prod.	2008-02481-JKA	C
I404	Otter Tail & MN Pwr, Minnkota	240 kVW Elecrical Transmission Line	2006-07078-	C

Year 2010 Actions				
Permit Type	**Applicant**	**Project Name**	**Number**	**Action**
	Power Coop, NSP, and Great Lakes River Engy.	between Bemidji to Cohasset, Minnesota	WAB	
I404	Polk Co. Highway Department	Reconstruction of ~4.0 miles CSAH 12	2010-04015-LSP	W
I404	Red Wing Wildlife League	Shoreline Restoration/Bank Stabilization	2010-00319-SEW	C
I404	MN DOT District 2	Baudette-Clementson-Trunk Highway 11	2010-02622-LSP	C

Year 2011 Actions				
Permit Type	**Applicant**	**Project Name**	**Number**	**Action**
I404	St. Louis County	St. Louis County Road 623 Relocation	2010-00707-DWW	C
I404	Steele County, Scott Goldberg, Director	Revised app for Steele County Landfill Expansion (change in mitigation)	Old # from March 2001: 01-02083-TJF	C
I404	Corps Project	Crow River Bank Stabilization, Henn. Co. Draft Environ. Assess. & FONSI	NA	C
I404	Rainy Lake Medical Center, Bob Anderson	Rainy Lake Medical Center New Critical Access Hospital connected to Clinic	2007-05740-LSP	W
I404	Northshore Mining Company	Northshore Mining East Pit Mining Operation Expansion	2010-04573-DWW	D
I404	Minnesota Department of Transportation	Reconstruction of Trunk Highway (TH) 1 - Approximately 17.77 mile	2010-04479-LED	C
I404	Archer Daniels Midland Company	Grain Terminal and Shuttle Facility	2011-00797-TJH	C
I404	US Steel - Minntac	Expansion of Iron Ore Pellet Mine	2010-04976-JCC [Formerly 2010-00456]	C
I404	Middle-Snake Tamarac Rivers WD	Brandt Angus Impoundment & Coulee Restoration	2007-02268-WAB	W
I404	Robert Engstrom Co (Diamond Lake Wetland Bank)	Compensatory Wetland Mit. Bank Site	2008-00671-JJY	W
I404	Lake County ATV Trails	Construct 20.2 Miles of Rec Trails	2010-00722-TWP	W
I404	City of Rochester	Zumbro River/Bear and Cascade Creek Sediment Removal Project	2005-07044-DAS	C
I404	Hawkes Company, Inc.	Peat Mining Project	2011-01299-LSP	W
G404	Corps Special Public Notice	Regional General Permit (RGP -003-MN)	2011-02620-KJU	C
I404	Beltrami County Highway Department	CSAH 39	2011-02027-WAB	W
I404	Kittson County Highway Department	CSAH 38 - After the fact Permit App	2008-05061-CLJ (Larry P)	W
I404	Duluth Winnipeg and Pacific (CN) Railway	Access road widening	2011-01814-LSP	C

Year 2011 Actions

Permit Type	Applicant	Project Name	Number	Action
G404	Corps Special Public Notice - Lino Lakes & Rice Lake	Programmatic General Permit - Lino Lakes & Rice Lake Lake District Special Mgmt Plan	PGP-004-LL	W
I404	Isanti Co. Hwy Dept	CSAH 9 road improvement	2011-04489-BGO	C
I404	Todd County Public Works	Staples North/South Corridor and Railroad Grade Separation Prjct	2009-03719-LAG	W
I404	Northstar Materials, Inc.	Kelliher Quarry after-the-fact permit app	2009-0006-KJU	W
I404	Metropolitan Airports Commission	North Side Storm Sewer Project	2005-3683-MMJ	C

Year 2012 Actions

Permit Type	Applicant	Project Name	Number	Action
I404	City of Oslo, MN	flood control levee upgrade	2011-02403-BRC	C
I404	MNDOT (District 2)	TH 11 from Indus to Loman (8.67 miles)	2011-04344-LSP	C
I404	Itasca Co Hwy Dept	CSAH 5 in N. Itasca and S. Kooch - 4.8 miles	2011-04568-WAB	W
I404	Two Rivers Watershed District	Spring Brook PL 566 flood control project	2007-06035-LSP	W
I404	Gerdau Ameristeel	Cont. Sediment Remval in North Star Lake	2011-01188-MHK	W
I404	Hawkes Company, Inc.	Hawkes Peat Mine	2011-01299-LSP	W
I404	Kittson Co. Hwy. Dept.	Co. Rd 20	2012-00655-LSP	W
I404	Rice Creek Watershed District	Proposed Houle Mit Bank & Realignment of Anoka County Ditch 15 (JD 4)	2011-05236-ADB	W
I404	Roger and Donna Wilson; Stonecrest Patnership, LLP; Blaine Eco-Devo Authority	Proposed Mixed Use Development	2011-01568 -ADB	W
IFLPnon404 (CG)	MnDOT	Dresbach Bridge/I-90	Coast Guard is Lead Fed Agency; however, this project requires a 401 determination for both the CG Permit and the Corps 404 Permit	C
I404	North Shore Mining	(see above)	(see above)	C
I404	Hibb Tac (Dave's "experiment")	proposed expansion and after-the-fact approval of wetland impacts	2012-00623-DWW	W
I404	MnDOT	TH 53 (9.5 mile) improvement	2011-04731-LED	W
I404	Minn Power	Phase III Ash Landfill (construction of Cells 4 and 5)	2009-00103-LED	W
I404	Xcel Energy	Minnesota Falls Dam Removal	2011-00942-ERH	C
G404	Corps Special Public Notice	Regional General Permit (RGP-002-MN)	2012-00291-BRC	C
GFLPnon404 (NPDES)	EPA	Draft 2013 NPDES Vessel General Permit (VGP2)	NA	C

Year 2012 Actions				
Permit Type	**Applicant**	**Project Name**	**Number**	**Action**
I404	Pine County Public Works		2010-05031-BGO	W
I404	Mn/DOT -	Stillwater Bridge	2005-00073-DJS	C
I404	US Steel - Minntac	Parkville Creek Mitigation	2012-00415-JCB	D
I404	Minnehaha Creek	Restoration Reach 20	2012-03067-MMJ	W
I404	Minnehaha Creek Watershed District -	2012-01362-MTS		W
I404	Lock & Dan #4 Scour Repair Mississippi River.	Civil project	Civil project - no number	W
I404	Southern MN Beet Sugar		2008-01583-JJY	W
IFPLnon404 (CG)	St. Croix Crossing		2005-00073-DJS	C
I404	Clearwater River Watershed District - Kingston Wetland		2011-05364-JJY	W
I404	US Steel - Minntac - Palisades II		2012-04127-JCB	W
I404	CN Railway	Duluth Harbor Railcar and Ship Loading Improvements	2012-00179-WMS	D
I404	MnDOT District 2	Rehabilitaion of TH 310 Roseau to the Canadian Border	2012-03719-LSP	W
I404	Northern Conservation - William Creeks Wetland Bank	Northern Conservation - William Creeks Wetland Compensatory Mitigation Bank Proposal	2010-00739-DWW	W
I404	Great River Energy	21-Miles of Transmission Lines and New Ortman Substation	2012-00787-LSP	W
I404	Metro Council Environmental Services	Two 42" Forcemains installed below the floor of the Mississsippi River To/from Fridley /Brooklyn Park, MN	2012-04912-ADB	C
IFLPnon404 (FERC)	City of Hastings, MN and FERC	Mississippi Lock and Dam No. 2 Hydroelectric Project	Fedreal Energy Regulatory Commiss (FERC) Proj No. 4306	C
I404	USACOE and the City of Drayton, ND; ND Fish and Game Dept.; MnDNR; Cities of Fargo, ND and Moorhead, MN - Project Sponsors			D
I404	Lon Aune - Marshall County Highway Dept.	Reconstruction of 6.1-miles of County State Aid Highway (CSAH) 30	2010-01156-LSP	W

Attachment 2d notes:

The source of information contained in the table is a database maintained by MPCA's section 401 program.

Section 401 considerations that were deemed to be non-applicable or that are pending are not recorded.

The 2007 starting point was selected because it represents the time the MPCA's section 401 program made significant management changes. Prior to 2007, the program was understaffed and the majority of section 401 actions were waived.

Attachment to the Statement of Need and Reasonableness: In the Matter of Proposed Revisions of Minnesota Rules ch. 7050, Relating to Nondegradation and minor supporting changes to Minnesota Rules ch. 7001; Repeal of Minnesota Rules 7050.0180 (Nondegradation for Outstanding Resource Value Waters) and Minnesota Rules 7050.0185 (Nondegradation for All Waters); Proposed Addition of New Rules, Minnesota Rules 7050.0250 through 7050.0335 (Antidegradation), Minnesota Pollution Control Agency (MPCA)

Attachment 3. Internal MPCA memorandum of estimated cost of wastewater facility planning and its relationship to preparing antidegradation assessments under the proposed antidegradation rules

DEPARTMENT: POLLUTION CONTROL AGENCY

STATE OF MINNESOTA
Office Memorandum

DATE: October 29, 2013

TO: Bill Cole
Water Assessment & Env. Information Section
Environmental Analysis & Outcomes Division

FROM: Dave Sahli, P.E.
Principal Engineer
Municipal Wastewater Section
Municipal Division

PHONE: 651/757-2687

SUBJECT: Estimated cost of wastewater facility planning and its relationship to preparing antidegradation assessments under the proposed antidegradation rules

This memo provides a rough estimate of the costs associated with wastewater facility planning and how some of those costs are shared with preparing antidegradation assessments as required by the proposed antidegradation rules. It is important to note that this evaluation does not include estimates of implementation or construction cost for specific treatment alternatives or technologies. It is expected that similar facilities completing antidegradation assessments on different receiving waters could have significantly different recommendations and costs. The receiving water's current water quality conditions, impacts to existing water quality, the existing treatment system, the pollutants of concern, and other site specific factors could result in significantly different levels of analysis and treatment needs for each individual project.

Only the costs of facility planning and alternatives analyses are considered for this memo.

Background – Available Facility Planning Cost Information

There are various planning documents that are prepared for projects that compare alternatives and make recommendations. Facility plans, engineering reports, feasibility studies, etc., are typical reports prepared to evaluate options prior to implementation. The MPCA does not track the costs to complete such reports.

The Clean Water Revolving Fund (CWRF) program provides financial assistance to municipalities and requires the completion of a facility plan (Minn. R. 7077.0272) as a condition of receiving funding. The program rules require that a facility plan include an analysis of alternatives:

> *7077.0272, subp, 2, D. An analysis of all feasible treatment alternatives that are capable of meeting the applicable effluent, water quality, and public health requirements for 20 years. Where the project area is currently served by individual sewage treatment systems, the analysis of feasible treatment alternatives must be submitted on a form prescribed by the commissioner. The discussion of the considered alternatives must include:*
>
> > *(1) a comparison of the cost-effectiveness of the alternatives considered. The comparison must include a detailed breakdown of the present worth of all capital costs, annual operation and maintenance costs, equipment replacement costs, and salvage values. If excessive levels of infiltration or inflow exist, the comparison of treatment alternatives must include a comparison of the cost of eliminating excessive infiltration or inflow with the cost of transportation and treatment of the infiltration or inflow;*

Facility planning costs are eligible for funding under the CWRF program, but they are not always included in the financial assistance request. Planning costs may have already been paid for from other funding sources and refinancing through the CWRF may not be necessary or practical.

The latest available information for completed construction projects comes from the 2009 CWRF and the associated Intended Use Plan (IUP). The IUP is the prioritized list of fundable projects through the CWRF in accordance with Minn. R. 7077. Only 14 of the funded projects actually included planning costs in their funding request. Of those 14 projects, 7 were described as new or expanding. These would be the most likely to be required to perform an antidegradation assessment under the proposed rule. The requested planning costs are summarized in Table 1.

Table 1
2009 IUP Planning Costs Requested

	All requests	New or Expanding projects	Not New or Expanding
Range	$2,775 - $176,000	$4,000 – $176,000	$2,775 - $45,500
Mean	$32,360	$43,422	$24,385
Median	$17,500	$15,000	$25,000

A cursory review of the individual projects that included planning costs in their funding requests shows that the cost of planning is highly variable and dependent on project scope and site specific conditions. For example, both small and large facilities accounted for some of the highest and lowest costs.

For new or expanding projects, the high variability of costs is also evident by the relatively large difference between the mean and the median. The median is the middle value of the costs when arranged in ascending order. Half of the costs were higher and half were lower.

Based on this information, the average cost for facility planning for a new or expanding project can reasonably be expected to be approximately $43,000.

Relationship of costs associated with facility planning and those associated with the preparation of antidegradation assessments under the proposed rules

The preparation of facility plans and antidegradation assessments both require an alternatives analysis. Much of the cost associated with a facility plan's alternatives analysis will be shared with that needed for an antidegradation assessment. However, the preparation of an antidegradation assessment will incur additional cost associated with a more detailed evaluation of impacts to existing water quality.

Note that the planning costs in Table 1 fall within the range of estimated costs for conducting antidegradation assessments in other states (Table 2).

Table 2
Antidegradation Assessment Costs from other States

State	Simple Assessments	Complex Assessments
Iowa	$4,125	$16,025
Indiana	$4,000	$48,000
Missouri	$11,200	$94,300

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Attachment to the Statement of Need and Reasonableness: In the Matter of Proposed Revisions of Minnesota Rules ch. 7050, Relating to Nondegradation and minor supporting changes to Minnesota Rules ch. 7001; Repeal of Minnesota Rules 7050.0180 (Nondegradation for Outstanding Resource Value Waters) and Minnesota Rules 7050.0185 (Nondegradation for All Waters); Proposed Addition of New Rules, Minnesota Rules 7050.0250 through 7050.0335 (Antidegradation), Minnesota Pollution Control Agency (MPCA)

Attachment 4. Conducting antidegradation alternatives analyses for individual NPDES wastewater permits – a suggested approach

I. Introduction

The proposed antidegradation rules require that existing uses and the water quality necessary to preserve exceptional outstanding resource value water (ORVW) characteristics be maintained. High water quality (i.e., that quality better than levels to support aquatic life and recreation[1]) may be lowered, but only under specific conditions. These conditions include all of the following:

- the degradation is necessary
- the degradation is important to accommodate important economic and social development
- there is an opportunity for public participation and intergovernmental cooperation
- all applicable state and federal surface water pollution control statutes and rules are achieved

These requirements are implemented through the issuance and enforcement of permits[2] issued by the Minnesota Pollution Control Agency (MPCA) which regulate surface water pollution. With limited exceptions[3], antidegradation procedures are required when a permit application is made for a regulated activity that is anticipated to result in a net increase in loading or other causes of degradation to surface waters of the state.

These guidelines address the question of whether proposed degradation of high water quality is necessary for activities covered under individual National Pollutant Discharge Elimination System (NPDES) wastewater permits. When a proposed activity is anticipated to result in a net loading increase to high water quality, the applicant is required to provide an alternatives analysis. The goal of the analysis is to identify pollution control measures which minimize degradation, yet are prudent and feasible. From this analysis the applicant must identify the least degrading prudent and feasible alternative. A "feasible alternative" is defined as "a pollution control alternative that is consistent with sound engineering and environmental practices, affordable, and legal and that has supportive governance that can be successfully put into practice to accomplish the task". A "prudent alternative" is defined as "a pollution control alternative selected with care and sound judgment".

Note that alternatives analyses conducted to protect high water quality will be limited to parameters of concern which:

- are pollutants reasonably expected in a discharge or as a result of a proposed activity;
- are anticipated to cause degradation (i.e., measurable change to existing water quality made or induced by human activity resulting in diminished conditions of surface waters);

[1] Where water quality standards have been adopted into rule, high water quality means the quality is better than the Class 2 (Aquatic Life and Recreation) water quality standards.

[2] Permits include National Pollutant Discharge Elimination System permits and Clean Water Act section 401 certifications of federal licenses and permits.

[3] Proposed R. 7050.0275 provides exemptions from antidegradation procedures.

- have Class 2 numeric or narrative standards; and
- present the greatest risk of degradation.

Identifying parameters of concern is done prior to the alternatives analysis and will require consultation between the applicant and the MPCA. It is the MPCA that will ultimately decide which parameters will be reviewed because it is the MPCA which is responsible for making antidegradation determinations.

Although not discussed in this document, applicants for individual NPDES wastewater permits will need to provide an assessment of the extent existing high water quality will be impacted as a result of implementing the least degrading prudent and feasible alternative. Additionally, applicants will need to provide a justification for degrading high water quality based on important economic and social development resulting from the project. The justification will entail a comparison of the economic conditions and social services prior to initiation of the project to the economic condition and social services when the project is fully implemented.

Those applying for individual permits which require antidegradation procedures are encouraged to consult with the MPCA early in the planning stages. This will help ensure the applicant has an understanding of the required information and allow the applicant and the MPCA to work together in identifying the least degrading prudent and feasible alternative.

The following steps are a suggested approach for identifying the least degrading prudent and feasible alternative:

1. Identify alternatives that avoid net increases in loading and minimize degradation.
2. Eliminate from consideration alternatives that:
   - are not consistent with sound engineering practices;
   - are not consistent with sound environmental practices; and
   - are not legal.
3. Include an analysis of the cost of each alternative.
4. Identify alternative(s) that result in the least degradation yet will not cause substantial economic impacts.
   - 4A. Rank alternatives from least degrading to most degrading.
   - 4B. Starting with the highest ranked (i.e., least degrading) alternative, assess whether its implementation would result in substantial economic impacts. If the assessment indicates that the highest ranked alternative would result in substantial economic impacts, the next highest ranked alternative is evaluated until one is found that will not result in substantial economic impacts.

This suggested approach is in no way binding and may be replaced or supplemented with other sufficiently justified methods of analysis. The approach utilizes EPA's "Interim Economic Guidance for Water Quality Standards" (EPA-823-B-95-002 (1995)) which presents one set of tests for public-sector projects and another for private-sector projects. The worksheets referenced in this document are found on EPA's Economic Guidance for Water Quality Standards Webpage. The Webpage also contains corresponding Excel spreadsheets that provide automatic calculations once necessary information is supplied. Use of the Excel spreadsheets will save time in conducting the analysis.

Sections II and IV provide explanation of how the approach may be applied to public-sector and private-sector projects, while Sections III and V provide example alternatives analyses using hypothetical situations. The MPCA recognizes scenarios are very simple, but the intent is to provide clear illustration of the processes involved and relative outcomes. Through these examples the MPCA is not suggesting that one pollution control method is superior to another. The costs identified in the examples are for illustrative purposes only and are not necessarily meant to reflect actual costs for a given alternative.

II. Application of the suggested approach to public-sector wastewater treatment facilities

Step 1. Identify alternatives that avoid net increases in loading and minimize degradation.

In this step the applicant identifies a range of pollution control alternatives which would avoid additional loading altogether or which would minimize degradation. The following alternatives are examples that may be considered depending upon applicability; however, it is not considered a complete list:

- Holding tanks with transport to a permitted treatment system
- Pipeline conveyance to a permitted treatment system (regionalization)
- Pollution prevention, pollution minimization and/or pretreatment techniques
- Modified, additional or enhanced treatment technology alternatives and treatment levels
- Reduction in the scale of the activity, such as downsizing the project and/or implementing water conservation practices so that a land disposal method might be used
- Discharge to alternative locations
- Loading offsets/pollutant trading, such as point to point trading and point to nonpoint trading
- Recycle/reuse of pollutants and/or water
- Improved operation and maintenance of existing pollution prevention and treatment systems
- Land application and/or infiltration, such as spray irrigation, rapid infiltration, mound systems
- Alternative water supply source(s) and/or alternative water supply treatment technologies, such as a water supply with lower pollutant levels (for example lower hardness levels)

The MPCA does not expect that all of the above alternatives will be considered in every analysis. For example, the use of holding tanks with transport to permitted treatment facilities would not be reasonable for a facility discharging two million gallons per day. The applicant is encouraged to work with MPCA staff in identifying which alternatives should reasonably be evaluated.

Step 2. Eliminate from consideration alternatives that:

- are not consistent with sound engineering practices;
- are not consistent with sound environmental practices; and
- are not legal.

Sound engineering

Eliminating alternatives that are not consistent with sound engineering practices ensures only proven and reliable alternatives are considered. Pollution control technologies are continually evolving and improving. Some newer pollution control technologies hold promise in their ability to treat wastewater. The applicant may propose the implementation of such technologies but will need to provide adequate information regarding effectiveness and reliability. A particular technology may be approved by the MPCA with the condition that if the proposed technology does not meet project pollutant control targets, the applicant must adopt conventional or other pollution control measures.

Sound environmental practices

Alternatives under consideration should be consistent with sound environmental practices. Factors to consider may include:

- impacts to other media (e.g., land, air and groundwater)
- sensitivity of receiving waters to degradation
- impacts on threatened and endangered species
- potential to generate secondary environmental impacts
- timing of discharge (e.g., continuous versus seasonal discharge)
- energy use

Legal

Alternatives that cannot be legally implemented should be removed from consideration. An example of an alternative that is not legal is the use of treatment chemicals (or chemical concentrations) that are prohibited by law. Some cities may have zoning restrictions that prohibit subsurface treatment systems in certain areas.

Step 3. Include an analysis of the cost of each alternative.

The MPCA will consider alternatives that meet minimum treatment. Minimum treatment alternative(s) are defined as the alternative(s) necessary to meet the more stringent of technology-based state/federal effluent requirements or water quality-based effluent limits found in Minn. R. ch 7050/Minn. R. ch. 7053 or other applicable federal and state point source treatment requirements. Minimum treatment is the level of protection needed to ensure beneficial uses are protected. The MPCA assists prospective applicants in determining this level of treatment. For example, prospective applicants considering new or expanded municipal sewage treatment will often request preliminary effluent limits from the MPCA early in the facility planning process.

In order to develop a standardized framework for projecting, evaluating, and comparing costs associated with various pollution control alternatives, applicants should use a present value framework for reporting cost information. However, applicants may propose alternate cost-effectiveness demonstrations if appropriate. Alternative direct cost comparisons may be presented if the present value calculation is complicated by the amount of difference in the effective design lives of the alternatives examined.

The following calculation may be used to calculate the total costs of the pollution control project in present value terms:

$$P = C + O + A\left(\frac{1-(1+d)^{-n}}{d}\right) - S(1+d)^{-n}$$

Where:

P = Present value of all project costs
C = Capital (up front) cost
O = Other (up front) costs
A = Average annual operating cost
d = Discount rate, or interest rate
n = Useful life (in years) of the pollution control facility and/or equipment
S = Salvage value of facilities and land

This equation discounts all costs associated with the pollution control project into present value terms. Because capital (C) and other (O) costs are assumed to be up-front, they are already in present value terms and do not need to be discounted from some future value. Because annual operating costs will occur in the future, they need to be discounted into present value terms, based on the interest rate (i) and the term of the pollution control facility's useful life (n). Assuming a uniform value for annual operating costs (A), this is accomplished with the equation above. Finally, any salvage values (S) for the pollution control facility, land and equipment that can be recouped at the end of the useful life of the facility must be converted into their present value and subtracted from the overall present value cost of the project, which is again accomplished with the equation above.

The capital portion of public-sector project costs is typically financed over a useful life (n) of 20 years (but can be over a different term depending on case-specific circumstances) by issuing a municipal debt instrument such as a general obligation bond or a revenue bond. The portion of capital costs to be paid for with grant monies is deducted, as these costs will not need to be financed. The interest rate (i) is dependent on the type of debt instrument as well as the issuer's credit standing.

Opportunity costs may be considered in the estimate of "other costs". For example, lost opportunity costs for lots in a proposed subdivision that would be used for land application rather than housing, or losses

related to process changes that results in missed production runs are legitimate and may be considered if adequately documented.

Operating and maintenance costs should include the costs of monitoring, inspection, permitting fees, waste disposal charges, repair, administration, replacement, and any other recurring costs. All recurring costs should be stated in terms of dollars per year.

The analysis of alternatives may include a discussion on supportive governance. For example some cities, townships or sanitary districts may or may not support regionalization. A lack of supportive governance does not automatically eliminate an alternative from consideration but may require more analysis to determine the actual costs associated with implementing a given alternative.

Step 4. From all alternatives, identify the one that results in the least degradation yet will not cause substantial economic impacts.

Step 4A. Rank alternatives from least to most degrading.

When ranking alternatives the applicant will need to consider a number of factors pertinent to the proposed discharge. These may include, but are not limited to the following.

- Multiple parameters of concern
  - A single discharge may have more than one parameter of concern.
- Treatment effectiveness
  - Some alternatives will likely provide varying degrees of treatment for each parameter of concern. For example, an alternative that does a good job in treating total suspended solids (TSS) may also be effective in treating parameters associated with suspended solids, but may not have much impact on dissolved parameters.
- Relative loading rates of each parameter of concern
- Fate of parameters of concern
  - Some parameters may be conservative meaning that they remain in the water column or sediments for a long period of time (e.g., metals), while others are attenuated relatively quickly (e.g., CBOD).
  - Some parameters may through chemical, physical or biological processes change, the byproducts of which may be less or more degrading than the discharged parameter.
  - Some parameters may accumulate in aquatic plants and/or animals, while others do not.
- Sensitivity of the high quality waters:
  - Size of the water body.
  - Amount of available assimilative capacity.
  - Timing of discharge. The ranking of alternatives should reflect water quality impacts when beneficial uses are most susceptible to the effects of degradation. Streams critical conditions generally occur at low flows, such as in late summer.
  - Water quality trends. For example, even though a water may be of high quality, monitoring data may show that it will become impaired in the relatively near future due to nonpoint sources.

Considering the number and interactions of factors to be considered, the applicant is encouraged to work with MPCA staff in identifying the least degrading alternative.

Step 4B. Starting with the highest ranked (i.e., least degrading) alternative, assess whether its implementation would result in substantial economic impacts. If the assessment indicates the highest ranked alternative would result in substantial economic impacts, the next highest ranked alternative is evaluated until one is found that will not result in substantial economic impacts.

The purpose of the substantial economic impact analysis is to assess the extent to which economic development may be affected as a result of implementing the pollution control alternatives. This step utilizes EPA's "Interim Economic Guidance for Water Quality Standards" for public sector projects. The referenced worksheets are found on EPA's Economic Guidance for Water Quality Standards Webpage. The

webpage also contains Excel spreadsheets which provide automatic calculations once the necessary information is supplied. Use of the Excel spreadsheets will save time in conducting the analysis.

The analysis is not designed to determine the exact impact of pollution control costs on an entity. It merely provides indicators of whether pollution control costs would result in a substantial impact. The applicant is not obligated to use these tools, but may find them useful.

The process for determining whether the economic impact is substantial is described below in the sections on Primary and Secondary Tests. If the economic impact of implementing the top-ranked alternative is not substantial, then that alternative is preferred and should be implemented. If the economic impact of implementing this alternative is found to be substantial, the next highest ranking alternatives are evaluated until an alternative is found for which the economic impacts are not substantial. Note that a preferred alternative must not result in the removal of an existing use or permanent deviation from water quality standards. If after conducting the alternatives analysis and subsequent MPCA review the proposed activity will result in a water quality standards violation, the applicant may apply for a water quality standards variance under certain circumstances (see "Guidance for Water Quality Standard Variances", MPCA, 2013). Note that antidegradation procedures, including alternatives analyses, are still required when variances are granted.

Step 4C. Conduct Primary Test – calculate and evaluate the Municipal Preliminary Screener Value. (Worksheet D, Worksheet Q, Worksheet Q – Option A, and Worksheet S)

Whether or not minimizing high water quality degradation is likely to interfere with development due to additional public-sector costs is determined by jointly considering the results of two tests. The first test is a "screener" to establish whether the community can clearly pay for the project (Worksheet D).

To assess the burden that total pollution control costs are expected to have on households, an average annualized pollution control cost per household should be calculated for all households in the community that would bear project costs. This can be accomplished by applying the following steps (which, again, can be avoided by utilizing the EPA spreadsheets):

1. Up-front capital costs and other costs (identified in Step 3) must be converted into an annual amount. This is equivalent to the annual payment of a loan to finance these costs over a term equal to the useful life of the facility at an interest or discount rate. All up-front costs that are to be borne by the municipality (any portion of the costs that will be funded with grant monies should not be included) should be multiplied by the following annualization factor:

$$Annualization\ factor\ for\ up-front\ costs = \frac{d}{1-(1+d)^{-n}}$$

   Where, as before:
   d = Discount rate, or interest rate
   n = Useful life (in years) of the pollution control facility and/or equipment

2. Add the annual operating cost, which is already incurred on an annual basis, and doesn't need to be converted.
3. If there will be any recoverable salvage value at the end of the pollution control project, then these costs need to be converted into annualized costs and subtracted. Again, these costs need to be multiplied by an annualization factor:

$$Annualization\ factor\ for\ salvage\ values = \frac{d}{(1+d)^{n}-1}$$

4. Total annualized costs are calculated by adding the annualized up-front costs plus annual operating costs minus annualized salvage values. The per-household annualized cost is then calculated by dividing this total by the number of households that will bear the pollution control expense.

The analysis must establish which households will actually pay for pollution control and what proportion of the costs will be borne by households. Then, these apportioned project costs are added to existing pollution control costs (if there are any) already paid by the households.

If project costs were estimated for some prior year, these costs should be adjusted upward to reflect current year prices using the average annual national Consumer Price Index (CPI) inflation rate for the period. The CPI inflation rate is available from the Bureau of Labor Statistics. An additional source reporting the CPI inflation rate is the *CPI Detailed Report* (www.bls.gov/cpi/cpi_dr.htm), which is published monthly by the U.S. Department of Labor, Bureau of Labor Statistics. Alternatively costs may be calculated using cost indices published by the Engineering News-Record Cost (see http://enr.construction.com/economics/). These indices provide a wide range of construction costs by large metropolitan areas.

In calculating the total annual cost of pollution control per household, current costs of pollution control (if there are any) that households bear must be considered along with the projected annual costs of the proposed pollution control project. The existing cost per household usually can be obtained from the most recent municipal records. For example, use the most recent operating revenues of the sewer enterprise fund, divided by the number of households served. If the portion of proposed project costs that households are expected to pay is known or is expected to remain unchanged, then use Worksheet Q to calculate the total annual cost of pollution control per household. If the portion paid by households is based on flow, then refer to Worksheet Q: Option A as well.

The Municipal Preliminary Screener (Worksheet D) estimates the total per household annual pollution control costs to be borne by households (existing costs plus those attributable to the proposed project) as a percentage of median household income. The screener is written as follows:

$$Municipal\ Preliminary\ Screener = \frac{Annual\ pollution\ control\ cost\ per\ household}{Median\ household\ income} \times 100$$

Median household income information for many municipalities is available from the U.S. Census. To estimate median household income for the current year, use the CPI inflation rate for the period between the year that median household income is available and the current year.

Depending on the results of the screener, the community is expected to incur small, mid-range, or large economic impacts (see Worksheet S). For a given alternative, if the average annual cost per household (existing annual cost per household plus the incremental cost related to the proposed project) is less than 1.0% of median household income, then the cost of implementing the pollution control measure is not expected to impose a substantial economic hardship on households and would likely not interfere with economic development. In such cases, the applicant should implement the alternative because it is the one that results in the least degradation yet is prudent and feasible. Continuing on to the next step is generally not necessary. However, the applicant may choose to evaluate the alternative by conducting the Secondary Tests if he or she believes debt, socioeconomic and other financial factors would show that implementation of the alternative does indeed cause substantial economic impacts.

Communities are expected to incur mid-range impacts when the ratio of average annual pollution control costs to median household income is between 1.0 and 2.0%. In these situations, the applicant moves on to the Secondary Tests for further evaluation of the alternative.

If the average annual cost per household exceeds 2.0% of median household income, then the alternative likely places a large financial burden on many of the households within the community and the cost of implementing the pollution control measure may interfere with economic development. Again the applicant moves on to the Secondary Tests for further evaluation of the alternative. An exception to conducting the Secondary Tests may be where a Municipal Preliminary Screener Value is very high (e.g., above 5). In these cases the applicant, in consultation with the MPCA, could remove the alternative from further evaluation and move on to evaluating the next ranked alternative.

Step 4D. Conduct Secondary Tests – debt, socioeconomic and financial indicators. (Worksheet T and Worksheet U)

The Secondary Tests are designed to build upon the characterization of community identified in the Municipal Preliminary Screener. The Secondary Tests indicate the community's ability to obtain financing and describe the socioeconomic health of the community. Indicators describe debt, socioeconomic, and

financial management conditions in the community. Using these indicators and the scoring system described below, the impact of the pollution control costs is estimated. Specifically, applicants are required to present the following indicators for the community:

- **Debt indicators**
  - Bond Rating (if available) - a measure of credit worthiness of the community;
  - Overall Net Debt as a Percent of Full Market Value of Taxable Property - a measure of debt burden on residents within the community;
- **Socioeconomic indicators**
  - Unemployment Rate - a measure of the general economic health of the community;
  - Median Household Income - a measure of the wealth of the community;
- **Financial management indicators**
  - Property Tax Revenue as a Percent of Full Market Value of Taxable Property—a measure of the funding capacity available to support debt based on the wealth of the community; and
  - Property Tax Collection Rate—a measure of how well the local government is administered.

Reference tables provided at the end of this document list potential data sources for secondary test indicators and example data sources for secondary test for two different communities.

Worksheet T can be used to estimate each of the indicators. The table below summarizes the indicators and what is considered to be a strong, mid-range, or weak rating.

Secondary Indicators	Weak	Mid-Range	Strong
Bond Rating	Below BBB (S&P) Below BAA (Moody's)	BBB (S&P) BAA (Moody's)	Above BBB (S&P) or Baa (Moody's)
Overall Net Debt as Percent of Full Market Value of Taxable Property	Above 5%	2%-5%	Below 2%
Unemployment	More than 1% above National Average	National Average	More than 1% below National Average
Median Household Income	More than 10% below State Median	State Median	More than 10% above State Median
Property Tax Revenues as a Percent of Full Market Value of Taxable Property	Above 4%	2%-4%	Below 2%
Property Tax Collection Rate	< 94%	94% - 98%	> 98%

The secondary score is calculated for the community by weighting each indicator equally and assigning a value of 1 to each indicator judged to be weak, a 2 to each indicator judged to be mid-range, and a 3 to each strong indicator. A cumulative assessment score is arrived at by summing the individual scores and dividing by the number of factors used. Worksheet U guides the applicant through this calculation. The cumulative assessment score is evaluated as follows:

- less than 1.5 is considered weak
- between 1.5 and 2.5 is considered mid-range
- greater than 2.5 is considered strong

If the applicant is not able to develop one or more of the six indicators, he or she must provide an explanation as to why the indicator is not appropriate or not available. Since the point of the analysis is to measure the overall burden to the community, the debt and socioeconomic indicators are assumed to be better measures of burden than the financial management indicators. Consequently, if one of the debt or socioeconomic indicators is not available, the applicant should

average the remaining financial management indicators and use this averaged value as a single indicator with the remaining indicators. This averaging is necessary so that undue weight is not given to the financial management indicators.

Step 4E. Assess whether the costs of implementing an alternative would be substantial.

The results of the Primary and Secondary Tests are considered jointly in determining whether the community is expected to incur substantial impacts that would interfere with the development. As shown in the table below, the cumulative assessment score for the community is combined with the estimated household burden. The combination of factors establishes whether impacts can be expected to be substantial.

Assessment of substantial impacts matrix

Secondary Score	Municipal Preliminary Screener		
	Less than 1.0%	Between 1.0 and 2.0%	Greater than 2.0%
Less than 1.5	?	X	X
Between 1.5 and 2.5	†	?	X
Greater than 2.5	†	†	?

In the matrix, "X" indicates that the impact is likely to interfere with economic development. The closer the community is to the upper right hand corner of the matrix, the greater the likelihood. Similarly, "†" indicates that the impact is not likely to interfere with development. The closer to the lower left hand corner of the matrix, the smaller the likelihood. Finally, the "?" indicates that the impact is unclear and the applicant will need to justify why the alternative is not prudent or feasible.

III. Example scenario; public-sector

The town has a population of 200 households. This is currently an unsewered town where existing wastewater facilities include individual subsurface sewage treatment systems (ISTS), cesspools, septic tanks connected to drain tiles that discharge to drainage ditches and straight pipes to drainage ditches. Some of the ISTS are conforming, however many are failing and the cesspools and discharge lines are not in conformance with Minnesota rules. The city is proposing to upgrade their system and examine the different options available for treatment and disposal.

The town is located seven miles from a larger city with its own wastewater treatment facility which has capacity to accept the additional flows. Antidegradation procedures have already been conducted for the facility based on its current design capacity. If the facility were to accept additional loading that would exceed its design capacity, the now-regional facility itself would need to undergo antidegradation procedures. If the facility is unable to accept additional loading, the same small Class 2B stream that the larger city discharges to is a likely candidate to receive treated wastewater from the smaller town's facility.

The town is a bedroom community for the larger, nearby city. The larger city is financially well off and has a strong commercial and industrial base. Many people who work in the larger city are moving to the small town to live but continue to work in the larger city. The median household income, estimated at $42,000, was obtained from the most recent census data. The CPI is used to inflate this to the current year. The annual average CPI in 2000 was 172.2 while the current CPI value is 236.3. Thus the current inflation-adjusted median household income for this town is: $\$42{,}000 \times \frac{236.3}{172.2} = \$57{,}634$. (Note: adjusting the median household income from the census year when it was determined to the current inflation-adjusted value can be done within the spreadsheets provided by the EPA.)

The applicant consulted with the MPCA early in the planning process and the MPCA identified phosphorus and standard secondary treatment parameters (5-day carbonaceous biochemical oxygen demand ($CBOD_5$), total suspended solids (TSS) and fecal coliform) as the parameters of concern. The MPCA also directed the applicant to MPCA's Environmental Quality Information System (EQuIS) database which provides flow and parameter concentration data within the nearby Class 2 stream. The stream, which is of high quality for the

parameters of concern, experiences low flows during the summer months. Depending on the alternatives considered, nitrate (NO_3) contamination may also be a concern because of the high water table.

Step 1. Identify alternatives that avoid net increases in loading and minimize degradation.

The applicant has identified the following six alternatives:

Alternative 1 – City-wide collection and connection to a nearby city's facility ("Regionalization").

This option includes a centralized collection system with service connections to all properties and a force main to a nearby city's larger facility that has treatment capacity to accept the additional flows. The nearby facility would then be referred to as a regional facility.

Alternative 2 – Individual subsurface sewage treatment systems ("ISTS systems").

This option includes ISTS facilities for each domestic location and specially sized facilities for any commercial/industrial facilities in town. All ISTS use septic tanks, soil-based treatment and subsurface soil discharge. Since there is no surface water discharge, degradation of surface waters is not anticipated. Impacts to ground water are considered when a subsurface discharge is proposed and adequate nitrate levels at the property boundary need to be achieved.

Alternative 3 – City-wide collection and centralized LSTS ("LSTS system")

This option includes a centralized collection system with service connections to all properties and a centralized soil-based treatment and subsurface soil discharge. Like Alternative 2, there is no surface water discharge and no resulting surface water impacts. The same assumptions made in Alternative 2 regarding impacts to groundwater apply to this option.

Alternative 4 – City-wide collection and a mechanical facility ("Mechanical facility")

This option includes a centralized collection system with service connections to all properties, a force main from the city to the plant site and a mechanical plant. This also includes a continuous surface water discharge. Secondary treatment limits and a phosphorus limit would likely be included in the permit for this facility.

Alternative 5 – City-wide collection and a stabilization pond with spray application ("Pond/spray")

This option includes a centralized collection system with service connections to all properties, a force main from the city to the pond site and a 2 or 3-cell stabilization pond system. Instead of a surface water discharge, this option includes a spray application system for effluent disposal. Nitrate contamination of ground water will also need to be evaluated.

Alternative 6 – City-wide collection and a controlled discharge stabilization pond ("Pond")

This option includes a centralized collection system with service connections to all properties, a force main from the city to the pond site and a 2 or 3-cell stabilization pond system. This also includes a controlled surface water discharge. Secondary treatment limits and a phosphorus limit would likely be included in the permit for this facility. Phosphorus removal could be accomplished through chemical application to the pond system by using a pontoon boat or through chemical addition using a control structure between the primary pond(s) and the secondary pond.

Step 2. Eliminate from consideration alternatives that:

- are not consistent with sound engineering practices;
- are not consistent with sound environmental practices; and
- are not legal.

Alternatives 2 and 3 (ISTS and LSTS systems) are not viable because after a review of ground water elevation data it was determined that in much of the area groundwater is too high to provide the proper separation between the ground water and the ISTS or LSTS trench. Also, it was determined that most town lots are too small to allow placement of a drain field and achieve proper setback from wells. Options 1, 4, 5 and 6 are the remaining reasonable alternatives. Area requirements needed for the placement of a pond and spray irrigation system or a mechanical plant can reasonably be met. Nitrate contamination of ground water from

spray irrigation (Alternative 5) is not a concern in this case because the large area in which spraying would occur, attenuation in the soil, and plant uptake mitigates the impacts.

Step 3. Include an analysis of the cost of each alternative.
The table below shows the present value for each of the alternatives.

Alternative (Treatment Option)	Present Value*
Alternative 1 – Regionalization	$4.5 million
Alternative 4 – Mechanical facility	$3.1 million
Alternative 5 – Pond/spray	$3.2 million
Alternative 6 – Pond	$3.0 million

*Present value calculated assuming 2% interest rate over a 20-year term.

Step 4. For all alternatives, identify the one that results in the least degradation yet will not cause substantial economic impacts.

Step 4A. Rank alternatives from least to most degrading.

The applicant considered the factors described on pages 4 and 5 and has ranked the alternatives from least to most degrading.

Alternative (Treatment Option)	Least degrading rank
Alternative 5 – Pond/spray	1
Alternative 1 – Regionalization	1A*
Alternative 6 – Pond	2
Alternative 4 – Mechanical facility	3

*See discussion below regarding regionalization

Alternative 5 is the least degrading because it completely eliminates the discharge to the stream. Alternative 1 could also be the least degrading depending on the regional facility. If the regional facility also has spray application there would be no discharge and therefore also least degrading. This analysis can become difficult if the regional facility has a discharge. If the regional facility has capacity to accept the increased flows without expansion, an argument could be made that this is also the least degrading alternative since there is no increase in loading beyond what is already permitted. Also, if the regional facility discharges to a different water body an argument could be made that this is also the least degrading alternative since there would be no increase in loading to the water body under consideration by the other alternatives. Of course this may cause a separate analysis of the regional facility and its degradation impact on its receiving water body, especially if an expansion of the regional facility is necessary. However, in this example we are assuming the regional facility has a discharge and has enough capacity to accept the additional flows and loadings. However, since it has a discharge and the discharge is to the same receiving water, it is more degrading than Alternative 5. Between Alternatives 4 and 6, the factor which has the greatest influence on ranking is the seasonal difference in the stream flow. Controlled discharge pond systems release effluent during periods of high flow (i.e., the wettest 180 consecutive days) allowing for greater dilution which in turn results in lower concentrations of pollutants in the stream. The mechanical facility would discharge year-round, including summer months when there is the least dilution. In this situation the summer flow is low enough that the concentration of at least one parameter of concern in the stream would approach

exceedance of water quality standards. For this reason, the Alternative 6 (Pond system) was considered less degrading than the Alternative 4 (Mechanical facility).

Step 4B. Starting with the highest ranked (i.e., least degrading) alternative, assess whether its implementation would result in substantial economic impacts. If the assessment indicates that the highest ranked alternative would result in substantial economic impacts, the next highest ranked alternative is evaluated until one is found that will not result in substantial economic impacts.

Starting with the least degrading alternative (Alternative 5) the applicant determines whether the pollution control costs are substantial using Worksheet D. If they are, the applicant conducts the analysis for the next highest ranked alternative (Alternative 1) and so on until an alternative is found for which the economic impacts are not substantial.

Step 4C. Conduct Primary Test – calculate and evaluate the Municipal Preliminary Screener Value.

The table below shows total annualized cost, annualized cost per household and the percent of median household income of the remaining alternatives. The total annualized costs were calculated using the financing interest rate over the term of the loan. For example, Alternative 4 entails capital costs (which include construction costs for both the collection system and treatment facility) of $2,388,200. The project is able to get financing of these capital costs at an interest rate of 2.0% over a 20-year term. Using this rate and term, the total capital cost is converted into an annualized cost based on a financing interest rate and term, which is then added to the estimated annual operations and maintenance cost for the project of $64,260 to get a total annualized cost of $189,283. Using Worksheet Q annualized cost per household for each of the 200 households in this community equates to $946. The final column in the table shows the per-household annual pollution control costs as a percentage of median household income for the community. Again using Alternative 4 as an example, the annualized cost per household of$946 is divided by the community's inflation-adjusted median household income of $57,634 and then multiplied by 100 for a Preliminary Municipal Screener value of 1.64%. Similar calculations are done for each of the other treatment options.

Least degrading rank	Alternative (Treatment Option)	Total Annualized Cost	Annualized Cost per Household	Preliminary Municipal Screener Value
1	Alternative 5 – Pond/spray	$198,786	$994	1.72%
1A	Alternative 1 - Regionalization	$272,711	$1,364	2.37%
2	Alternative 6 – Pond	$186,391	$932	1.62%
3	Alternative 4 – Mechanical facility	$189,283	$946	1.64%

Step 4D. Conduct Secondary Tests – debt, socioeconomic and financial Indicators.

Worksheets T and U can be used to estimate secondary indicators, which as described above include six different indicators of debt, socioeconomic, and financial management conditions. The table below lists the secondary test inputs for this particular community.

Data	Source	Value
Direct Net Debt ($)	Community Financial Statements Town, County or State Assessor's Office	$1,000,000
Overlapping Debt ($)	Community Financial Statements Town, County or State Assessor's Office	$0
Market Value of Taxable Property ($)	Community Financial Statements	$12,000,000

Data	Source	Value
	Town, County or State Assessor's Office	
Bond Rating (for uninsured bonds)	Standard and Poor's or Moody's	Baa
Community Unemployment Rate (%)	Census of Population Regional Data Centers	5.3%
National Unemployment Rate (%)	Bureau of Labor Statistics	7.2%
Community Median Household Income (not adjusted for inflation)	Census of Population	$42,000
State Median Household Income (for same time period as Community MHI) ($)	Census of Population	$58,906
Property Tax Collection Rate (%)	Community Financial Statements Town, County or State Assessor's Office	88.0%
Property Tax Revenues ($)	Community Financial Statements Town, County or State Assessor's Office	$80,000

All of the above data is entered into Worksheet T and then Worksheet U is used to calculate the secondary score.

The table below shows how this community scores for all of the secondary test indicators.

Indicator	Secondary Indicators			Score
	Weak [a]	Mid-Range [b]	Strong [c]	
Bond Rating **Worksheet T**	Below BBB (S&P) Below Baa (Moody's)	BBB (S&P) Baa (Moody's)	Above BBB (S&P) Above Baa (Moody's)	2
Overall Net Debt as Percent of Full Market Value of Taxable Property **Worksheet T**	Above 5%	2% - 5%	Below 2%	1
Unemployment **Worksheet T**	Above National Average	National Average	Below National Average	3
Median Household Income **Worksheet T**	Below State Median	State Median	Above State Median	1
Property Tax Revenues as a Percent of Full Market Value of Taxable Property **Worksheet T**	Above 4%	2% - 4%	Below 2%	3
Property Tax Collection Rate **Worksheet T**	< 94%	94% - 98%	> 98%	1

a. Weak is a score of 1 point

b. Mid-Range is a score of 2 points

c. Strong is a score of 3 points

SUM	**11**
AVERAGE	**1.8**

For each secondary indicator, a score of 1 indicates Weak performance for this indicator (Overall Net Debt as a Percent of Full Market Value of Taxable Property, Median Household Income and Property Tax Collection Rate in this example); a score of 2 indicates Mid-Range performance (Bond Rating in this example); and a score of 3 indicates Strong performance (Unemployment and Property Tax Revenues as a Percent of Full Market Value of Taxable Property in this example). Summing the scores for all six indicators yields a total score of 11, and an average score of 1.8. Note that the Secondary Test scores are just dependent on the characteristics of the community and are independent of the treatment alternative being considered. Also note that if the data was not available to calculate all six indicators, then the average of all the indicators that could be calculated would be considered.

Step 4E. Assess whether the costs of implementing an alternative would be substantial. (Public Projects)

The results of both the Primary and Secondary Tests are considered jointly in determining whether the community is expected to incur substantial impacts that would interfere with development. The Substantial Impacts Matrix is used to assess the combination of the cumulative assessment score (Secondary Tests) with the estimated household burden (Municipal Preliminary Screener) to ascertain whether the economic impacts of each feasible pollution control alternative would be expected to be substantial. The three alternatives scored according to the Substantial Impacts Matrix, are as follows:

	Municipal Preliminary Screener		
Secondary Score	**Less than 1.0%**	**Between 1.0 and 2.0%**	**Greater than 2.0%**
Less than 1.5			
Between 1.5 and 2.5		Pond/spray; Pond; Mechanical facility	Regionalization
Greater than 2.5			

Recall, from the initial explanation of the Substantial Impacts Matrix, the cell in the table where the Regionalization alternative fall entail impacts that are likely to be substantial. Therefore, this alternative is eliminated from consideration. The only remaining alternatives are the Pond/spray, Pond and Mechanical facility options, in spite of the fact that all three of these alternatives fall within a cell where economic impacts are unclear. In this case the least degrading prudent and feasible alternative is the Pond/spray system. This is because, while the Municipal Preliminary Screener indicated that the community may be able to afford to pay for either of these three alternatives, the Pond/spray system is less degrading. Note, however, that the Pond/Spray system is not the least costly alternative. The Pond alternative, with an annual per household cost of $932 (compared to $994 for the Pond/spray alternative) places a lesser economic burden on this town's households. Thus, if further analysis shows the Pond/spray alternative produces substantial economic impacts, the Pond alternative may be considered. There appears to be no reason to consider the Mechanical facility alternative, however, since it is both more degrading and more expensive than the Pond alternative.

Reference Table 1. Potential data sources for secondary test inputs.

Potential Data Sources for Secondary Test Inputs
Description: This worksheet provides potential sources for the socioeconomic data required to perform the calculations in this spreadsheet. This worksheet is for informational purposes only. No input is required.

Indicator	Potential Data Source
Direct Net Debt	Community Financial Statements
Overlapping Debt	Community Financial Statements
Market Value of Property	Community Financial Statements. If community-specific information cannot be found, median property values by state can be found through American Community Survey Reports: http://www.census.gov/prod/2009pubs/acsbr08-6.pdf Combine data with the number of properties in the community.
Bond Rating	Standard and Poor's or Moody's
Community Unemployment Rate	U.S. Department of Labor, Bureau of Labor Statistics: Local Area Unemployment Statistics: http://www.bls.gov/lau/#tables
National Unemployment Rate	U.S. Department of Labor, Bureau of Labor Statistics: Labor Force Statistics from the Current Population Survey: http://data.bls.gov/timeseries/LNS14000000
Community Median Household Income	U.S. Census Bureau: State & County QuickFacts (select state, then county or city within state): http://quickfacts.census.gov/qfd/index.html
State Median Household Income	U.S. Census Bureau: State Median Income: http://www.census.gov/hhes/www/income/data/statemedian/
Property Tax Collection Rate	Community Financial Statements. If community-specific information cannot be found, statewide data can be found at the U.S. Census Bureau's Quarterly Summary of State & Local Taxes: http://www.census.gov/govs/qtax/
Property Tax Revenues	Community Financial Statements. If community-specific information cannot be found, statewide data can be found at the U.S. Census Bureau's Quarterly Summary of State & Local Taxes: http://www.census.gov/govs/qtax/ Scale according to size of community relative to state.

Reference Table 2. Example data sources for secondary test inputs

Example Data Sources for Secondary Test Inputs
Description: This worksheet provides two examples of where socioeconomic data required to perform the calculations in this spreadsheet may be obtained for two communities. This worksheet is for informational purposes only. No input is required.

Indicator	Example Data Sources for Fairfax County, Virginia	Example Data Sources for Brookings County, South Dakota
Direct Net Debt	Fairfax County's 2011 Comprehensive Annual Financial Report (CAFR) is available from the county's Finance website: http://www.fairfaxcounty.gov/finance/cafr.htm It provides detailed financial information for the county's primary government, including debt (page 20).	The Community Financial Statement is not available online; however the financial statements were audited in 2010 for the year ending in December 2009, and the audit report is available online: http://legislativeaudit.sd.gov/Reports/County/Brookings%20County%202009.pdf As such, the 2009 financial data, including debt, from 2009 can be used.
Overlapping Debt	Fairfax County's 2011 Comprehensive Annual Financial Report (CAFR) is available from the county's Finance website: http://www.fairfaxcounty.gov/finance/cafr.htm It provides detailed financial information for "component units" such as public schools, park authorities, and others which may be counted as overlapping entities (page 21).	The Community Financial Statement is not available online; however the financial statements were audited in 2010 for the year ending in December 2009, and the audit report is available online: http://legislativeaudit.sd.gov/Reports/County/Brookings%20County%202009.pdf This includes financial data on component units. As such, the 2009 financial data, including debt, from 2009 can be used.
Market Value of Property	Fairfax County's 2011 Comprehensive Annual Financial Report (CAFR) is available from the county's Finance website: http://www.fairfaxcounty.gov/finance/cafr.htm It provides detailed financial information for the county, including an additional statistical section which shows the assessed value of all taxable and nontaxable property in the county (page 246).	The Community Financial Statement is not available online; however, the state of South Dakota provides a recapitulation of property tax statistical information, and Brookings County has links to those documents available on its property tax website: http://www.state.sd.us/drr2/propspectax/property/publications.htm (page 60 contains the relevant information on the market value of property, as well as the property tax collection).
Bond Rating	Fairfax County's 2011 Comprehensive Annual Financial Report (CAFR) is available from the county's Finance website: http://www.fairfaxcounty.gov/finance/cafr.htm Provides the county's credits cores from both Standard and Poor's and Moody's (page XVII).	Standard and Poor's: http://www.standardandpoors.com/ratings/en/us/ Allows a search of government entities (by state under "Public Finance U.S.) to registered users (at no cost) and provides a summary of credit issuances and their associated ratings.
Community Unemployment Rate	The American Factfinder: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml Allows the user to find specific census data sets. To identify the community unemployment rate for Fairfax County, select the topic "People:Income/Earnings (Households)"; narrow the geography to Fairfax County, Virginia; and within the Search results, search for: DP03: Selected Economic Characteristics.	The American Factfinder: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml Allows the user to find specific census data sets. To identify the community unemployment rate for Brookings County, select the topic "People:Income/Earnings (Households)"; narrow the geography to Brookings County, South Dakota; and within the Search results, search for: DP03: Selected Economic Characteristics.
National Unemployment Rate	The Bureau of Labor Statistics provides national unemployment rate: http://data.bls.gov/timeseries/LNS14000000	The Bureau of Labor Statistics provides national unemployment rate: http://data.bls.gov/timeseries/LNS14000000
Community Median Household Income	The American Factfinder: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml Allows the user to find specific census data sets. To identify the community median household income for Fairfax County, select the topic "People:Income/Earnings (Households)"; narrow the geography to Fairfax County, Virginia; and within the Search results, search for: DP03: Selected Economic Characteristics.	The American Factfinder: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml Allows the user to find specific census data sets. To identify the community median household income for Brookings County, select the topic "People:Income/Earnings (Households)"; narrow the geography to Brookings County, South Dakota; and within the Search results, search for: DP03: Selected Economic Characteristics.
State Median Household Income	The American Factfinder: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml Allows the user to find specific census data sets. To identify the community median household income for Virginia, select the topic "People:Income/Earnings (Households)"; narrow the geography to Virginia; and within the Search results, search for: DP03: Selected Economic Characteristics.	The American Factfinder: http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml Allows the user to find specific census data sets. To identify the community median household income for South Dakota, select the topic "People:Income/Earnings (Households)"; narrow the geography to South Dakota; and within the Search results, search for: DP03: Selected Economic Characteristics.
Property Tax Collection Rate	Fairfax County's 2011 Comprehensive Annual Financial Report (CAFR) is available from the county's Finance website: http://www.fairfaxcounty.gov/finance/cafr.htm and provides the county's property tax collection rate on page 247.	The Community Financial Statement is not available online; however the state of South Dakota provides a recapitulation of property tax statistical information, and Brookings County has links to those documents available on its property tax website: http://www.state.sd.us/drr2/propspectax/property/publications.htm (page 60 contains the relevant information on the market value of property, as well as the property tax collection).
Property Tax Revenues	Fairfax County's 2011 Comprehensive Annual Financial Report (CAFR) available from the county's Finance website: http://www.fairfaxcounty.gov/finance/cafr.htm and provides the county's property tax revenue data (page 8).	The Community Financial Statement is not available online; however the state of South Dakota provides a recapitulation of property tax statistical information, and Brookings County has links to those documents available on its property tax website: http://www.state.sd.us/drr2/propspectax/property/publications.htm (page 60 contains the relevant information on the market value of property, as well as the property tax collection).

IV. Application of the Suggested Approach to Private-Sector Wastewater Treatment Facilities

The general approach to identifying the least degrading prudent and feasible alternative for private-sector projects is the same as that for public-sector projects. However, the means through which substantial economic impacts are determined differ. EPA guidance, worksheets and spreadsheets are again suggested tools for conducting the analysis.

Step 1. Identify alternatives that avoid net increases in loading and minimize degradation.
(Same as for public-sector projects, see pages 2-3)

Step 2. Eliminate from consideration alternatives that:

- are not consistent with sound engineering;
- are not consistent with sound environmental practices; and
- are not legal.

(Same as for public-sector projects, see pages 3)

Step 3. Include an analysis of the cost of each alternative.
As with public-sector investments (pages 3-4), the total capital costs are usually spread out over several years. Annualization calculates the amount that will be paid each year, including the financing costs. In order to allow for comparisons across cases, the analysis should assume that the applicant will borrow the capital and repay the loan in even annual installments over a twenty-year period. The assumption of twenty years is based on the likely life of the equipment. The assumption of even annual installments is made for convenience. The interest rate on the loan should be equivalent to the rate the applicant pays when it borrows money.

The financial tests described in Steps 4C through 4F compare the costs of compliance to other costs and revenues of the applicant. Compliance costs and other costs and revenues must, therefore, be calculated for the same year. The Annualized Cost of pollution control for a private-sector entity can be calculated using Worksheet R.

Step 4. For all alternatives, identify the one that results in the least degradation yet will not cause substantial economic impacts.

Step 4A. Rank alternatives from least to most degrading.
(Same as for public-sector projects, see pages 4 and 5)

Step 4B. Starting with the highest-ranked (i.e., least degrading) alternative, assess whether its implementation would result in *substantial* economic impacts. If the assessment indicates the highest ranked alternative would result in substantial economic impacts, the next highest ranked alternative is evaluated until one is found that will not result in substantial economic impacts.

Financial Tests for Private-Sector Projects

Four general categories of financial tests are used to determine if maintaining high-quality water will interfere with significant economic development. The four categories are divided into a primary measure of financial impacts and three secondary measures of financial impacts:

Primary Measure

- Profit -- how much would the private sector entity's profits decline due to pollution control expenditures?

Secondary Measures

- Liquidity -- how easily can the entity pay its short-term bills?
- Solvency -- how easily can the entity pay its fixed and long-term bills?
- Leverage -- how much money can the entity borrow?

Profit and solvency ratios are calculated both with and without the additional compliance costs (taking into consideration the entity's ability, if any, to increase its prices to cover part or all of the costs). Comparing these ratios to each other and to industry benchmarks provides a measure of the impact on the entity. Since antidegradation reviews involve new or expanded operations, the ratios often will be calculated using estimated values from pro-forma income statements and balance sheets prepared for the development.

For all of the tests, it is important to look beyond the individual test results and evaluate the total situation of the entity. While each test addresses a single aspect of financial health, the results of the four tests should be considered jointly to obtain an overall picture. The results should be compared with the ratios for other entities in the same industry or activity.

The primary and secondary measures are described below, along with an example of specific tests to be used. While there are several ratios that could be used for each test, to simplify the presentation only one ratio per test is described. In most cases, interpreting the results requires comparisons with typical values for the industry. Among the sources that provide comparative information are: the Risk Management Association's *Annual Statement Studies*, *Moody's Industrial Manual*, Dun and Bradstreet's *Dun's Industry Norms*, and Standard & Poor's *Industry Surveys*. The *Annual Statement Studies*, *Dun's Industry Norms*, and Standard & Poor's *Industry Surveys* provide composite statistics for firms grouped into various manufacturing and service industries. The *Moody's Industrial Manual* provides detailed financial information on individual firms that can be used for comparison purposes.

Step 4B.i. Profit Test

The Profit Test measures the development's earnings if it is required to provide pollution control necessary to maintain the high-quality waters and if it is not required to do so. If maintaining high-quality water would result in considerably lower profits, then the development might not take place.

Two pieces of information are needed for the Profit Test. The first piece is the total annual cost of the required pollution control from Worksheet R. The second piece is the earnings information from the entity's income statement (Worksheet V).

$$\textit{Profit Test} = \frac{\textit{Earnings Before Taxes}}{\textit{Revenues}}$$

The Profit Test should be calculated with and without the cost of the pollution control. In the former case, the annualized cost of pollution control (including O&M) is subtracted from the discharger's estimated earnings before taxes (revenues minus costs excluding income taxes). The Profit Test can be calculated using Worksheets V and W. These profit rates should be compared to those for facilities in similar lines of business, using data in *Moody's Industrial Manual*, *Dun & Bradstreet's Industry Norms and Key Business Ratios*, *Standard & Poor's Industry Surveys*, or Risk Management Association's *Annual Statement Studies*.

The degree to which the discharger is able to raise prices is difficult to predict, and depends on many factors. Considerations should include the level of competition in the industry, the likelihood of competitors' facilities facing similar project costs, and the willingness of consumers to pay more for the product.

Step 4B.ii. Liquidity Test

Liquidity is a measure of how easily a discharger can pay its short-term bills. One measure of liquidity is the Current Ratio, which compares current assets with current liabilities. Current assets include cash and other assets that are or could reasonably be converted into cash during the current year. Likewise, current liabilities are items that must be paid within the current year.

The Current Ratio is calculated by dividing current assets by current liabilities.

$$\textit{Current Ratio} = \frac{\textit{Current Assets}}{\textit{Current Liabilities}}$$

The Current Ratio can be calculated using Worksheet X. The general rule is that if the Current Ratio is greater than 2, the entity should be able to cover its short-term obligations. So, in general if even with pollution control costs factored in, the Current Ratio is greater than 2, then compliance would not likely interfere with significant economic development. Frequently, lenders require this level of liquidity as a prerequisite for lending. This rule (Current Ratio > 2) may not, however, be appropriate for all types of private entities. The Current Ratio of the discharger in question should be compared with ratios for other dischargers in the same line of business.

Step 4B.iii. Solvency Test

Solvency is a measure of an entity's ability to meet its fixed and long-term obligations. These obligations are bills and debts that are owed on a regular basis for periods longer than one year. Solvency tests are commonly used to predict financial problems that could lead to bankruptcy within the next few years.

As with liquidity, there are several possible tests for solvency. One solvency test, the Beaver's Ratio, compares cash flow to total debt. This test has been shown to be a good indicator of the likelihood of bankruptcy.

$$\textit{Beaver's Ratio} = \frac{\textit{Cash Flow}}{\textit{Total Debt}}$$

The Beaver's Ratio can be calculated using Worksheet Y. Cash flow is a measure of the cash the entity has available to it in a given year. Since depreciation is an accounting cost -- a cost that does not use any currently available revenues -- it is added back to reported net income after taxes to get cash flow. Total debt is equal to the current debt for the current year plus the long term debt, since current debt includes that part of long-term debt that is due in the current year.

If the Beaver's Ratio is greater than 0.20, the development is considered to be solvent (i.e., can pay its long-term debts). Thus, in general, if even with pollution control costs considered, Beaver's Ratio is greater than 0.20, then compliance would not likely interfere with significant economic development. If the ratio is less than 0.15, the development may be insolvent (i.e., go bankrupt). If the ratio is between 0.15 and 0.20, then future solvency is uncertain.

Step 4B.iv. Leverage Test

Leverage tests measure the extent to which a firm has fixed financial obligations and thus indicates how much more money a firm is capable of borrowing. Firms that rely heavily on debt may find it difficult and expensive to borrow additional funds. One commonly used measure of leverage is the Debt to Equity Ratio.

$$\textit{Debt/Equity Ratio} = \frac{\textit{Long-Term liabilities}}{\textit{Owner's Equity}}$$

The Debt to Equity Ratio can be calculated using Worksheet Z. Since there are no generally accepted Debt/Equity Ratio values that apply to all types of economic activity, the ratio should be compared with the ratio of firms in similar businesses. If the entity's ratio compares favorably with the median or upper quartile ratio for similar businesses, it should be able to borrow additional funds. These ratios can be calculated using data in Risk Management Association's *Annual Statement Studies*, *Moody's Industrial Manual*, and Dun & Bradstreet's *Dun's Industry Norms*.

For entities with special sources of funding, leverage is not an appropriate measure of their ability to raise capital. Examples are agriculture and affordable housing, where special loan programs may be available. In these cases, an analysis of the probability that the project would receive this money is appropriate.

Step 4B.v. Assess whether the cost of implementing an alternative would be substantial: interpreting the results from the financial tests (Private-sector)

The financial analysis aides in the determination whether a given alternative will result in substantial adverse economic impacts. If the four tests taken together indicate that the highest ranking (i.e., least degrading) alternative causes substantial adverse economic impacts, the next highest ranked alternative is evaluated until one is found that will not result in substantial adverse economic impacts.

V. Example scenario; private-sector

An agriculture-based industry is currently connected to a municipal wastewater facility for treatment of not only the domestic waste generated by the staff, but also for treatment of the agricultural waste product generated. The industry owners are considering an expansion which would result in a change of design flow from 1.5 mgd to 2.5 mgd and are examining treatment and disposal options. The industry is located within the city limits and adjacent land for a pond system within these limits is not available. However, there is enough land available within the existing property boundaries for a mechanical facility. If the owners pursue the construction of their own on-site mechanical facility or decide to discharge from ponds outside of city limits, the receiving waters remain the same. In each case, the immediate discharge is to a Class 2 stream that does not experience low flows during the summer months. The stream feeds into a small lake in a small watershed. The lake has a low natural phosphorus load from the watershed, a long residence time with little flushing ability and a small outlet.

The applicant consulted with the MPCA early in the planning process and the MPCA identified phosphorus and standard secondary treatment parameters $CBOD_5$ and TSS as the parameters of concern. The applicant was advised that if land application is considered, nitrate (NO_3) contamination of groundwater may also be a concern. The MPCA directed the applicant to MPCA's EQuIS database, which provides flow and parameter concentration data of the receiving waters.

Step 1. Identify alternatives that avoid net increases in loading and minimize degradation.

Listed below are treatment and disposal options considered for phosphorus, in no specific order. The applicant has identified the following five alternatives:

Alternative 1 – Continue connection to municipal system.

This option includes continuation with the connection to the municipal system. The municipal wastewater treatment facility has plenty of permitted existing capacity to handle the increased flows and loads from the industry so there is no need for an expansion of the municipal facility. If the industry continued to be connected to the municipal system, there would be no need for an antidegradation analysis of the municipal facility since there would be no expansions beyond what is currently permitted. Since the industry is planning to increase its discharge volume and load, additional charges will be imposed on the industry by the municipality.

In this example, the assumption is that this industry is a Significant Industrial User (SIU). The first charge would be for a SIU permit. Permit fees can range anywhere from a couple of hundred dollars to possibly over $10,000, depending on flow volume. In this case we are assuming an amount of $7,400.

The next charge is a Sewer Availability Charge (SAC), which is a one-time fee imposed by a municipality or sewer district on an industry for access to the sewer system. The SAC charge is based on gallons per day discharged. The SAC charge for an existing, but expanding, industrial facility would be based on the increase in flow. A typical SAC charge could be around $2,124 per SAC unit where one SAC unit = 274 gallons per day. In this case the SAC charge would be $7,751,825 (1.0 million gallons per day increase x 1/274 gallons per day x $2,124 per SAC unit).

The industry would also pay an ongoing fee based on the flow sent to the sewer system. In this case, the fee would be $2.32 per 1,000 gallon for systems above 300,000 gpd, totaling $5,800/year.

The industry would also pay an ongoing fee based on the high strength of the waste. High strength is anything over 250 mg/L TSS or anything over 500 mg/L COD. The TSS high strength waste rate is $0.185/pound of excess TSS. The COD high strength waste rate is $0.0925/pound of excess COD. In this case, the TSS strength is not high strength, but the COD strength is high strength with an average of 600 mg/L. This would result in a high strength charge of $70,395/year.

The total of all of these fees would be $7,751,825 SAC charge plus $83,595/year.

Alternative 2 – Force main, stabilization pond with spray irrigation.

This option includes a force main from the facility location to a distant stabilization pond. At this site, in addition to the pond system, is a spray application system to allow disposal of all water. No surface water discharge exists. Since there is no surface water discharge, there is no degradation to surface waters. Impacts to ground water are considered when a surface application discharge is proposed. Proper nitrate levels at the property boundary need to be achieved. It will need to be verified that the agricultural-based waste stream can be adequately treated in a stabilization pond system. Ponds with spray application are typically designed for 210 days of storage. At a maximum rate of 1.5 mgd for 210 days, 3.15 million gallons of storage capacity would be required. This equates to about 161 acres of pond surface area, not including dikes etc. An estimated overall area needed would be about 200 acres. A rough estimate of about 240 acres of land would be needed for spray application. The likelihood of this system being built is fairly low. Many details would have to fall into place. This would be an enormous pond system. Enough land would have to be found that would be conducive to pond construction. The land owner(s) would need to be willing to sell the land. In addition, land would need to be nearby for the spray application of the pond discharge. This land would need to be conducive to irrigation with landowners willing to either sell the land or lease the land to the industry. While this may be a difficult option to implement, and likelihood of implementation is low, it is possible.

Alternative 3 – Force main, stabilization pond with controlled discharge.

This option is the same as Alternative 2 except it has a controlled surface water discharge instead of spray application. Since this would be a new discharge, a 1.0 mg/L phosphorus limit would be included in the permit (In reality, the phosphorus limit could be much less than 1.0 mg/L, depending on the specific situation. In this example it is assumed that a 1.0 mg/L limit is adequate. In addition, the limit could vary depending on the chosen treatment technology.). Phosphorus reduction could be accomplished through chemical application to the pond system by using a pontoon boat or through chemical addition using a control structure between the primary pond(s) and the secondary pond. Ponds with a controlled discharge are typically designed for 180 days of storage, unless in the northern half of the state. At a maximum rate of 1.5 mgd for 180 days, 2.7 million gallons of storage capacity would be required. This equates to about 138 acres of pond surface area, not including dikes etc. Space constraints are similar to those of Alternative 2.

Alternative 4 – Mechanical facility with continuous discharge.

This option includes a mechanical facility built at the industrial facility site, with a continuous surface water discharge. The new treatment plant would treat only the agricultural waste. All sanitary waste generated at the facility will continue to be treated at the municipal plant. A phosphorus limit of 1.0 mg/L would likely be included in the permit for this facility.

Alternative 5 – Combination mechanical facility, force main and storage pond with spray irrigation.

This option includes a mechanical facility built at the industrial facility site with a force main from the facility location to a storage pond outside of city limits. At this site, in addition to the storage pond, is a spray application system to allow disposal of all water. No surface water discharge exists. Since there is no surface water discharge, there is no degradation to surface waters. Impacts to ground water are considered when a surface application discharge is proposed. Proper nitrate levels at the property boundary need to be achieved. Space constraints are similar to those of Alternative 2.

Step 2. Eliminate from consideration alternatives that:

- are not consistent with sound engineering practices;
- are not consistent with sound environmental practices; and
- are not legal.

All alternatives are considered viable options. Area requirements needed for the placement of a large pond and spray irrigation system (Alternatives 2, 3 and 5) can be challenging, but possible. Nitrate contamination of ground water from spray irrigation (Alternatives 2 and 5) must be considered. However, it is not a reason to eliminate a system from further evaluation.

Step 3. Include an analysis of the cost of each alternative.

The table below shows the cost estimates for each alternative, including estimated construction costs, estimated operation and maintenance costs and estimated salvage values.

Alternative (Treatment Option)	Facility Construction Costs (except**)	Annual Fees (permit, flow based, high strength)	20-Year Salvage Value	Present Value of Salvage Value	Annualized Cost of Salvage Value Present Value	Total Present Value Cost*	Total Annualized Cost
Alternative 1 - Continue to be connected to the municipal system	$7,751,825**	$83,595	$0	$0	$0	$9,118,723	$557,671
Alternative 2 - Force main, stabilization pond with spray application	$9,500,000	$80,000	$2,700,000	$1,817,023	($111,123)	$8,991,092	$549,866
Alternative 3 - Force main, stabilization pond with controlled discharge	$8,000,000	$50,000	$2,500,000	$1,682,428	($102,892)	$7,135,143	$436,362
Alternative 4 - Mechanical facility with continuous discharge	$6,000,000	$120,000	$1,000,000	$672,971	($41,157)	$7,289,201	$445,784
Alternative 5 - Combo mechanical facility, force main, storage pond with spray application	$13,500,000	$200,000	$4,550,000	$3,062,020	($187,263)	$13,708,267	$838,353

*Present value calculated assuming 2% interest rate over a 20-year term.

**Sewer Availability Charge

Alternative (Treatment Option)	Total Present Value Cost
Alternative 1 - Stay connected to the municipal system	$9,118,723
Alternative 2 - Force main, stabilization pond with spray application	$8,991,092
Alternative 3 - Force main, stabilization pond with controlled discharge	$7,135,143
Alternative 4 - Mechanical facility with continuous discharge	$7,289,201
Alternative 5 - Combo mechanical facility, force main, storage pond with spray application	$13,708,267

Step 4. For all alternatives, identify the one that results in the least degradation yet will not cause substantial economic impacts.

Step 4A. Rank alternatives from least to most degrading.

The applicant considered the factors described on pages 4 and 5 and has ranked the alternatives from least to most degrading.

Alternative (Treatment Option)	**Least degrading rank**
Alternatives 2 and 5	1
Alternative 1	2
Alternative 4	3
Alternative 3	4

Of all the alternatives, the applicant determines Alternatives 2 and 5 are least degrading because there is no increase in the existing permitted point source discharge and there is no new point source discharge. Alternative 1 is the next least degrading alternative. Alternative 1 also does not increase the permitted discharge and there is no new point source discharge. However, Alternatives 2 and 5 rank higher than Alternative 1 because they delay the use of the assimilative capacity of the receiving water by removing the wastestream from the POTW and land applying the treated waste.

In this example, the factor which has the greatest influence on ranking between Alternatives 3 and 4 is not the seasonal difference in the stream flow but the downstream lake. Annual phosphorus loading to the lake is the concern, not seasonal loading to the stream. The lake is small with a low natural phosphorus load from the watershed and a slug of phosphorus from the pond could contribute to an algae bloom. The constant loading from the mechanical plant is less likely to cause an algae bloom since it is smaller and constant, both of which the lake can assimilate better than a slug load.

Step 4B. Starting with the highest ranked (i.e., least degrading) alternative, assess whether its implementation would result in substantial economic impacts. If the assessment indicates that the highest ranked alternative would result in substantial economic impacts, the next highest ranked alternative is evaluated until one is found that will not result in substantial economic impacts.

As described above, four financial tests are used to determine if maintaining high-quality water will interfered with significant economic development for private-sector projects: the Profit Test, the Liquidity Test, the Solvency Test, and the Leverage Test.

Step 4B.i. Profit Test

To assess whether maintaining high-quality water would result in considerably lower profits, two pieces of information are needed: the annual cost of pollution control and the entity's earnings before taxes from its income statement. Alternatives 2 and 5 (the least-degrading alternatives) have estimated annual costs of $549,866 and $838,353, respectively (see above table). Worksheet V consolidates the relevant information from the company's income statement to determine its annual earnings both with and without the pollution control costs. Earnings before taxes without pollution control costs equal revenues minus the sum of cost of goods sold and portion of corporate overhead assigned to the discharger (EBT = R - CGS - CO). In this discharger's most recently completed fiscal year, it had revenues of $10 million, cost of goods sold of $8.7 million, and portion of company overhead assigned to the discharger of $0.5 million. Thus its earnings before taxes without pollution control costs were $10 million - $8.7 million - $0.5 million = $800,000. Determining earnings before taxes with the annual costs of the pollution control project (ACPR), entails subtracting the ACPR from this total:

- Alternative 2: $800,000 - $549,866 = $250,134
- Alternative 5: $800,000 - $838,353 = -$38,353

Since these two alternatives have been deemed to be equally degrading, the only one whose economic burden needs to be analyzed is the least costly of the two, Alternative 2. Are the pollution control costs for this alternative excessively burdensome to this discharger? The profit rate (Worksheet W) is the first measure to assess this. The profit rate is earnings before taxes divided by revenues, and again, is calculated with and without the pollution control costs. So for this discharger:

Profit Rate Without Pollution Control Costs = $800,000/$10 million = 0.08 (or 8%)

Profit Rate With Pollution Control Costs = $250,134/$10 million = 0.0250 (or 2.50%)

Is this an excessive impact? There is no clear objective answer; the profit rates should be compared to those for facilities in similar lines of business, using data in *Moody's Industrial Manual, Dun & Bradstreet's Industry Norms and Key Business Ratios, Standard & Poor's Industry Surveys*, or Risk Management Association's *Annual Statement Studies*. Assume that this research showed a profit rate under 3.5% (the profit rate with the added cost of pollution control cost) to be potentially unsustainable. Thus, it may be worth considering the next least-degrading feasible option, which in this case is Alternative 4. As shown above, Alternative 4 entails an annual costs of $445,784. Thus the earnings before taxes with these annual costs of pollution control = $800,000 - $445,784 = $354,216, and a Profit Rate of $354,216/$10 million = 0.0354 (or 3.54%). This does not fall below the industry-specific threshold for potentially unsustainability of 3.5%, so this option likely does not place an excessive economic impact on the discharger. Since it is still quite close to the sustainability threshold, the discharger may want to consider the next least degrading alternative, Alternative 4 (although in this case the annualized cost of Alternative 4 is very close to the annualized cost of Alternative 3, so its economic impact is unlikely to be different). As shown above, Alternative 3 entails annual costs of $436,362. Thus the earnings before taxes with these annual costs of pollution control = $800,000 - $436,362 = $363,638, and a Profit Rate of $363,638/$10 million = 0.0364 (or 3.64%).

Step 4B.ii. Liquidity Test

To assess the discharger's liquidity (and the potential impact of the pollution control project on its liquidity), the Current Ratio is calculated, using values readily attainable from the discharger's balance sheet. As seen in Worksheet X, the Current Ratio = Current Assets divided by Current Liabilities. Current assets include cash and other assets that are or could reasonably be converted into cash during the current year and generally include the sum of inventories, prepaid expenses and accounts receivable. Current liabilities are items that must be paid within the current year and generally include the sum of accounts payable, accrued expenses, taxes, and the current portion of long-term debt.

This discharger has current assets of $5 million and current liabilities of $3.4 million. Thus, its Current Ratio = $5 million/$3.4 million = 1.47. Again, to determine whether this discharger has a healthy level of liquidity, this ratio would need to be compared to other dischargers in the same industry. But, a general rule is that if the Current Ratio is greater than 2, the entity should be able to cover its short-term obligations. Thus, this discharger may be facing an unhealthy and unsustainable level of liquidity, so the more expensive (and least degrading) pollution control option may be overly burdensome on this discharger.

Step 4B.iii. Solvency Test

To assess the discharger's solvency, or its ability to meet its fixed and long-term obligations, the discharger should calculate the value of its Beaver's Ratio. Beaver's Ratio is calculated by dividing cash flow by total debt and can be done using Worksheet Y. Cash flow is net income after taxes plus depreciation; total debt is current debt plus long-term debt. This discharger had on its most recently completed fiscal year a net income of $520,000 and it claimed $380,000 in depreciation expense for the year. It has current debt = $3.4 million and long-term debt = $2.5 million. Thus, its Beaver's Ratio = ($520,000 + $380,000)/($3.4 million + $2.5 million) = 0.153.

This falls close to the lower end of the uncertain range for solvency (between 0.15 to 0.20), so the future solvency of this discharger is uncertain. Again, however, it would be worthwhile to compare this value to other dischargers in the same industry.

Step 4B.iv. Leverage Test

To assess the discharger's leverage, or the extent to which its fixed financial obligations preclude its ability to borrow additional funds, it would calculate its Debt to Equity Ratio. This is also readily calculated from information on the discharger's balance sheet. As can be seen in Worksheet Z, the Debt to Equity Ratio equals long-term liabilities divided by owner equity. Long-term liabilities include all long-term debt such as bonds, debentures, bank debts, and all other non-current liabilities. Owner equity is the difference between total assets and total liabilities. This discharger has long-term liabilities equal to $2.5 million and owner equity equal to $1.8 million. Thus, its Debt to Equity Ratio = $2.5 million/$1.8 million = 1.39.

As noted above, there are no generally accepted Debt to Equity Ratio values that apply to all types of economic activity; the ratio should be compared with the ratio of firms in similar businesses. If the entity's ratio compares favorably with the median or upper quartile ratio for similar businesses, it should be able to borrow additional funds. These ratios can be calculated using data in Risk Management Association's *Annual Statement Studies*, *Moody's Industrial Manual*, and Dun & Bradstreet's *Dun's Industry Norms*.

Step 4B.v. Assess whether the cost of implementing an alternative would be substantial: interpreting the results from the financial tests (Private-sector)

The table below summarizes the results of the four tests for each of the two feasible cost-effective pollution control options.

	Alternative 2 (least costly of least degrading alternatives)	Alternative 4 (next least degrading)	Alternative 3 (next least degrading)
Profit Test	2.50%	3.54%	3.64%
Liquidity Test (Current Ratio)	1.47		
Solvency Test (Beaver's Ratio)	0.153		
Leverage Test	1.39		

As is evident in this table, the profit test considers the impact of the pollution control project and can be done for each feasible cost-effective treatment option, while the other tests assess the general financial health of the discharger. Considering first the least degrading option (Alternative 2), it is up to the financial analyst to determine whether this alternative will result in substantial adverse economic impacts. Again, there are no uniform and objective thresholds for making this assessment, and comparing these values to other firms in the same industry is essential. The discharger is welcome to provide its own assessment and justification as to whether this will or will not present an excessive economic burden.

If the financial analyst concludes that implementing the least-degrading option will cause substantial adverse economic impacts, then the next least-degrading option can be considered (Alternative 4, in this example), and then, potentially, the next least-degrading option after that (Alternative 3). If the least expensive of all options is determined to cause substantial economic impacts, then the discharger may opt to either do it anyway or refrain from the upgrade and expansion that is causing their increased discharge.

In this example, the decision of which alternative to choose likely comes down to a choice between the least degrading Alternative 2 and the less costly but more degrading Alternative 4. Given that Alternative 3 has nearly identical costs to Alternative 4 but is more degrading suggests that it can likely be eliminated from consideration. The three tests that are not dependent on which altenative is being considered (Liquidity, Solvency, Leverage) collectively suggest that this discharger may be in a compromised financial position, but its outlook is not overly dire. It thus largely comes down to the Profit Test to determine which alternative is selected. If a profit rate of 2.5% is deemed economically unsustainable (again, based on comparisons to industry norms and given that the other tests show a somewhat compromised financial position), then Alternative 2 may be deemed unaffordable, leading to the choice of Alternative 4. If, however, a profit rate of 2.5% is not deemed to be economically unsustainable, then the less-degrading Alternative 2 may be selected.

Attachment to the Statement of Need and Reasonableness: In the Matter of Proposed Revisions of Minnesota Rules ch. 7050, Relating to Nondegradation and minor supporting changes to Minnesota Rules ch. 7001; Repeal of Minnesota Rules 7050.0180 (Nondegradation for Outstanding Resource Value Waters) and Minnesota Rules 7050.0185 (Nondegradation for All Waters); Proposed Addition of New Rules, Minnesota Rules 7050.0250 through 7050.0335 (Antidegradation), Minnesota Pollution Control Agency (MPCA)

Attachment 5. Comparison of federal antidegradation regulatory requirements with standards in the proposed antidegradation rules

This attachment supports the regulatory requirement addressed in Section 8.F. of the Statement of Need and Reasonableness (SONAR).

Federal antidegradation policy regulations:

(a) The State shall develop and adopt a statewide antidegradation policy. The antidegradation policy shall, at a minimum, be consistent with the following:

(1) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

(2) Where the quality of the waters exceeds levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

(i) The State may identify waters for the protections described in paragraph (a)(2) of this section on a parameter-by-parameter basis or on a water body-by-water body basis. Where the State identifies waters for antidegradation protection on a water body-by-water body basis, the State shall provide an opportunity for public involvement in any decisions about whether the protections described in paragraph (a)(2) of this section will be afforded to a water body, and the factors considered when making those decisions. Further, the State shall not exclude a water body from the protections described in paragraph (a)(2) of this section solely because water quality does not exceed levels necessary to support all of the uses specified in section 101(a)(2) of the Act.

(ii) Before allowing any lowering of high water quality, pursuant to paragraph (a)(2) of this section, the State shall find, after an analysis of alternatives, that such a lowering is necessary to accommodate important economic or social development in the area in which the waters are located. The analysis of alternatives shall evaluate a range of practicable alternatives that would prevent or lessen the degradation associated with the proposed activity. When the analysis of alternatives identifies one or more practicable alternatives, the State shall only find that a lowering is necessary if one such alternative is selected for implementation.

(3) Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

(4) In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with section 316 of the Act.

(b) The State shall develop methods for implementing the antidegradation policy that are, at a minimum, consistent with the State's policy and with paragraph (a) of this section. The State shall provide an opportunity for public involvement during the development and any subsequent revisions of the implementation methods, and shall make the methods available to the public.

40 CFR § 131.12 Antidegradation policy and implementation methods (Exhibit 20)

A. Federal requirement: States must develop and adopt statewide antidegradation policies.

The last major revisions to Minnesota's nondegradation rules occurred in 1988. Since that time there have been significant regulatory changes and new EPA guidance regarding water quality protection. The MPCA is proposing to replace the current rules and adopt ones that will more clearly align with federal regulations and EPA guidance.

B. Federal requirement: Existing uses and the level of water quality necessary to protect the existing uses must be maintained and protected. (Tier 1 protection)

Proposed standards when changes in existing water quality are reasonably quantifiable. (Minn. R. 7050.0265).

The commissioner shall approve a proposed activity only when existing uses and the level of water quality necessary to protect existing uses are maintained and protected. Evaluation of the maintenance and protection of existing uses includes consideration of:

a. aquatic life that utilizes or is present in or on the surface waters;
b. recreational opportunities in or on the surface waters;
c. hydrologic conditions, geomorphic conditions, water chemistry, and habitat necessary to maintain and protect existing aquatic life or recreation in or on the surface waters; and
d. *commercial activity that depends on the preservation of water quality.*

Minn. R. 7050.0265, subp. 2 (Protection of existing uses.)

and

a. Except as provided in item D, the commissioner shall allow compensatory mitigation for the loss of an existing use resulting from physical alterations to a surface water when:
(1) prudent and feasible alternatives are not available to avoid or minimize adverse impacts to the existing use;
(2) the mitigation is sufficient to ensure replacement of the lost existing use;
(3) the mitigation is accomplished by restoring a previously impacted surface water of the same type or, when restoring is not a prudent or feasible alternative, establishing or enhancing a surface water of the same type;
(4) the mitigation occurs within the same watershed, to the extent prudent and feasible; and

(5) the mitigation is completed before or concurrent with the actual physical alteration, to the extent prudent and feasible.

b. For the purposes of subpart 2 and part 7050.0250, item A, existing uses are maintained and protected when regulated activities involving the physical alterations are in compliance with item A.

c. When the physically altered surface water is of high quality, the commissioner shall ensure the requirements specified in subpart 5 are satisfied.

d. *The commissioner shall prohibit the loss of existing uses resulting from physical alterations, regardless of the compensatory mitigation proposed, when the proposed activity would physically alter or otherwise degrade the exceptional characteristics of an outstanding resource value water designated in part 7050.0335.*

Minn. R. 7050.0265, subp. 3 (Compensatory mitigation; loss of existing uses.)

Proposed standards when changes in existing water quality are not reasonably quantifiable. (Minn. R. 7050.0270).

The commissioner shall issue control documents that will maintain and protect existing uses.

Minn. R. 7050.0270, subp. 2 (Protection of existing uses.)

C. Federal requirement: Where the quality of the waters exceed levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless certain conditions are met. (Tier 2 protection) (These conditions are provided in Sections D through J of this document.)

The proposed rules employ the term "*high water quality*" to describe "*[w]here the quality of the waters exceeds levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water*" found in federal regulations. The proposed definition of "*high water quality*" is "*water quality that exceeds, on a parameter-by-parameter basis, levels necessary to support the protection and propagation of aquatic life and recreation in and on the water.*" (Proposed 7050.0255, subp. 21).

The proposed definition differs from that found in 40 CFR § 131.12(a)(2) (Exhibit 20) in that what is proposed uses the term "*aquatic life*" rather than "*fish, shellfish, and wildlife...in and on the water*" as found in federal regulation. The use of the term "*aquatic life*" is reasonable because it is a term used throughout Minnesota Statutes and Rules. For example, Minn. Stat. 115.01 uses the term "*aquatic life*" as part of the definition of water pollution; and Minn. R. 7050.0140 subp. 3 defines Class 2 waters to be those protected for "*aquatic life and recreation.*" The term "*aquatic life*" in the proposed rule is intended to have the same meaning as "*aquatic life*" in Minn. Stat. 115.01 and Minn. R. 7050.0140; provisions that were previously adopted by Minnesota to implement the Clean Water Act water quality standards provisions. Consistency in terms in such closely related provisions is reasonable.

The justification for describing high water quality on a parameter-by-parameter basis in the proposed rules is discussed in Section I of this document.

Note that for proposed standards that apply to regulated activities where changes to existing water quality of individual waters cannot reasonably be quantified (Minn. R. 7050.0270), Class 2 surface waters not on the state's current impaired waters list are, on a parameter-by-parameter basis, considered high quality.

D. Federal requirement: The state's decisions regarding the lowering of high water quality must provide for intergovernmental coordination and public participation.

Proposed standards when changes in existing water quality are reasonably quantifiable. (Minn. R. 7050.0265).

The commissioner shall provide an opportunity for intergovernmental coordination and public participation before allowing degradation of existing water quality.

Minn. R. 7050.0265, subp. 5 (Protection of surface waters of high quality)(D)

Proposed standards when changes in existing water quality are not reasonably quantifiable. (Minn. R. 7050.0270).

The commissioner shall provide an opportunity for intergovernmental coordination and public participation before issuing a control document that would result in net increases in loading or other causes of degradation.

Minn. R. 7050.0270, subp. 4 (Protection of surface waters of high quality)(E)

Each of the proposed implementing procedures (Minn. R. 7050.0280 through Minn. R. 7050.0315) includes an opportunity for comment through public notice provisions associated with the given control document. The proposed rules combine "*intergovernmental coordination*" and "*public participation*" by providing the opportunity for comment from any entity interested in a proposed activity. Minn. R. 7001.0100, subpart 5 (B) requires the distribution of the public notice to all persons who have registered their names and addresses on the mailing list established under Minn. R. 7001.0200. MPCA maintains a public notice list satisfying this requirement. The list includes local governments, federal and state agencies, and other officials which have an interest in the MPCA's permit issuances. Minn. R. 7001.0100, subpart 5 (B) incorporates by reference the requirements of Minn. R. 7001.0660, subpart C which requires additional notification of certain local governments, federal and state agencies, and other officials for draft permits.

E. Federal requirement: The state's decision to lower high water quality must find that the proposed lowering is necessary.

Proposed standards when changes in existing water quality are reasonably quantifiable. (Minn. R. 7050.0265).

The commissioner shall not approve a proposed activity when the commissioner makes a finding that prudent and feasible prevention, treatment or loading offset alternatives exist that would avoid degradation of existing high water quality. When the commissioner finds that prudent and feasible prevention, treatment or loading offset alternatives are not available to avoid degradation, a proposed activity shall be approved only when the commissioner makes a finding that degradation will be prudently and feasibly minimized.

Minn. R. 7050.0265, subp. 5 (Protection of surface waters of high quality)(A)

Proposed standards when changes in existing water quality are not reasonably quantifiable. (Minn. R. 7050.0270).

The commissioner shall not issue a control document when the commissioner makes a finding that prudent and feasible prevention, treatment or loading offset alternatives exist that would avoid net

increases in loading or other causes of degradation. When the commissioner finds that prudent and feasible alternatives are not available to avoid net increases in loading or other causes of degradation, a control document shall only be issued when the commissioner makes a finding that the issuance of the control document will prudently and feasibly minimize net increases in loading or other causes of degradation.

Minn. R. 7050.0270, subp. 4 (Protection of surface waters of high quality)(B)

The finding of necessity is accomplished through an alternatives analysis discussed in Section J of this document.

F. Federal requirement: The state's decision to lower high water quality must show that the proposed lowering accommodates important economic or social development in the area in which the waters are located.

Proposed standards when changes in existing water quality are reasonably quantifiable. (Minn. R. 7050.0265).

The commissioner shall approve a proposed activity only when the commissioner makes a finding that economic or social changes resulting from the proposed activity are important in the geographic area in which degradation of existing high water quality is anticipated. The commissioner shall consider the following factors in determining the importance of economic or social changes:

(1) economic gains or losses attributable to the proposed activity, such as changes in the number and types of jobs, median household income, productivity, property values, and recreational, tourism, and other commercial opportunities;
(2) contribution to social services;
(3) prevention or remediation of environmental or public health threats;
(4) trade-offs between environmental media; and
(5) the value of the water resource, including:
  (a) the extent to which the resources adversely impacted by the proposed activity are unique or rare within the locality, state, or nation;
  (b) benefits associated with high water quality for uses such as ecosystem services and high water quality preservation for future generations to meet their own needs; and
  (c) factors, such as aesthetics, that cannot be reasonably quantified; and
(6) other relevant environmental, social, and economic impacts of the proposed activity.

Minn. R. 7050.0265, subp. 5 (Protection of surface waters of high quality)(B)

Proposed standards when changes in existing water quality are not reasonably quantifiable. (Minn. R. 7050.0270).

The commissioner shall issue a control document that authorizes a net increase in loading or other causes of degradation only when the commissioner makes a finding that the issuance of the control document accommodates important economic or social change.

Minn. R. 7050.0270, subp. 4 (Protection of surface waters of high quality)(C)

G. Federal requirement: The state's decision to lower of high water quality must ensure that existing uses are fully protected.

Each of the proposed antidegradation standards provides for the maintenance and protection of existing uses, regardless of a finding that high water quality degradation is justified based on necessity to

accommodate important economic or social development. (See Minn. R. 7050.0265, subp. 2 and subp. 3, and Minn. R. 7050.0370, subp. 3.)

H. Federal requirement: The state's decision to lower of high water quality must ensure the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control are achieved.

Proposed standards when changes in existing water quality are reasonably quantifiable. (Minn. R. 7050.0265).

A proposed activity that would result in degradation of existing high water quality shall be approved only if the commissioner determines that issuance of the control document will achieve compliance with all applicable state and federal surface water pollution control statutes and rules administered by the commissioner.

Minn. R. 7050.0265, subp. 5 (Protection of surface waters of high quality)(C)

Proposed standards when changes in existing water quality are not reasonably quantifiable. (Minn. R. 7050.0270).

The commissioner shall issue a control document that would result in a net increase in loading or other causes of degradation to waters of high quality only if the commissioner determines that issuance of the control document will achieve compliance with all applicable state and federal surface water pollution control statutes and rules administered by the commissioner.

Minn. R. 7050.0270, subp. 4 (Protection of surface waters of high quality)(D)

I. Federal requirement: States have the option of identifying high water quality either on a parameter-by-parameter basis or on a water body-by-water body basis.

The proposed definition of "*high water quality*" is "*water quality that exceeds, on a **parameter-by-parameter basis**, levels necessary to support the protection and propagation of aquatic life and recreation in and on the water.*" (Proposed 7050.0255, subp. 21, emphasis added). The justification for defining high water quality is provided in Section 5.B.21. of the SONAR.

Proposed standards when changes in existing water quality are reasonably quantifiable. (Minn. R. 7050.0265).

Items A to D apply to surface waters the commissioner determines to be of high quality.

Minn. R. 7050.0265, subp. 5 (Protection of surface water of high quality)

Proposed standards when changes in existing water quality are not reasonably quantifiable. (Minn. R. 7050.0270).

For the purpose of this part and on a parameter-by-parameter basis, Class 2 surface waters not identified as impaired pursuant to section 303(d) of the Clean Water Act are considered of high quality. Items B to E apply to Class 2 surface waters that are of high quality.

(Minn. R. 7050.0270, subp. 4 (Protection of surface waters of high quality)(A)

J. **Federal requirement: An analysis of alternatives must inform a state's finding of whether lowering of high water quality is necessary to accommodate important economic or social development. The analysis of alternatives must evaluate a range of practicable alternatives that would prevent or lessen degradation. The state must only find that lowering of high water quality is necessary when one or more practicable alternatives are identified.**

Proposed standards when changes in existing water quality are reasonably quantifiable. (Minn. R. 7050.0265).

> *The commissioner shall not approve a proposed activity when the commissioner makes a finding that prudent and feasible prevention, treatment, or loading offset alternatives exist that would avoid degradation of existing high water quality. When the commissioner finds that prudent and feasible prevention, treatment, or loading offset alternatives are not available to avoid degradation, a proposed activity shall be approved only when the commissioner makes a finding that degradation will be prudently and feasibly minimized.*
>
> Minn. R. 7050.0265, subp. 5 (Protection of surface waters of high quality)(A)

Proposed standards when changes in existing water quality are not reasonably quantifiable. (Minn. R. 7050.0270).

> *The commissioner shall not issue a control document when the commissioner makes a finding that prudent and feasible prevention, treatment, or loading offset alternatives exist that would avoid net increases in loading or other causes of degradation. When the commissioner finds that prudent and feasible alternatives are not available to avoid net increases in loading or other causes of degradation, a control document shall only be issued when the commissioner makes a finding that the issuance of the control document will prudently and feasibly minimize net increases in loading or other causes of degradation.*
>
> Minn. R. 7050.026570, subp. 4 (Protection of surface waters of high quality)(B)

While federal regulations require an analysis of "*practicable*" alternatives, the proposed rules require an analysis of prudent and feasible alternatives. "*Practicable*" is defined at 40 CFR § 131.3(n) (Exhibit 68) as "*in the context of §131.12(a)(2)(ii), means technologically possible, able to be put into practice, and economically viable.*" The MPCA chose to require the evaluation of prudent and feasible alternatives because it is a familiar standard already established in current nondegradation rules (Minn. R. 7050.0180, subp. 6). The prudent and feasible standard is broader than that found in federal regulations, yet contains all of the elements found in the definition of "*practicable*" as demonstrated in the definition of "*feasible*":

> *Subp. 17.* ***Feasible alternative.*** *"Feasible alternative" means a pollution control alternative that is consistent with sound engineering and environmental practices, affordable, and legal and that has supportive governance that can be successfully put into practice to accomplish the task.*
> (Proposed Minn. R. 7050.0255, subp. 17)

Further justification for retaining the prudent and feasible standard is provided in Section 5.B.34., Section 5.B.17. and Section 5.G.2.a. of the SONAR. Justification for the proposed rules' requirement to evaluate "*prevention, treatment, or loading offset alternatives*" is found in Section 5.G.2.a. of the SONAR.

Federal regulations require that states must only find that lowering of high water quality is necessary when one or more practicable alternatives are identified. In describing this particular requirement:

> *EPA chose not to require implementation of the least degrading practicable alternative to allow states and authorized tribes the flexibility to balance multiple considerations. Some alternatives to lowering water quality can have negative environmental impacts in other media (e.g., air, land). For example, incinerating pollutants rather than discharging the pollutants to surface waters could adversely impact air quality and energy use, and land application of pollutants could have adverse terrestrial impacts. EPA recommends that states and authorized tribes consider cross-media impacts and, where possible, seek alternatives that minimize degradation of water quality and also minimize other environmental impacts.*
> Water Quality Standards Revisions; Final Rule, 80 Fed. Reg., 51020 (2015), p. 51033 (Exhibit 154)

The proposed rules are in alignment with EPA's thinking in that they provide flexibility in determining how high water quality degradation can reasonably be minimized. They also align with Minnesota Statutes through which the MPCA is given and charged with powers and duties to adopt standards and rules *"in order to prevent, control or abate water pollution."* Minn. Stat. § 115.03, subd. 1(e)

K. Federal requirement: Where high quality waters constitute an outstanding National resource, that water quality shall be maintained and protected. (Tier 3 protection)

Proposed standards when changes in existing water quality are reasonably quantifiable. (Minn. R. 7050.0265).

> *The commissioner shall prohibit a proposed activity that results in a net increase in loading or other causes of degradation to prohibited outstanding resource value waters identified under part 7050.0335, subparts 3 and 4.*
>
> Minn. R. 7050.0265, subp. 7 (Protection of prohibited outstanding resource value waters.)

Proposed standards when changes in existing water quality are not reasonably quantifiable. (Minn. R. 7050.0270).

> *The commissioner shall issue control documents that prohibit a net increase in loading or other causes of degradation to prohibited outstanding resource value waters identified under part 7050.0335, subparts 3 and 4.*
>
> Minn. R. 7050.0270, subp. 6 (Protection of prohibited outstanding resource value waters.)

Minnesota, like a number of other states, has elected to provide a fourth level of protection more stringent than Tier 2, yet less stringent than Tier 3. This extra Tier in states' antidegradation policy is permissible under section 510 of the CWA (33 U.S.C. § 1370) which acknowledges states' rights to adopt state protections that differ, but are not less stringent than federal protections. This level of protection (referred to as Tier 2.5 in some states) is provided to water bodies specifically designated in the current rule (Minn. R. 7050.0180, subp. 6 through subp. 6b) and the proposed rules (Minn. R. 7050.0335, subp. 1) as restricted outstanding resource value waters (restricted ORVWs). Outstanding resource value waters are categorized as either restricted ORVWs or prohibited ORVWs. The MPCA is not proposing to add or remove previously listed restricted ORVWs in this rulemaking. Like prohibited ORVWs, restricted

ORVWs possess extraordinary or unique characteristics. Whereas prohibited ORVWs are designated because of outstanding water quality, some restricted ORVWs are designated for reasons other than their exceptional water quality. The proposed rules do not fundamentally change how restricted ORVWs are currently protected, but provide clarification. The MPCA does not consider maintaining this intermediate level of protection causes the state rules to be more stringent than the federal antidegradation requirements.

Proposed standards for the protection of restricted ORVWs are as follows.

Proposed standards when changes in existing water quality are reasonably quantifiable. (Minn. R. 7050.0265).

The commissioner shall restrict a proposed activity in order to preserve the existing water quality as necessary to maintain and protect the exceptional characteristics for which the restricted outstanding resource value waters identified under part 7050.0335, subparts 1 and 2, were designated.

Minn. R. 7050.0265, subp. 6 (Protection of restricted outstanding resource value waters.)

Proposed standards when changes in existing water quality are not reasonably quantifiable. (Minn. R. 7050.0270).

The commissioner shall issue control documents that restrict net increases in loading or other causes of degradation as necessary to maintain the exceptional characteristics for which the restricted outstanding resource value waters identified under part 7050.0335, subparts 1 and 2, were designated.

Minn. R. 7050.0270, subp. 5 (Protection of restricted outstanding resource value waters.)

L. Federal requirement: Antidegradation policy and implementing methods must be consistent with section 316 of the Clean Water Act **(33 U.S.C. § 1326) (Exhibit 99) regarding potential thermal water quality impairments.**

Proposed standards when changes in existing water quality are reasonably quantifiable. (Minn. R. 7050.0265).

When there is potential for water quality impairment associated with thermal discharges, the commissioner's allowance for existing water quality degradation shall be consistent with section 316 of the Clean Water Act, United States Code, title 33, section 1326. When a variance is granted under section 316(a) of the Clean Water Act, United States Code, title 33, section 1326, antidegradation standards under this part still apply.

Minn. R. 7050.0265, subp. 8 (Protection against impairments associated with thermal discharges.)

Proposed standards when changes in existing water quality are not reasonably quantifiable. (Minn. R. 7050.0270).

When there is potential for water quality impairment associated with thermal discharges, a control document that allows a net increase in loading or other causes of degradation must be consistent with section 316 of the Clean Water Act, United States Code, title 33, section 1326. When a variance is granted under section 316(a) of the Clean Water Act, United States Code, title 33, section 1326, antidegradation standards under this part still apply.

Minn. R. 7050.0270, subp. 7 (Protection against impairments associated with thermal discharges.)

M. Federal requirement: States must develop methods for implementing antidegradation policy that are, at minimum, consistent with the state's and federal policy. States must also provide opportunities for public involvement during the development and revisions of the methods, and make the methods available to the public.

Proposed Minn. R. 7050.0280 through Minn. R. 7050.0325 contains procedures (methods) to implement Minnesota's antidegradation standards. These procedures are consistent with the state's and federal antidegradation policies. Opportunities for public involvement have been provided through the rule development process (see Attachment 1 (List of meetings with external parties)) and through the hearing requirements found at Minn. Stat. § 14.14.

Attachment to the Statement of Need and Reasonableness: In the Matter of Proposed Revisions of Minnesota Rules ch. 7050, Relating to Nondegradation and minor supporting changes to Minnesota Rules ch. 7001; Repeal of Minnesota Rules 7050.0180 (Nondegradation for Outstanding Resource Value Waters) and Minnesota Rules 7050.0185 (Nondegradation for All Waters); Proposed Addition of New Rules, Minnesota Rules 7050.0250 through 7050.0335 (Antidegradation), Minnesota Pollution Control Agency (MPCA)

Attachment 6. Minnesota cities, townships and unorganized territories with fewer than ten total employees and with NPDES wastewater permits in 2012

Information gathered from the Minnesota Department of Employment and Economic Development (DEED) and MPCA's Delta Database indicates that in 2012 there were 263 Minnesota cities (#=204), townships (#=58) and unorganized territories (#=1) with fewer than 10 total employees and with NPDES wastewater permits. Note that information from DEED, and provided here, does not distinguish between full-time and part-time employees. The information was compiled on April 15, 2013.

City, County	Township, County	Unorganized Territory, County
Adams, Mower	Alexandria Twp, Douglas	Unorg. Terr. of Northhome, Koochiching
Alberta, Stevens	Audubon Twp, Becker	**TOTAL = 1**
Alden, Freeborn	Austin Twp, Mower	
Alvarado, Marshall	Barnum Twp, Carlton	
Amboy, Blue Earth	Beauford Twp, Blue Earth	
Argyle, Marshall	Belle Plaine Twp, Scott	
Ashby, Grant	Bigelow Twp, Nobles	
Askov, Pine	Brandon Twp, Douglas	
Badger, Roseau	Buffalo Twp, Wright	
Barrett, Grant	Center Twp, Crow Wing	
Beaver Creek, Rock	Cokato Twp, Wright	
Becker, Sherburne	Crookston Twp, Polk	
Belgrade, Stearns	Crosby Twp, Pine	
Bellechester, Goodhue-Wabasha	Fergus Falls Twp, Otter Tail	
Bellingham, Lac Qui Parle	Finlayson Twp, Pine	
Belview, Redwood	Fountain Twp, Fillmore	
Bethel, Anoka	Greenbush Twp, Mille Lacs	
Bird Island, Renville	Grove Twp, Stearns	
Blomkest, Kandiyohi	Harris Twp, Itasca	
Blooming Prairie, largely Steel	Hinckley Twp, Pine	
Brewster, Nobles	Kenyon Twp, Goodhue	
Bricelyn, Faribault	Lansing Twp, Mower	

City, County	Township, County	Unorganized Territory, County
Brownsdale, Mower	Long Prairie Twp, Todd	
Brownsville, Houston	Luverne Twp, Rock	
Butterfield, Watonwan	Lyle Twp, Mower	
Campbell, Wilkin	Mankato Twp, Blue Earth	
Canton, Fillmore	Mantorville Twp, Dodge	
Carlos, Douglas	Milaca Twp, Mille Lacs	
Ceylon, Martin	Montgomery Twp, Le Sueur	
Chandler, Murray	Monticello Twp, Wright	
Chatfield, Fillmore-Olmsted	Moorhead Twp, Clay	
Chokio, Stevens	Moose Lake Twp, Carlton	
Clarkfield, Yellow Medicine	Mountain Lake Twp, Cottonwood	
Clarks Grove, Freeborn	Nashwauk Twp, Itasca	
Clear Lake, Sherburne	Northfield Twp, Rice	
Clements, Redwood	Oakland Twp, Freeborn	
Climax, Polk	Osakis Twp, Douglas	
Clinton, Big Stone	Paynesville Twp, Stearns	
Clitherall, Otter Tail	Peace Twp, Kanabec	
Clontarf, Swift	Pierz Twp, Morrison	
Comstock, Clay	Pine City Twp, Pine	
Conger, Freeborn	Pine River Twp, Cass	
Cosmos, Meeker	Plainview Twp, Wabasha	
Cottonwood, Lyon	Princeton Twp, Mille Lacs	
Crosslake, Crow Wing	Red Lake Falls Twp, Red Lake	
Currie, Murray	Rockford Twp, Wright	
Danube, Renville	Royalton Twp, Pine	
Deer Creek, Otter Tail	Saint James Twp, Watonwan	
Delavan, Faribault	Slayton Twp, Murray	
Delhi, Redwood	Storden Twp, Cottonwood	
Dennison, largely Goodhue	Twin Lakes Twp, Mahnomen	
Dexter, Mower	Wadena Twp, Wadena	
Dumont, Traverse	Wanamingo Twp, Goodhue	
Dundee, Nobles	Watertown Twp, Carver	
Dunnell, Martin	Waterville Twp, Le Sueur	
East Grand Forks, Polk	Westbrook Twp, Cottonwood	
East Gull Lake, Cass	Willmar Twp, Kandiyohi	
Echo, Yellow Medicine	Wilmont Twp, Nobles	
Effie, Itasca	**TOTAL = 58**	
Eitzen, Houston		
Elkton, Mower		
Ellsworth, Nobles		

City, County	Township, County	Unorganized Territory, County
Emmons, Freeborn		
Evansville, Douglas		
Felton, Clay		
Fertile, Polk		
Fisher, Polk		
Franklin, Renville		
Freeborn, Freeborn		
Freeport, Stearns		
Frost, Faribault		
Garfield, Douglas		
Garvin, Lyon		
Geneva, Freeborn		
Ghent, Lyon		
Gibbon, Sibley		
Gilbert, Saint Louis		
Gonvick, Clearwater		
Good Thunder, Blue Earth		
Goodridge, Pennington		
Granada, Martin		
Grasston, Kanabec		
Grey Eagle, Todd		
Grove City, Meeker		
Grygla, Marshall		
Halstad, Norman		
Hamburg, Carver		
Hampton, Dakota		
Hancock, Stevens		
Hanska, Brown		
Hardwick, Rock		
Harmony, Fillmore		
Hartland, Freeborn		
Hayfield, Dodge		
Hayward, Freeborn		
Henderson, Sibley		
Hendricks, Lincoln		
Hewitt, Todd		
Hills, Rock		
Hitterdal, Clay		
Hoffman, Grant		
Holland, Pipestone		

City, County	Township, County	Unorganized Territory, County
Hollandale, Freeborn		
Jasper, Pipestone-Rock		
Jeffers, Cottonwood		
Karlstad, Kittson		
Kelliher, Beltrami		
Kellogg, Wabasha		
Kennedy, Kittson		
Kerkhoven, Swift		
Kettle River, Carlton		
Kilkenny, Le Sueur		
La Salle, Watonwan		
Lafayette, Nicollet		
Lake Bronson, Kittson		
Lake Crystal, Blue Earth		
Lake Wilson, Murray		
Lanesboro, Fillmore		
Le Roy, Mower		
Lewisville, Watonwan		
Lismore, Nobles		
Loretto, Hennepin		
Lowry, Pope		
Lucan, Redwood		
Lynd, Lyon		
Magnolia, Rock		
Marble, Itasca		
Marietta, Lac Qui Parle		
Maynard, Chippewa		
McIntosh, Polk		
McKinley, Saint Louis		
Meadowlands, Saint Louis		
Milan, Chippewa		
Milroy, Redwood		
Montrose, Wright		
Morristown, Rice		
Motley, largely Morrison		
Murdock, Swift		
Nelson, Douglas		
Nerstrand, Rice		
New Germany, Carver		
Newfolden, Marshall		

City, County	Township, County	Unorganized Territory, County
Nicollet, Nicollet		
Nielsville, Polk		
Northrop, Martin		
Odessa, Big Stone		
Odin, Watonwan		
Ogilvie, Kanabec		
Oklee, Red Lake		
Oslo, Marshall		
Ostrander, Fillmore		
Pemberton, Blue Earth		
Pennock, Kandiyohi		
Peterson, Fillmore		
Pillager, Cass		
Plummer, Red Lake		
Porter, Yellow Medicine		
Prinsburg, Kandiyohi		
Racine, Mower		
Rollingstone, Winona		
Rothsay, largely Wilkin		
Round Lake, Nobles		
Royalton, largely Morrison		
Rushmore, Nobles		
Ruthton, Pipestone		
Sabin, Clay		
Saint Bonifacius, Hennepin		
Saint Clair, Blue Earth		
Saint Leo, Yellow Medicine		
Saint Martin, Stearns		
Sanborn, Redwood		
Sargeant, Mower		
Shelly, Norman		
Silver Lake, McLeod		
Steen, Rock		
Stewart, McLeod		
Stockton, Winona		
Storden, Cottonwood		
Swanville, largely Morrison		
Tamarack, Aitkin		
Taunton, Lyon		
Taylors Falls, Chisago		

City, County	Township, County	Unorganized Territory, County
Trimont, Martin		
Ulen, Clay		
Upsala, Morrison		
Utica, Winona		
Vermillion, Dakota		
Vernon Center, Blue Earth		
Vesta, Redwood		
Viking, Marshall		
Wabasso, Redwood		
Wahkon, Mille Lacs		
Walters, Faribault		
Waltham, Mower		
Wanamingo, Goodhue		
Wanda, Redwood		
Warba, Itasca		
Willow River, Pine		
Winger, Polk		
Winton, Saint Louis		
Wood Lake, Yellow Medicine		
Woodstock, Pipestone		
Wykoff, Fillmore		
Zumbro Falls, Wabasha		
TOTAL = 204		

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Attachment 7. Assessment of differences between the proposed antidegradation rules and similar standards in states bordering Minnesota and EPA Region 5 states

This attachment supports the regulatory requirement addressed in Section 8.K. of the Statement of Need and Reasonableness (SONAR).

The process of comparing the proposed standards and requirements to those of border and EPA Region 5 states is complicated because the wide range of policies and intricacies of each state's water quality standards program – as well as values, priorities and regulatory structure that are unique to each state. It is not as simple as comparing one numeric water quality standard to another. Although there are some differences between the proposed rules and other states' rules, none of the proposed requirements represent a significant departure from those found in other states as a whole.

The following discussion centers on important topics which are particularly relevant to this rulemaking. The following state rules were used in the assessment:

- Illinois (IL), Illinois Administrative Code, Title 35, Section 302.105, (35 IAC 305.105) effective December 20, 2002 (Exhibit 136)
- Indiana (IN), Indiana Administrative Code, Title 327, Article 2, Section 1.3, (327 IAC 2-1.3) effective June 28, 2012 (Exhibit 94)
- Iowa (IA), Iowa Administrative Code, 567, Chapter 61.2(2), (567 IAC 61.2(2) effective February 16, 2011. (Exhibit 104) (Note that IA's implementation procedures (Iowa Antidegradation Implementation Procedure), (effective February 17, 2010) are incorporated into rule by reference. (Exhibit 103))
- Michigan (MI), Michigan Administrative Code: Water Resources Protection -- Part 4. Water Quality Standards, R 323.1098, effective December 13, 1973, revised April 2, 1999 (Exhibit 137)
- North Dakota (ND), North Dakota Administrative Code, 33-16-02.1, effective June 1, 2001 (Exhibit 138)
- Ohio (OH), Ohio Administrative Code, 3745-1-05, effective March 1, 2011 (Exhibit 139)
- South Dakota (SD), Administrative Rules of South Dakota (ARSD) 74:51:01:34, effective July 20, 1997 (Exhibit 140); ARSD 74:51:01:35, effective January 27, 1999 (Exhibit 141); ARSD 74:51:01:36, effective January 27, 1999 (Exhibit 142); ARSD 74:51:01:37, effective January 31, 1993 (Exhibit 143); ARSD 74:51:01:37.01, effective September 13, 2004 (Exhibit 144); ARSD 74:51:01:38, effective July 1, 1996 (Exhibit 145); ARSD 74:51:01:39, effective July 20, 1997 (Exhibit 146)
- Wisconsin (WI), Water Quality Standards for Wisconsin Surface Waters, Chapter NR 102, effective October 1, 1973 (Exhibit 147); Water Quality Antidegradation, Chapter NR 207, effective September 1, 1997 (Exhibit 148)

1. **To which activities do antidegradation requirements apply?**

   a. **Proposed requirements**

      Antidegradation requirements apply to regulated activities that have the potential to impact surface water quality. These requirements are implemented through the issuance of control documents such as National Pollutant Discharge Elimination System (NPDES) permits and section 401 certifications of federal licenses or permits.

   b. **Other states' requirements**

      In general, other states apply antidegradation requirements to the same types of activities as what is being proposed. IL, IA, OH specifically identify activities covered under NPDES permits and section 401 certifications. ND identifies activities covered under the ND Pollution Control System and section 401 certifications. SD procedures cover new and existing point sources and nonpoint sources, while WI covers only new and existing point sources. In MI, antidegradation applies to activities for which there is independent regulatory authority requiring compliance with water quality standards. The scope of IN's rules apply to activities subject to the Clean Water Act.

2. **To which waters do antidegradation requirements apply?**

   a. **Proposed requirements**

      The proposed rules apply to surface waters of the state. Note that nondegradation requirements for underground waters are found in Minn. R. ch. 7060.

   b. **Other states' requirements**

      For six of the eight states, antidegradation requirements apply to surface waters of the state. IL's and ND's rules state that antidegradation requirements apply to water of the state.

3. **When are antidegradation procedures required?**

   a. **Proposed requirements**

      Antidegradation procedures are required when a regulated activity is reasonably anticipated to result in a net increase in loading or other causes of degradation.

   b. **Other states' requirements**

      In IL, IA, and MI, antidegradation procedures are triggered when there is a new or expanded pollutant loading. In IN procedures are triggered by a proposed new or increased loading of a regulated pollutant that would result in a significant lowering of water quality. Ohio requires antidegradation procedures when there is a net increase in loading for NPDES permits and for **any** section 401 certification application. ND requires procedures when the regulated activity may have some effect on water quality. SD simply requires procedures upon permit issuance, while in WI procedures are triggered by a request for increased permit limitations.

4. **Are there impacts to high water quality that are not considered significant and therefore are not subject to Tier 2 procedures?**

   The amount of degradation resulting from a proposed activity may be a consideration in the determination of what triggers antidegradation procedures. If it is determined that the proposed lowering of high water quality would fall below a predetermined level or significant threshold, that activity would be considered *de minimis* and Tier 2 antidegradation procedures would not be required. Environmental Protection Agency guidance (Tier 2 Antidegradation Reviews and Significance Thresholds, U.S. EPA memorandum from Ephraim S. King (Office of Science and Technology) to Water Management Division Directors, Regions 1-10, (2005) (Exhibit 55) recommends that "*significant*" lowering of water quality be defined in terms of a demonstrated projected lowering of water quality, specifically the available assimilative capacity of a water body. The memorandum defines "*available assimilative capacity*" as "*...the difference between the applicable water quality criterion for a pollutant parameter and the ambient water quality for that pollutant parameter where it is better than the criterion...*". The memorandum supports the use of significant threshold set at 10% of available assimilative capacity, above which an activity would be required to receive "*a full tier 2 antidegradation review*".

a. Proposed requirements

There are no *de minimis* exemptions for reasons given in Section 5.G.

b. Other states' requirements

IL, IA and SD do not provide exemptions for *de minimis* discharges. Except under specific circumstances, MI and IN consider proposed discharges that consume less than 10% of the available assimilative or loading capacity to be *de minimis*. IN also provides some *de minimis* exemptions for heat.

In ND, proposed discharges to Category 1 waters covered under nationwide permits are not considered significant when they would:

- lower the ambient water quality by less than 15%
- reduce available assimilative capacity by less than 15%; or
- increase the loading by more than 15%

In the determination of significance, ND also considers the:

- nature, persistence, and potential effects of the parameter
- potential for cumulative effects
- predicted impacts to aquatic biota; and
- degree of confidence in any modeling techniques utilized

Wisconsin determines a proposed discharge to be significance in one of two ways:

- The proposed new or increased discharge, along with all other new or increased discharges after March 1, 1989, taking into account any changes in assimilative capacity, results in an expected level of an indicator parameter in the receiving water of either of the following:
  - greater than one–third multiplied by the assimilative capacity for any indicator parameter other than dissolved oxygen; or
  - greater than the sum of the existing level multiplied by two–thirds and the water quality criterion multiplied by one–third for dissolved oxygen; or
- For a discharge to the Great Lakes system, the mass loading to the receiving water of any substance in the proposed new or increased discharge having a bioaccumulation factor greater than 1000 would be increased.

Ohio's determination of significance is more complex and is based on the receiving water classification. For general high quality waters, any net increase in the discharge of a regulated pollutant that is less than 10% of the wasteload allocation to maintain water quality standards is not considered significant, provided the proposed lowering of water quality does not exceed 80% of the wasteload allocation. For superior high quality waters, other than Lake Erie, and outstanding state waters any net increase in the discharge of a regulated pollutant that results in less than a 5% change in the ambient water quality concentration of the receiving water is not considered significant, provided the proposed lowering of water quality does not exceed the portion of the remaining available assimilative capacity. For Lake Erie, any net increase in the discharge of a regulated pollutant that is less than 10% of the water body pollutant assimilative capacity is not considered significant. For the discharge of primarily sanitary wastewaters, only ammonia-nitrogen is evaluated is used to determine significance.

5. **If *de minimis* impacts to high water quality are allowed, are there thresholds above which procedures are required to address cumulative impacts?**

If the level of significance is related to the quality of the receiving water, it is logical that some type of cumulative limit or cap be employed below which water quality may not be lowered without review. Without a cumulative cap there is the risk that multiple discharges that do not trigger antidegradation review individually may result in undetected deterioration of water quality. Environmental Protection Agency guidance (Tier 2 Antidegradation Reviews and Significance Thresholds, U.S. EPA memorandum from Ephraim S. King (Office of Science and Technology) to Water Management Division Directors, Regions 1-10, (2005) (Exhibit 55) recommends a cumulative cap based on total assimilative capacity which the memorandum defined as "*...the baseline assimilative capacity of a waterbody established at a specific point in time.*" When using a cumulative cap an antidegradation review would be conducted for any activity using any amount of available assimilative capacity after a certain percentage of the total assimilative capacity has been used.

a. **Proposed requirements**

Not applicable because the proposed rules do not include a significance threshold.

b. **Other states' requirements**

Significance thresholds are not employed by IL, IA and SD and therefore cumulative caps are not relevant.

Although MI, ND and WI provide for *de minimis* discharges based on impacts to the receiving water, they do not provide cumulative caps.

In IN, the cumulative threshold is set at when the benchmark available loading capacity is equal to 90% of the available loading capacity established at the time of the request for the initial increase in loading.

Two types of cumulative caps are used in OH; set-asides and a *de minimis* cap.

- Set-asides establish absolute limits on the percent degradation in some water classes.
- *De minimis* caps determine how much degradation is allowed under the *de minimis* exemption before a full review is required.

6. **Are there discharges, activities or impacts (other than *de minimis* impacts to high water quality) that are exempt from antidegradation procedures?**

a. **Proposed requirements**

The proposed rules provide exemptions for the following, under specific conditions:

- activities impacting Class 7 waters (i.e., waters not meeting CWA section 101(a)(2) "fishable/swimmable" goals); and
- temporary and limited impacts to high water quality.

b. **Other states' requirements**

All of the states provide for some types of exemptions. SD provides exemptions for activities discharging to waters:

> *...assigned only the beneficial uses of fish and wildlife propagation, recreation, and stock watering and irrigation and the discharge will not cause any adverse impacts to any downstream segment classified as a higher designated use.* ARSD 74:51:01:36, effective January 27, 1999 (Exhibit 142)

The above exemption is similar to the proposed exemption for activities impacting Class 7 waters.

Other states do not provide an explicit exemption for waters not meeting CWA section 101(a)(2) "fishable/swimmable" goals. However, most states only require a demonstration that lowering of

water quality is necessary to accommodate important economic or social development for discharges to waters with water quality levels better than "fishable/swimmable" conditions.

IA, IL, IN and MI provide exemptions similar to what is being proposed for temporary and limited impacts.

7. How is high water quality determined?

The reader is directed to Section 5.B. of the SONAR for a description of two general methods by which high water quality is identified.

a. Proposed requirements

High water quality is determined on a parameter-by-parameter basis.

b. Other states' requirements

IN, IA MI, ND, and SD clearly identify high water quality on a parameter-by-parameter basis. Although not specified in rule, it appears IL and WI identify high water quality the same way according to how antidegradation reviews are conducted. It appears that OH identifies high water quality on a water body-by-water body basis, although review is conducted on individual parameters.

8. How is a determination made whether a lowering of high water quality is necessary?

Federal antidegradation regulations at 40 CFR § 131.12(a)(2) prohibit the lowering of high water quality unless it is necessary to accommodate important economic or social development. To answer the question of whether a given activity is "necessary", most states incorporate an alternatives analysis in their antidegradation requirements.

a. Proposed requirements

The proposed rules require the applicant to provide an evaluation of prudent and feasible pollution prevention, treatment and loading offsets that would avoid and minimize degradation. The MPCA makes a finding, after considering public comments, of whether the selected alternatives will minimize degradation, yet are prudent and feasible.

b. Other states' requirements

With the exception of SD, all of the states require an analysis of reasonable alternatives that would avoid and minimize impacts to the receiving water. Reasonable is defined in different ways including "*technically and economically reasonable*" (IL) and "*practicable, economically efficient and affordable*" (IA).

Like the proposed rules, OH includes offsets in their alternatives analysis. Also like the proposed rules, IA explicitly requires the identification of alternatives which result in the least degradation.

9. How is a determination made whether a lowering of high water quality is important to accommodate economic or social development?

a. Proposed requirements

The current rules require the MPCA to consider:

> *...the importance of economic and social development impacts of the project..."* Minn. R. 7050.0185, subp. 4

The same rule defines "*economic or social development*" as:

> *...the jobs, taxes, recreational opportunities, and other impacts on the public at large that will result from a new or expanded discharge.* Minn. R. 7050.0185, subp. 2(E)

The proposed rules expand the MPCA's consideration of importance which include factors such as household income, productivity, property values, tourism, contribution to social services, environmental risks, and the value of the water resource.

b. Other states' requirements

States' rules vary considerably in the level of detail in how "importance" is considered. SD does not provide any detail, while IN's rules contain many considerations. Where detail is provided, specific considerations of importance found in other states' rules are represented in what is found in the

proposed rules. Like the proposed rules, none of the other states provide formulas or thresholds for a determination of importance.

10. How does the public and other governmental entities participate in the decision of whether and to what extent high water quality is lowered?

a. Proposed requirements

Like the current rules, the public participation and intergovernmental cooperation requirement is achieved through existing procedures required for the issuance of the control document.

b. Other states' requirements

In IL, IN, MI and WI, public participation is provided through public notice procedure requirements associated with the issuance of control documents.

In IA, a public notice is circulated by the applicant within the geographical area of the proposed activity by posting the notice in the post office and other public places for at least 30 days and by publishing the notice at least one time in local newspapers and periodicals, or, if appropriate, in a newspaper of general circulation for the county where the activity will occur. The notice identifies the action being considered, beneficial and calls for comments from the public regarding the proposed activity. The applicant submits to the state a summary of public comments received and the applicant's responses at the time the applicant requests authorization for the activity under review. ND's public participation requirement is relatively simple and closely reflects the federal requirement in 40 CFR § 131.12(a)(2). Its purpose statement requires:

> *...full satisfaction of the intergovernmental coordination and public participation provisions of the continuing planning process, that a change in quality is necessary to accommodate important social or economic development in the area in which the waters are located.* NDAC Chapter 33-16-02.1(2)(a), Standards of Quality for Waters of the State (2001)

OH publishes a public notice within 30 days of receiving an application. A public notice of the state's proposed or draft action and its potential to lower water quality is published their procedural rules. Also in OH, public notice of recommendation and findings related to the state's antidegradation decision is provided in a daily or weekly newspaper which serves that affected area. Notification includes information regarding:

- a permit application has been tentatively denied;
- a statement of basis and proposed permit have been prepared; or
- a contested case hearing has been scheduled.

11. Are there review procedures specific to the issuance of general permits?

a. Proposed requirements

The proposed rules include specific antidegradation procedures for general permits. Under these procedures the MPCA conducts the antidegradation review during the development of the general permit. Like reviews for activities covered under individual permit, the public is given the opportunity to comment on the MPCA's review. Antidegradation review of individual activities covered under a general permit is not required as long as the terms and conditions of the permit are met.

b. Other states' requirements

North Dakota, SD and WI rules do not provide specifics on how antidegradation is applied to general permits. In IL and OH, activities covered under general permits are not required to undergo review. In IN, the regulatory agency conducts the review of NPDES general permits and activities covered under that permit are not subject to additional review. In MI, (except for Outstanding State Resource Waters, or as the state determines on a case-by-case basis) new or increased loadings authorized by

certificates of coverage under NPDES general permits and notices of coverage for stormwater from construction activities are not required to undergo review.

IA's rules are similar to what is being proposed. In that state, activities authorized by general permits are not required to undergo a Tier 2 antidegradation review as part of the Notice of Intent process. However, new and reissued general permits must be evaluated to consider the potential for degradation as a result of the permitted discharges. All NPDES general permits require that permit conditions be met, including the general requirement that permitted discharges must ensure that water quality standards are not violated and best management practices contained in the permit are implemented. Compliance with the terms of the general permits issued by the department is required to maintain authorization to discharge under the general permit. Discharges covered by a general permit that cannot comply with general permit conditions or antidegradation requirements will be required to seek coverage under an individual permit.