

Third Stakeholder Meeting for Nondegradation Rulemaking

Minnesota Pollution Control Agency

Sept. 25, 2008, 1:00pm-3:30pm, MPCA Offices, Duluth

Sept. 29, 2008, 9:00am-11:30am, MPCA Offices, Rochester

Sept. 30, 2008, 8:30am-11:30am, Dakota Lodge, West St. Paul

Agenda

- Welcome, introductions
- Review
- Comments received from Issue Papers 4 and 5
- Issue Paper 6 – “What are the best ways to describe impacts on receiving waters?”
- Small group discussions
- Written response to discussion points
- Break
- Issue Paper 7 – “How are baseline conditions used in the assessment of impacts on receiving waters?”
- Small group discussions
- Written response to discussion points
- Summary/Next Steps

What is nondegradation?

- Nondegradation = Antidegradation
- Nondegradation is:
 - Part of the states water quality standards
 - A procedure by which states review activities that have the potential to lower water quality
 - A tool used to maintain water quality

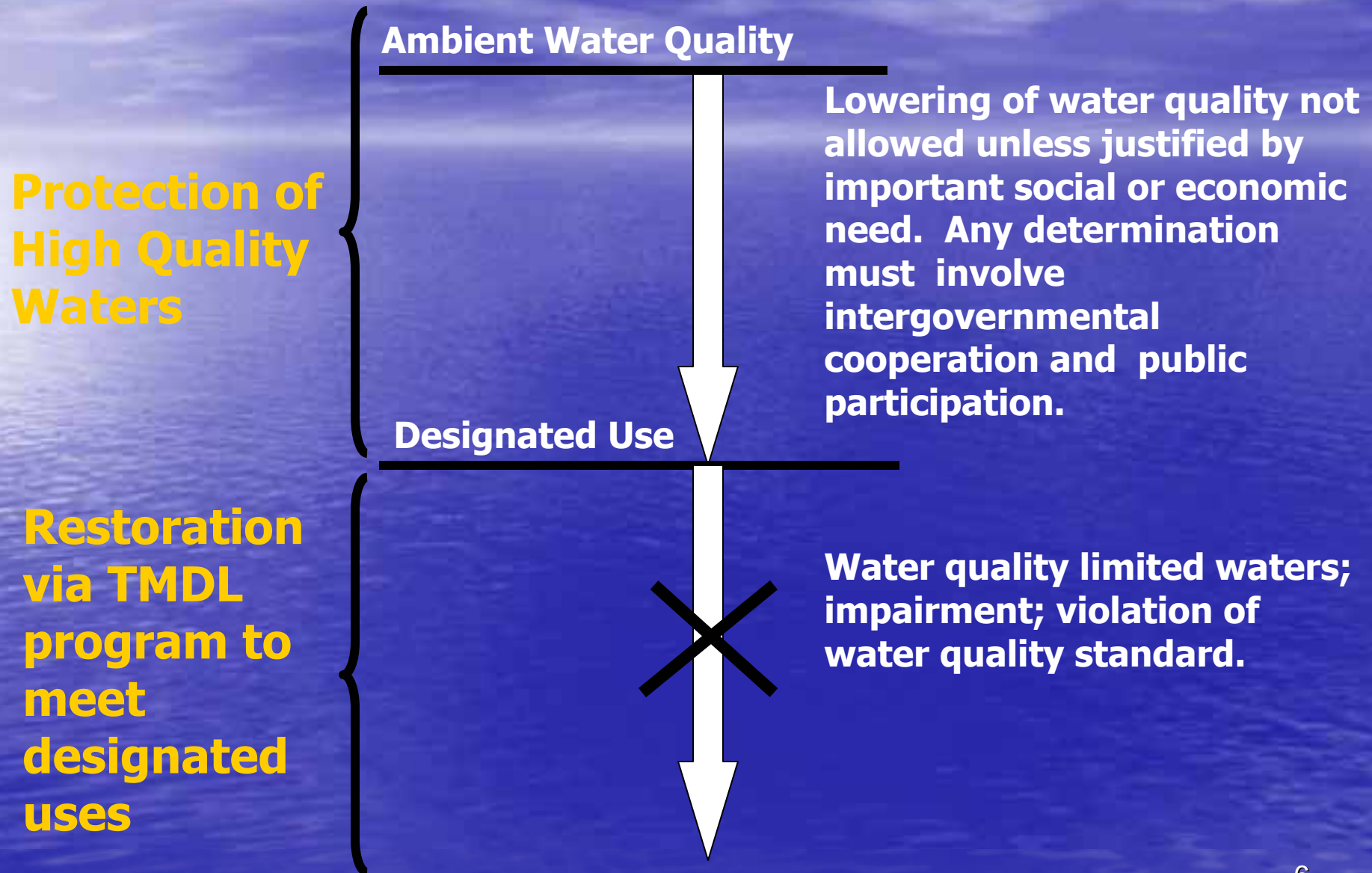
Federal Requirements - Clean Water Act (CWA)

- CWA objective:
 - “...restore and **maintain** the chemical, physical, and biological integrity of the Nation’s waters.”
- CWA requirement for adoption of water quality standards including:
 - Designated uses
 - Water quality criteria necessary to support designated uses
 - Antidegradation provisions

Federal Requirements - 40 CFR § 131.12

- Adopt antidegradation policy and implementation procedures consistent with federal regulations:
 - Protection of existing uses
 - Protection of high quality waters (waters where water quality is better than the standard); decision-making process
 - Protection of exceptional waters – Outstanding National resource waters
 - Protection from thermal degradation (consistent with CWA Section 316)

Tier 2 Protection



Basic approaches for the protection of high quality waters

- Approaches to **how** protection is applied
 - Pollutant-by-pollutant (parameter-by-parameter) approach
 - Waterbody-by-waterbody approach
- **When** is the determination of high quality made?
 - At time of antidegradation review
 - Prior to antidegradation review

Parts of an Antidegradation Review

- Antidegradation demonstration
 - Applicant submits information regarding type and level of activity, receiving water, projected impacts of activity to receiving water, alternatives considered, social and economic benefits of activity
- Antidegradation review
 - Agency reviews proposed activity; considers information through the nondegradation demonstration, intergovernmental cooperation and public participation, other sources
- Antidegradation decision
 - Agency makes final decision on whether and to what extent water quality is lowered

What triggers a review?

- Demonstrated lowering of water quality vs. based on activity/action
- Understanding of current, baseline and projected conditions
- Use of *de minimis* or significant threshold

Applicability, Implementation and Regulatory Control

- Antidegradation applies to any activity that has the potential to affect water quality.
- Antidegradation has traditionally been implemented through:
 - statutory and regulatory controls where there is regulatory authority over point sources
 - “cost-effective and reasonable BMPs for nonpoint sources”
- Antidegradation is only enforceable where there is regulatory authority (control document)
 - Examples: NPDES permits, 401 certifications

Review of comments from Issue Papers 4 and 5

- (5 slides)

Issue Paper 6. What are the best ways to describe impacts on receiving waters?

- Determination “whether and to what extent” water quality may be lowered
 - “whether”: Does a proposed activity affecting a high quality water require review? Are existing uses and ORVWs protected?
 - “what extent”: How much will water quality be lowered? Is it significant? How will it add to cumulative effects? Will designated uses be protected?
- Impacts may be described for:
 - a specific activity, on a case-by case basis
 - general group of activities, establishing relationships between types of activities and their impacts
- Inability to describe impacts may lead to degradation and impairment

Considerations for describing impacts

- “Parameters of concern”
- Describing conventional chemical parameters in terms of concentration and mass loading
- “Unconventional” parameters
- Where there are no standards
- Antidegradation and TMDLs
- Biological impacts

Defining “parameters of concern”

- Defining pollutants and pollution
- Minn. Statute 115.01, Subd. 13, Pollution of water
 - a) Discharge of pollutants into waters of the state
 - b) Alterations of the chemical, physical, biological or radiological integrity of waters
- Antidegradation is applicable to all chemical pollutants

Pollutant, Minn. Statute 115.01

- Subd. 12 **Pollutant.** "...any 'sewage,' 'industrial waste,' or 'other wastes,' as defined in this chapter, discharged into a disposal system or to waters of the state."
- Subd. 9. **Other wastes.** "Other wastes" mean garbage, municipal refuse, decayed wood, sawdust, shavings, bark, lime, sand, ashes, offal, oil, tar, chemicals, dredged spoil, solid waste, incinerator residue, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, cellar dirt or municipal or agricultural waste, and all other substances not included within the definitions of sewage and industrial waste set forth in this chapter which may pollute or tend to pollute the waters of the state.

Impacts may be evaluated in terms of:

- Toxicity and long-term chronic effects
- Carcinogenetic or mutagenic effects
- Persistency in the water column or sediments (conservative vs. non-conservative)
- Bioaccumulation, bioavailability
- Effects on reproduction or other population changes
- Synergistic or additive effects
- Overall effect on biological communities

Additional considerations

- Potential for impact
- Cost of prevention and treatment
- Use of surrogate measures
 - May be used where adequate information regarding pollutant parameters is not available or attainable
 - May be used to gain efficiencies
 - Requires good understanding of relationship between the pollutant and the surrogate

Addressing “parameters of concern”

- How are they determined?
 - i.e., Ranking/prioritization, case-by-case, based on activity type, etc.
- When are they determined?
 - i.e., At time of review, prior to review
- Where are they listed?
 - i.e., Rule, guidance, permit, etc.
- Who makes the determination?
 - i.e., MPCA, through the public participation and intergovernmental cooperation requirement of antidegradation provisions, etc.

Describing impacts from conventional chemical pollutants in terms of concentration and mass

- Numeric water quality standards most often expressed as concentration
- Load allocations expressed as mass loading
- Type of pollutant
- Localized impacts and downstream cumulative impacts
- Background conditions
- Ultimately: Will the pollutant diminish the integrity of the waterbody?

Addressing “unconventional” parameters

- Those not readily described in terms of concentration or mass
- Examples: D.O., pH, temperature, turbidity, flow
- Use of surrogates
- May be described in terms of:
 - Specified ranges
 - Natural conditions
 - Net changes
 - Specified absolute limits

Washington State*

- Potential to cause a measurable change in water quality
 - Temperature, increase ≥ 0.3 °C
 - D.O., decrease ≥ 0.2 mg/L
 - Turbidity, increase ≥ 0.5 NTU
 - Bacteria, increase ≥ 2 cfu/100 mL

*WAC 173-201A-320

Where there are no standards

- Not all pollutants or polluting actions have standards
- Challenges
 - Determination of high quality waters
 - Protection of high quality waters
 - Creation of baseline conditions
 - Determination of assimilative capacity

Antidegradation provisions and TMDL programs

- Use of established programs to gain efficiencies
 - Data
 - Monitoring
 - Tools/methodologies
- Through TMDL implementation, impaired waters are brought up to “high quality” and require tier 2 protection.
- Antidegradation provisions should be strong enough to keep waters from falling back into an impaired status.

Invasive species, and species which are threatened or endangered

- Prevention from introduction of invasive species
- Management measures for established invasives
- Creation of numeric biological standards
 - Biological impairments
- Special designations to protect threatened and endangered species

Issue Paper 6 – Discussion Points

- Is there a need to determine “parameters of concern”?
 - How
 - When
 - Where
- For chemical pollutants, under what circumstances (i.e., conditions, pollutants, receiving waters, etc.) would:
 - only concentration be used to describe impacts?
 - only mass loading be used to describe impacts?
 - both concentration and mass loading be used?

Issue Paper 6 – Discussion Points (continued)

- Should flow alterations or changes in water volume of a receiving water be addressed in antidegradation decisions?
- Is the use of surrogates to describe impacts to receiving waters a good idea?
- Should a designated use receive tier 2 protection for a given parameter where there is no standard for that parameter?

Issue Paper 6 – Discussion Points (continued)

- What concepts, tools or methodology from TMDL programs could be used to evaluate proposed activities for the purpose of antidegradation review?
- Should numeric biological standards be developed to reflect native aquatic communities?
- Should waters containing invasive species have some special designation indicating a biological impairment?

Issue Paper 6 – Discussion Points (continued)

- Should waters currently supporting threatened or endangered species have some special designation similar to designating waters as ORVWs? What other approaches could be used?

Issue Paper 7. How are baseline conditions used in the assessment of impacts on receiving waters?

- Baseline for protecting existing uses
- Baseline for protecting high quality waters
 - Options
 - Challenges
- Can baselines change with changes in water quality?

Baseline for existing uses

- Existing uses = those uses attained since Nov. 28, 1975, or the water quality necessary to protect those uses, whether or not those uses are designated uses.
 - Designated uses = desired uses specified in broad classes.
- In general, waters subject **only** to tier 1 protection are those at or below standards.
- However, all waters are subject to tier 1 protection, whether impaired, high quality or ORVWs

Baselines for protecting high quality waters (tier 2 protection)

- Options
 - “Date of adoption” – Water quality conditions as of the date tier 2 protection was adopted into water quality standards.
 - “Existing water quality” – Established when adequate information has been gathered about the condition of the receiving water.
 - No firm baseline

Baselines for protecting high quality waters (tier 2 protection) - Examples

- Date of adoption
 - Minnesota – Jan.1, 1988; if no data is available may use data collected after baseline date
 - California – 1968
- Existing water quality
 - Missouri – *Existing water quality* (EWQ)
 - Nevada – Requirement to maintain existing higher quality (RMHQ)
- Baseline not well defined
 - South Carolina – Water quality before new or expanded discharge. This baseline coupled with allowance for *de minimis* discharges has the potential to result in slowly deteriorating water quality.

Baselines for protecting high quality waters (tier 2 protection) - Challenges

- Availability and accuracy of historical records
- Determining an acceptable degree of confidence
 - Monitoring data
 - Modeling
- Creating consistency
- Time requirements for monitoring
- Determining which parameters to measure
- Emerging contaminants

Can baselines change with changes in water quality?

- “Downward” changes from permitted activities
 - May not cause impairment
 - Must include cumulative cap on degradation
- “Upward” changes
 - Current MN Rule: Where water quality improves as a result of eliminated or reduced discharge, baseline may be adjusted to account for the improvement.
 - EPA recommends that when a better/high use class is attained, waterbody may be reclassified and new standards apply.

Issue Paper 7 – Discussion Points

- Is the establishment of baseline conditions necessary to implement antidegradation? Why or why not?
- For the protection of high quality waters, Minnesota uses the date (Jan. 1, 1988) on which nondegradation provisions for “All Waters” was adopted into the state’s water quality standards to establish baseline conditions. Is this the best approach to establishing conditions? What approach would you recommend?

Issue Paper 7 – Discussion Points (continued)

- Considering the challenges in establishing baseline conditions based on actual monitoring data, what are the best options for creating baseline conditions?
- Should baseline conditions be allowed to be adjusted “upward” when there is an improvement in water quality? Why, or why not?
- Conversely, if the originally-established baseline water quality is permitted to decline (through the antidegradation review process), does the new, allowed water quality conditions become the new baseline?

Next Steps

- Next meeting scheduled for November
- Additional meeting focused on stormwater issues
- Additional comments received up to one week after meeting
- Additional opportunities for discussion
- Nondegradation Rulemaking Web Page:
 - <http://www.pca.state.mn.us/water/nondegradation-rule.html>