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WATER QUALITY STANDARDS HANDBOOK

DRAFT CHAPTER 4: Antidegradation

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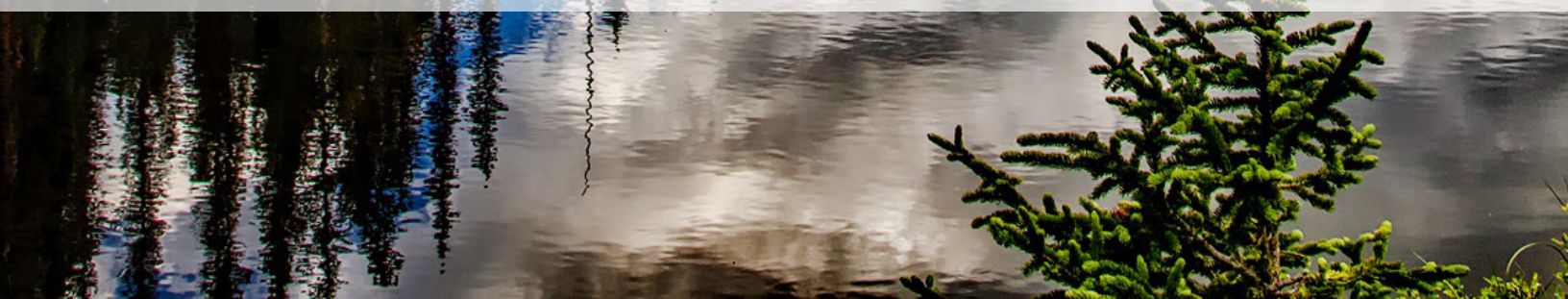

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Table of Contents

INTRODUCTION 1

4.1 BACKGROUND 4

4.1.1 History of the Federal Antidegradation Regulation 4

4.1.2 Summary of the Federal Antidegradation Regulation 6

4.1.3 The EPA's Authority to Review Antidegradation Policies and AIMs 12

4.1.4 Applicability of Antidegradation Policies and AIMs 14

4.1.5 Antidegradation in CWA Implementation Programs 16

4.1.6 Tribal Reserved Rights 18

4.1.7 Federal Promulgations for Tribes 18

4.2 PROTECTION OF EXISTING USES - 40 CFR 131.12(a)(1) 20

4.3 PROTECTION OF HIGH QUALITY WATERS - 40 CFR 131.12(a)(2) 22

4.3.1 Identification of High Quality Waters 23

4.3.1.1 Determining Ambient Water Quality 24

4.3.1.2 Parameter-by-Parameter Approach 25

4.3.1.3 Waterbody-by-Waterbody Approach 27

4.3.1.4 Hybrid Approach 33

4.3.1.5 Considerations for Selecting an Approach 34

4.3.2 Antidegradation Tier 2 Review 35

4.3.2.1 Tier 2 Review: Identification of Activities that Potentially Lower High Water Quality 37

4.3.2.2 Tier 2 Review: Determining Necessity and Importance of an Activity 38

4.3.2.3 Tier 2 Review: Intergovernmental Coordination and Public Participation 46

4.3.2.4 Tier 2 Review: Assurance of Existing Use Protection 47

4.3.2.5 Tier 2 Review: Point and Nonpoint Sources 47

4.3.3 Use of *De Minimis* in Antidegradation 48

4.4 OUTSTANDING NATIONAL RESOURCE WATERS - 40 CFR 131.12(a)(3) 55

4.5 ADDITIONAL PROTECTION ESTABLISHED BY STATES AND AUTHORIZED TRIBES (TIER 2½) 59

4.6 THERMAL DISCHARGE REQUIREMENTS – 40 CFR 131.12(a)(4) 60

4.7 ANTIDEGRADATION IMPLEMENTATION METHODS 61

4.8 APPLICATION AND IMPLEMENTATION 63

4.8.1 CWA Section 402: NPDES Permits 64

4.8.1.1 General Permits 68

4.8.2 CWA Section 404: Dredged or Fill Material Permits 69

4.8.3 CWA Section 401 Certification 70

4.8.4 CWA Sections 303(d) and 305(b) Assessment, Listing, and TMDLs 71

List of Figures

Figure 4-1 Example of Water Quality that is Better than Necessary to Support a CWA Section 101(a)(2) Use. 23

Figure 4-2 Example of Lowering of High Water Quality 24

Figure 4-3 Example of the Parameter-by-Parameter Approach 26

Figure 4-4 Example of a Water Receiving Antidegradation Tier 2 Protection Using the Waterbody-by-Waterbody Approach 32

Figure 4-5 Example of a Water Not Receiving Antidegradation Tier 2 Protection Using the Waterbody-by-Waterbody Approach 33

Figure 4-6 Example of a *De Minimis* Threshold 50

Figure 4-7 Example of the Cumulative Impact of Multiple *De Minimis* Activities 51

Figure 4-8 Determining whether a Tier 2 review is needed before issuing an NPDES permit using either the parameter-by-parameter approach or the waterbody–by–waterbody approach 66

List of Acronyms and Abbreviations

AIMs	Antidegradation implementation methods
BCC	Bioaccumulative chemical of concern
BMP	Best management practice
CFR	Code of the Federal Register
CWA	Clean Water Act
Corps	United States Army Corps of Engineers
EPA	United States Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
NOI	Notice of intent
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint source
ONRW	Outstanding National Resource Water
TBEL	Technology-based effluent limit
TMDL	Total Maximum Daily Load
WQBEL	Water quality-based effluent limit
WQS	Water quality standards

4 INTRODUCTION

Antidegradation policies and antidegradation implementation methods (AIMs) are essential to the water quality standards (WQS) program. The three core components of WQS are designated uses, water quality criteria, and an antidegradation policy. In addition, states and authorized Tribes are required to develop AIMs to describe how the antidegradation policy will be implemented (40 CFR 131.12(b)). Designated uses are the uses specified in WQS for each waterbody or waterbody segment whether or not they are being attained. Designated uses establish the management objectives for a waterbody. Water quality criteria define the water quality conditions that protect those designated uses. Antidegradation policies and AIMs complement these elements by providing a framework for maintaining and protecting water quality that has already been achieved. This includes maintaining and protecting existing uses[1] (Tier 1), maintaining and protecting high quality waters[2] (Tier 2), and maintaining and protecting the water quality of outstanding National resource waters (ONRWs) (Tier 3). Antidegradation policies and AIMs play a critical role in helping states and authorized Tribes maintain and protect the valuable public resource of clean water and ensure that decisions to allow lowering of high water quality are made in a public manner and serve the public good.[3] See Draft Chapter 2 and Chapter 3 of this Handbook for further discussion of designated uses and water quality criteria, respectively.

Antidegradation plays an integral role in maintaining and protecting water quality consistent with the Clean Water Act (CWA). Therefore, the United States Environmental Protection Agency's regulation requires states and authorized Tribes[4] to adopt antidegradation policies and develop AIMs (see section 4.1.1 for discussion of antidegradation history and the CWA). Such state and authorized Tribal antidegradation policies and AIMs provide a framework to maintain a minimum level of water quality protection and, where water quality exceeds that minimum level of protection, balance water quality protection with the opportunity for important community growth.[5] That framework requires maintenance of water quality already achieved, provides a mechanism to protect highly valued waters, and requires states and authorized Tribes to involve the public in decisions that could potentially lower high water quality. This

[1] Existing uses are those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in the WQS (40 CFR 131.3(e)).

[2] The EPA uses the term high quality waters to refer to waters that have water quality that is better than necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water, and thus has some assimilative capacity for one or more parameters.

[3] *Water Quality Standards Regulation,* 63 Fed. Reg. 36780 (July 7, 1998).

[4] Hereafter referred to as "states and authorized Tribes". "State" in the CWA and this document refers to a state, the District of Columbia, the Commonwealth of Puerto Rico, the United States Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. "Authorized Tribes" refers to those federally recognized Indian Tribes with authority to administer a CWA WQS program.

[5] *Water Quality Standards Regulatory Clarifications*, 78 Fed. Reg. 54528 (September 4, 2013).

framework informs an antidegradation review, which is the process that a state or authorized Tribe uses to ensure that the appropriate Tier 1, 2, and/or 3 protections are provided for a waterbody or waterbody segment when considering whether to allow an activity that would lower water quality. For ensuring Tier 2 protection, a state or authorized Tribe will conduct a Tier 2 Review, including public participation and intergovernmental coordination, to decide whether allowing some lowering of water quality in a high quality water is necessary to accommodate important economic or social development in the area in which the waters are located.

High water quality is a shared amenity that benefits local communities in a wide variety of ways. High quality surface waters can serve as a focal point for recreation and tourism through community development or redevelopment projects like river walks, canoe liveries, and boat tours. They can support community health and welfare by providing opportunities to recreate in and on the water as well as supplemental or subsistence nutrition through recreational and subsistence fishing. They also increase property values, lower drinking water costs, create jobs, support commercial fisheries, and increase the diversity and resilience of aquatic ecosystems.[6] Thus, maintaining high water quality is particularly critical to supporting economic growth, community growth, and sustainability. Additionally, protecting high water quality, including habitat and aquatic community structure, will afford the waterbody increased resilience to potential future stressors, such as atmospherically deposited pollutants, emerging contaminants, and climate change. The impacts of climate change, such as increased water temperatures, more frequent and severe droughts, and increases in extreme weather events, in combination with other anthropogenic stressors, such as stormwater runoff due to growing urbanization and water withdrawals for agricultural, industrial, and municipal purposes, can make it more difficult to meet the CWA's objective "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (CWA Section 101(a)). Protecting water resources from these adverse impacts

[6] See also https://www.epa.gov/sites/production/files/2015-10/documents/economic_benefits_factsheet3.pdf; *Economic Benefits of Protecting Healthy Watersheds* (EPA 841-N-12-004, April 2012).

depends on maintaining or restoring resilience, i.e., the ability of waterbodies to recover after a disturbance and their capacity to maintain their ecological functions despite the disturbance. However, with changing conditions expected to result from climate change, management strategies of the past may not be adequate to mitigate the impacts of stressors to a waterbody.[7] Using WQS to maintain or build a margin of safety in water quality affords a waterbody increased resilience in the face of future stressors, including climate change.

The WQS program provides a holistic approach to promote system resilience to climate change and facilitates efficient coordination and implementation of water quality management actions. This chapter presents ways one can use antidegradation to maintain and enhance waterbody resilience to climate change effects. For example, section 4.3 discusses how the Tier 2 process of antidegradation can be used to maintain and protect high quality waters, including protecting assimilative capacity, which helps to maintain waterbody resilience. While preventing degradation and maintaining a reliable source of clean water may involve costs, it is often less expensive and more effective and efficient than long-term restoration efforts or remedial actions.[8]

This chapter presents background information on antidegradation history, the federal regulation, EPA authority, and applicability of antidegradation. It is followed by a discussion of the three categories, or tiers, of antidegradation protection, thermal discharge requirements, and application and implementation of antidegradation.

[7] EPA. 2011. *Aquatic Ecosystems, Water Quality, and Global Change: Challenges of Conducting Multi-stressor Global Change Vulnerability Assessments.* EPA, Office of Research and Development. Washington, DC 20460. EPA/600/R-11/011F. August 2011.

[8] *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51029-51030 (August 21, 2015).

4.1 BACKGROUND

4.1.1 History of the Federal Antidegradation Regulation

On February 8, 1968, the Secretary of the United States Department of the Interior released the first antidegradation policy statement in connection with the review and approval of WQS for interstate and coastal waters:[9]

> *"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. Those and other waters of a State will not be lowered in 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."*

The EPA refined that statement and included it in the first federal WQS regulation in 1975 (40 Code of the Federal Register (CFR) 130.17(e)):[10]

> *"The State shall develop and adopt a Statewide antidegradation policy and identify the methods for implementing such policy pursuant to 5130.10(b)(2). The antidegradation policy and implementation methods shall, at a minimum, be consistent with the following:*
>
> ***(1)*** *Existing instream water uses shall be maintained and protected. No further water quality degradation which would interfere with or become injurious to existing instream water uses is allowable.*
>
> ***(2)*** *Existing high quality waters which exceed those levels*

[9] U.S. Department of the Interior, Federal Water Pollution Control Administration. 1968. *Compendium of Department of the Interior Statement on Non-degradation of Interstate Waters.* Washington, DC 2042. August 1968. https://www.epa.gov/sites/default/files/2014-10/documents/doiwaters.pdf.

[10] *Water Quality Standards*, 40 Fed. Reg. 55340-55341 (November 28, 1975).

necessary to support propagation of fish, shellfish and wildlife and recreation in and on the water shall be maintained and protected unless the State chooses, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, to allow lower water quality as a result of necessary and justifiable economic or social development. In no event, however, may degradation of water quality interfere with or become injurious to existing instream water uses. Additionally, no degradation shall be allowed in high quality waters which constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance. Further the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and feasible management or regulatory programs pursuant to section 208 of the Act for nonpoint sources, both existing and proposed.

(3) *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."*

The 1975 federal WQS regulation was then slightly revised and re-promulgated as part of the 1983 federal WQS regulation (40 CFR 131.12).[11]

Several provisions in the CWA form the basis for antidegradation, including the CWA's principal objective, which is to ". . . restore and *maintain* the chemical, physical and biological integrity of the Nation's waters" (emphasis added) (CWA Section 101(a)) and the provision that made WQS adopted prior to 1972 the starting point for CWA water quality requirements (CWA Section 303(a)). Congress explicitly affirmed the principle of antidegradation through:

- An amendment in the Water Quality Act of 1987, codified in CWA Section 303(d)(4)(B), that requires consistency with antidegradation policies before making revisions to certain National Pollutant Discharge Elimination System (NPDES) permits, and
- The 1990 Great Lakes Critical Programs Act, codified in CWA Section 118(c)(2), requiring the EPA to publish Great Lakes water quality guidance including antidegradation policies and implementation procedures.

In August 2015, as part of a revision of the federal WQS regulation, the EPA revised the federal antidegradation regulation to promote transparency and public involvement and provide a better-defined framework for states and authorized Tribes to maintain

[11] *Water Quality Standards Regulation*, 48 Fed. Reg. 51400-51413 (November 8, 1983). See page 51402-51403 for a discussion of revisions to the antidegradation regulation.

and protect high quality waters.[12] The revised requirements strengthened the evaluation states and authorized Tribes must conduct to identify and manage high quality Tier 2 waters, and required increased opportunities for the public and stakeholders to be involved in the state or authorized Tribal decision-making process.

Timeline of Antidegradation Regulation Development

1968	DOI released first antidegradation policy statement
1975	The EPA refined the antidegradation policy statement and included it in the first federal WQS regulation
1983	Revised and re-promulgated the federal antidegradation WQS regulation
1987	Water Quality Act of 1987 required consistency with antidegradation policies before issuing certain NPDES Permits
1990	Great Lakes Critical Programs Act of 1990 required the EPA to publish Great Lakes water quality guidance, including antidegradation policies and implementation procedures
2015	The EPA revised the federal antidegradation regulation to provide a better-defined framework for states and Tribes, including greater transparency and public involvement in antidegradation policies and implementation

4.1.2 Summary of the Federal Antidegradation Regulation

The federal WQS regulation at 40 CFR 131.12 specifies requirements for states' and authorized Tribes' antidegradation programs. 40 CFR 131.12 requires states and authorized Tribes to develop two elements for their antidegradation programs: an antidegradation policy and AIMs. The antidegradation policy establishes the legal requirements for protection of existing uses, high quality waters, and ONRWs, while the AIMs explain how the policy will be carried out by the state

ANTIDEGRADATION REGULATION

131.12 - Antidegradation Policy and Implementation Methods
- **131.12(a)** - Antidegradation Policy
  - **131.12(a)(1)** - Existing Use Protection
  - **131.12(a)(2)** - High Quality Water Protection
  - **131.12(a)(3)** - ONRW Protection
  - **131.12(a)(4)** - Thermal Discharge Requirements
- **131.12(b)** - AIMs

[12] *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51029-51035 (August 21, 2015).

or authorized Tribe. Each state's or authorized Tribe's policy and AIMs must be consistent with 40 CFR 131.12. In addition, a state's or authorized Tribe's AIMs must be consistent with its policy.

Antidegradation Policies

Antidegradation policies are a set of legally binding requirements included in states' or authorized Tribes' WQS that describe the expectations for preventing or minimizing degradation to waters, in a manner consistent with 40 CFR 131.12(a) (e.g., protections for existing uses, high quality waters, and ONRWs). Although not required, states and authorized Tribes typically adopt language that is similar to the language of the provisions at 40 CFR 131.12(a) as their antidegradation policy. Where a state or authorized Tribe chooses to develop its own antidegradation policy language, the EPA's regulation requires that any antidegradation policy adopted be consistent with 40 CFR 131.12.[13] The EPA recommends that the state or authorized Tribe include its antidegradation policy in its WQS regulation for the sake of public transparency. However, a state or authorized Tribe may choose to include it in another legally binding regulation. When choosing this path, states and authorized Tribes should specifically reference their antidegradation policy in their WQS regulation to maintain the clear functional relationship between their antidegradation policy and their WQS regulation.

Antidegradation Tiers

A state's or authorized Tribe's antidegradation policy must, at a minimum, provide for protection of the three antidegradation categories specified in 40 CFR 131.12(a). These categories of protection are commonly referred to as "tiers." It is important to note that CWA Section 510 gives states and authorized Tribes the discretion to adopt antidegradation policies more protective than required under the federal regulation.

40 CFR 131.12(a)(1), or "Tier 1," requires the maintenance and protection of "existing instream water uses," providing the absolute floor for protection of water quality in all waters of the United States.[14] 40 CFR 131.3(e) defines existing uses as ''those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in the water quality standards.''

40 CFR 131.12(a)(2), or "Tier 2," addresses waters where the water quality exceeds the levels necessary to support the CWA Section 101(a)(2) uses,[15] which include the protection and propagation of fish, shellfish, and wildlife and recreation in and on the

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[13] See question 4.1 of EPA. 2012. *What is a New or Revised Water Quality Standard Under CWA 303(c)(3) Frequently Asked Questions*, EPA's Office of Water. Washington, DC 20460. EPA-820-F-12-017. https://www.epa.gov/sites/production/files/2014-11/documents/cwa303faq.pdf.

[14] *Water Quality Standards Regulation*, 48 Fed. Reg. 51403 (November 8, 1983).

[15] For purposes of a plain language discussion in this chapter, the EPA uses the term "101(a)(2) use" to refer to any use that fully supports the uses specified in CWA Section 101(a)(2), including subcategories that support the uses specified in CWA Section 101(a)(2) (e.g., aquatic life use, recreation use, warm water aquatic life use, cold water aquatic life use, primary contact recreation). See Draft Chapter 2, section 2.1.1. for additional discussion.

water.[16] The EPA refers to these waters as "high quality waters." These high quality waters can be identified on a parameter-by-parameter basis, where each parameter is evaluated individually to see if it exceeds the levels necessary to support the CWA Section 101(a)(2) uses. These waters can also be identified on a waterbody-by-waterbody basis, where the waterbody is holistically evaluated to see if it is high quality. The water quality of high quality waters must be maintained and protected unless the state or authorized Tribe makes a finding that a lowering[17] of water quality is necessary to allow important economic or social development in the area in which the waters are located. The state or authorized Tribe may only allow a lowering of water quality in a high quality water after the state or authorized Tribe has followed and met all of the requirements described in 40 CFR 131.12(a)(2).

40 CFR 131.12(a)(3), or "Tier 3," provides the highest level of water quality protection to ONRWs.[18] ONRWs are waters that states and authorized Tribes want to protect from further degradation because they are highly valued. Any waterbody may be assigned as an ONRW if the state or authorized Tribe believes it merits such protection. The federal regulation prohibits lowering of water quality in ONRWs, except on a short-term or temporary basis.[19] Broadly, good candidates for ONRWs include the following:

- Waters of National and State parks and wildlife refuges,
- Waters with highly intact ecosystems and high levels of biological integrity,
- Waters that are important to the protection or restoration of state, Tribal or federal listed species,
- Waters that have unusual or unique ecological or recreational resources,
- Waters that are of exceptional recreational significance,
- Waters that are of exceptional ecological significance,
- Waters that have exceptional importance to human health (i.e., drinking water sources), or
- Waters of cultural significance.

States and authorized Tribes must provide Tier 1 protection to all waters of the United States. Tier 2 protection must be provided to waters that are identified as high quality by a state or authorized Tribe. States and authorized Tribes can choose which method they will use to identify high quality waters, either the parameter-by-parameter approach or waterbody-by-waterbody approach (See sections 4.3.1.2 and 4.3.1.3 of this chapter, respectively). If the state or authorized Tribe uses a parameter-by-parameter approach, then Tier 2 protection will be provided to waters where chemical, physical, or biological parameters exceed the levels necessary to protect CWA Section 101(a)(2) uses. If the

[16] *Water Quality Standards Regulation*, 48 Fed. Reg. 51403 (November 8, 1983).
[17] Lowering means an increase in pollution, resulting from an activity that would use some of the assimilative capacity in a high quality water. See also Figure 4-2 in this chapter.
[18] *Water Quality Standards Regulation*, 48 Fed. Reg. 51403 (November 8, 1983).
[19] Ibid.

state or authorized Tribe uses a waterbody-by-waterbody approach, then the state or authorized Tribe will perform holistic evaluations of its waters to determine which waters will receive Tier 2 protection. Which waters receive Tier 3 protection is at the state's or authorized Tribe's discretion.

Antidegradation Tiers vs. Designated Uses

Antidegradation tiers and designated uses are two distinct concepts in the WQS program. Antidegradation tiers are categories of protection for water quality while designated uses[20] are an expression of the desired condition or environmental objective for the water, even if the water quality to protect such uses has not yet been attained. Antidegradation complements designated uses and criteria by providing a mechanism whereby consideration of the importance of preserving current water quality is an explicit requirement before an action that degrades such water quality occurs. As such, the EPA has two separate sets of regulations addressing the designation of uses (40 CFR 131.10) and antidegradation (40 CFR 131.12).

At times, states and authorized Tribes have adopted antidegradation tiers as designated uses in their WQS. The EPA does not recommend this practice as it can create confusion and make the implementation of antidegradation more difficult. For example, Tier 2 only establishes that high water quality must be maintained unless degradation is necessary to accommodate important social and economic development. It does not identify a desired function or activity for the waterbody. Determining whether a water is "high quality" is dependent upon determining whether the current water quality exceeds the criteria established to protect designated uses consistent with CWA Section 101(a)(2). If a state were to adopt "Tier 2" as a designated use, it would be unclear what function or activity that Tier 2 "use" would be protecting and thus what criteria would be needed to protect the designated use. In addition, adopting an antidegradation tier as a designated use could limit the state's or authorized Tribe's ability to change Tier 2 and Tier 3 assignments, because adding or removing a designated use requires revising the state's or authorized Tribe's WQS (and thus a rulemaking) and the revision must be consistent with 40 CFR 131.10. If a state or authorized Tribe realizes they unintentionally

[20] A use is a particular function of, or activity in, a water of the United States that requires a specific level of water quality to support it (see *Water Quality Standards Regulatory Clarifications*, 78 Fed. Reg. 54522 (September 4, 2013)).

adopted antidegradation tiers as designated uses, it can work with its EPA regional WQS coordinator to appropriately revise its WQS to separate the two concepts. For more information on designated uses, please refer to Draft Chapter 2 of this Handbook.

Thermal Discharges

Antidegradation policies must be consistent with CWA Section 316. When authorizing thermal discharges, states and authorized Tribes must provide protection for waters in any of these three tiers in a manner consistent with CWA Section 316. 40 CFR 131.12(a)(4) addresses potential water quality impairments associated with thermal discharges. This federal regulation aligns the antidegradation requirements with those established in CWA Section 316 for setting thermal discharge limitations.

For additional information about Tier 1, Tier 2, and Tier 3 protection, see sections 4.2, 4.3, and 4.4 of this chapter, respectively. For further discussion about thermal discharges, see section 4.5 of this chapter.

Antidegradation Implementation Methods

AIMs refer to additional documents or provisions in which a state or authorized Tribe describes methods for implementing its antidegradation policy.[21] 40 CFR 131.12(b) requires each state and authorized Tribe to develop AIMs, which must be consistent with the federal antidegradation regulation and the state's or authorized Tribe's own antidegradation policy. 40 CFR 131.12(b) also requires states and authorized Tribes to provide an opportunity for public involvement during the development and any subsequent revisions of the AIMs and requires AIMs to be publicly available. States and authorized Tribes have the discretion to adopt their AIMs into rule or other legally binding form or identify them in non-legally binding guidance. While the EPA does

[21] *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51034 (August 21, 2015).

not require states and authorized Tribes to adopt AIMs as legally binding provisions, it encourages states and authorized Tribes to consider doing so. Adopting AIMs as legally binding provisions provides more transparency to the public and other stakeholders, increases accountability, and provides a greater degree of regulatory certainty and consistency to regulated entities.

States and authorized Tribes have the flexibility to engage the public in the development or revision of their AIMs in a way that best suits them and the public when working to meet the public involvement requirement at 40 CFR 131.12(b). The public involvement requirement could be satisfied using a variety of mechanisms such as a public hearing, public meeting, or public workshop. Online approaches such as webinars or website postings that include contact information so the public has the opportunity to provide input could also be used. In 40 CFR 131.12(b), the EPA purposefully uses the phrase "opportunity for public involvement" to provide for this type of flexibility and to be different from the "public participation" requirement in 40 CFR 131.20(b). "Public participation" as it is used in 40 CFR 131.20(b) implements CWA Section 303(c)(1) and refers to a state or authorized Tribe holding a public hearing, which is a formal meeting with specific protocols for public engagement, consistent with 40 CFR 25.5 for the purpose of reviewing or revising WQS at least once every three years.

If a state or authorized Tribe adopted AIMs as part of its WQS rule or in another legally binding form (e.g., part of permitting regulation), those AIMs are considered WQS. Therefore, the state or authorized Tribe must hold a public hearing when those AIMs are initially adopted or revised to meet the public participation requirements for adopting new WQS in 40 CFR 131.20(b). This public hearing would also satisfy the requirement in 40 CFR 131.12(b) for public involvement.

Where a state or authorized Tribe has its AIMs in guidance or other non-legally binding form, it must meet the public involvement requirement at 40 CFR 131.12(b), although the state or authorized Tribe has the discretion to choose the method of public involvement which will most effectively reach and engage its citizens. States and authorized Tribes may find that the provisions regarding the Continuing Planning Process described at CWA Section 303(e) and 40 CFR 130.5 can facilitate the state's or authorized Tribe's establishment and maintenance of a process for the public to provide input on its AIMs consistent with the requirements of the federal regulation.[22]

Antidegradation Requirements for Waters of the Great Lakes System

Because of the documented environmental harm that can arise from pollutants that bioaccumulate in the Great Lakes basin ecosystem, the EPA's Water Quality Guidance for the Great Lakes System at 40 CFR Part 132 adds several antidegradation requirements for those waters with greater specificity and precision compared to the general antidegradation requirements in 40 CFR 131.12.

[22] See 40 CFR 130.5(a) and 40 CFR 130.5(b)(6) for additional provisions regarding the requirements for establishing a CPP.

As defined in the 40 CFR Part 132 regulation, the Great Lakes system consists of all streams, rivers, lakes, and other bodies of water within the drainage basin of the Great Lakes within the United States. The added 40 CFR Part 132 antidegradation requirements apply to any regulated action or activity that is anticipated to result in an increased loading of persistent bioaccumulative pollutants termed "bioaccumulative chemicals of concern" (BCCs).[23] Great Lakes states and authorized Tribes must adopt an antidegradation standard and implementation procedures for BCCs consistent with 40 CFR Part 132 requirements for the Great Lakes system and have the option of applying them to other pollutants and other state or Tribal waters at their discretion. In the event of any inconsistencies between the 40 CFR 131.12 and 40 CFR Part 132 requirements applicable to BCCs, the Great Lakes state or authorized Tribal WQS must comply with the more stringent provision.

Examples of the antidegradation requirements targeted on BCCs in the Great Lakes system include the following:

- Requiring use of the pollutant-by-pollutant approach for identifying high quality waters,
- Requiring use of any increased mass loading of a BCC as the measure of lowering water quality,
- Assigning antidegradation decisions to the director of the relevant permitting authority,
- Requiring permit conditions that require monitoring of loadings and notifying the permit authority of any loading increases,
- Requiring the discharger to conduct an antidegradation demonstration whenever seeking to lower water quality in a Tier 2 water.
- Antidegradation decisions by the permitting authority would be subject to public participation requirements, and
- Prohibiting "*de minimis*" provisions under Tier 2 for BCCs.

4.1.3 The EPA's Authority to Review Antidegradation Policies and AIMs

As described in section 4.1.2, the federal requirements for antidegradation at 40 CFR 131.12 specifically implement the CWA's objective at 101(a) to "…maintain the chemical, physical and biological integrity of the Nation's waters". Congress affirmed this principle by later adding the concept of antidegradation to CWA Sections 303(d)(4)(B) and 118(c)(2). Thus, antidegradation, along with designated uses and criteria, make up the core components of the WQS program.

[23] The regulation at 40 CFR 132.2 defines a BCC as a pollutant with a bioaccumulation factor of 1000 or higher according to methodologies specified in the rule, including but not limited to a list of 22 known BCCs in Table 6A of the regulation.

40 CFR 131.5(a)(3) specifies that the EPA's review and decision to approve or disapprove WQS involves a determination of "[w]hether the State has adopted an antidegradation policy that is consistent with §131.12, and whether any State adopted antidegradation implementation methods are consistent with §131.12." In addition, while not requiring that AIMs be adopted as legally binding provisions, 40 CFR 131.12(b) makes clear that any such developed AIMs shall be "...at a minimum, consistent with the State's policy and with paragraph (a) of this section." Therefore, when a state or authorized Tribe adopts or revises its antidegradation policy and when a state or authorized Tribe adopts AIMs as legally binding provisions, the EPA has the authority[24] and the obligation to review and approve or disapprove the policy or adopted AIMs as a new or revised WQS under CWA Section 303(c). The EPA can approve a policy or adopted AIMs if they are consistent with the requirements of the CWA and the federal regulation. If the EPA disapproves the state's or authorized Tribe's policy or adopted AIMs because it is inconsistent with any of the requirements at 40 CFR 131.12, the state or authorized Tribe has an opportunity to revise its antidegradation policy or adopted AIMs to be consistent with the CWA and the federal regulation.[25] However, if the state or authorized Tribe does not make appropriate revisions then, pursuant to CWA Section 303(c)(4)(A) and 40 CFR 131.22(a), the EPA is required by CWA Section 303(c)(4)(A) to propose and promulgate an antidegradation policy or adopted AIMs for the state or authorized Tribe.

If a state or authorized Tribe develops AIMs in a non-legally binding form, the EPA does not approve or disapprove those AIMs under its CWA section 303(c) authority. However, the EPA will work closely with the state or authorized Tribe to ensure its AIMs are consistent with its corresponding antidegradation policy and 40 CFR 131.12(a), as required by 40 CFR 131.12(b).[26] The EPA's evaluation of consistency includes ensuring that the AIMs do not undermine the antidegradation policy.

[24] 40 CFR 131.5(a)(3) and 40 CFR 131.6(d).

[25] See Chapter 6: *Procedures for Review and Revision of Water Quality Standards* of this Handbook for more information on WQS review and submittal processes. https://www.epa.gov/wqs-tech/water-quality-standards-handbook

[26] *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51033-51034 (August 21, 2015).

When implementing antidegradation policies and AIMs through mechanisms such as NPDES permitting, such implementation must be consistent with the applicable (i.e., EPA approved) WQS (NPDES: CWA Section 301(b)(1)(C); 40 CFR 122.44(d); 404: 40 CFR 230.10(b)(1)). In the situation where only the state's or authorized Tribe's antidegradation policy is legally binding, its antidegradation policy must drive any CWA implementation decisions. The EPA has the discretionary authority to object to state or authorized Tribal NPDES permits[27] when the effluent limits of a permit do not meet the requirements of 40 CFR 122.44(d). 40 CFR 122.44(d)(1)(vii)(A) specifies the need for WQBELs to derive from and comply with all applicable WQS, which include antidegradation policies. Therefore, if permits are written using antidegradation implementation methods that are inconsistent with the applicable antidegradation policy, and thus do not derive from and comply with the applicable WQS, the EPA may object to the permit.

The EPA encourages states and authorized Tribes to work collaboratively with the EPA early in the antidegradation policy and AIMs development process. This collaboration can be most effective if states and authorized Tribes also provide the EPA with early versions of potential revisions to their antidegradation policy or AIMs for input prior to the state's or authorized Tribe's adoption or finalization of the antidegradation policy or AIMs. Developing antidegradation policies and AIMs collaboratively with the EPA allows states and authorized Tribes to accomplish their antidegradation goals while ensuring that the new or revised antidegradation policies and state or Tribal adopted AIMs are consistent with the EPA regulation and approvable by the EPA.[28]

4.1.4 Applicability of Antidegradation Policies and AIMs

WQS, including antidegradation policies and state or Tribal adopted AIMs, serve two purposes. First, they establish the desired condition for a specific waterbody, and second, they serve as the legal basis to protect water quality for all purposes under the CWA. For example, WQS are used to derive water quality-based effluent limits (WQBELs) in NPDES

[27] As of October 17, 2023, no Tribes have been authorized to administer the NPDES program.

[28] See Chapter 6: *Procedures for Review and Revision of Water Quality Standards* of this Handbook for more information on WQS review and submittal processes.

permits,[29] to assess whether waters are impaired, and to develop Total Maximum Daily Loads (TMDLs) to restore impaired waters.[30] These CWA based programs are aimed at assessing and achieving the applicable WQS in the receiving water.

States' and authorized Tribes' WQS, including antidegradation policies and state or authorized Tribal adopted AIMs, apply to waterbodies and not to specific sources of pollution. However, the CWA only authorizes the EPA, authorized states, and authorized Tribes to regulate *point sources* of pollution in ways that are binding under federal law (for example, through NPDES permits). Congress leaves the decision of whether and how to regulate *nonpoint sources* to the states and Tribes under state or Tribal law, respectively.[31] Nonpoint source pollution is often a significant contributor to water quality degradation[32] and, in many cases, the driving reason why waters do not achieve their WQS. To address this issue, in addition to implementing their antidegradation policies and AIMs through point source control programs, the EPA recommends that states and authorized Tribes implement their antidegradation policies and AIMs through nonpoint source control programs as well, such as federal or state incentive-based programs (e.g., through projects or activities funded with CWA Section 319 grants), state or local regulatory requirements, or through voluntary approaches.

> Point source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff. (See 40 CFR 122.3). (40 CFR 122.2).
>
> Nonpoint source means any source of water pollution that does not meet the legal definition of "point source" in Section 502(14) of the CWA.

The implementation of antidegradation policies and AIMs through state or federally issued permits and licenses and through state and authorized Tribal nonpoint source control programs will further the efforts to achieve the CWA goal to maintain the water quality of the Nation's waters.

Where states and authorized Tribes regulate activities that affect the hydrology of the water, such as water withdrawals, flow, diversions, etc., then a state or authorized Tribe

[29] CWA Section 402.
[30] CWA Sections 305(b) and 303(d).
[31] See *American Wildlands v. Browner* (2001) where the Tenth Circuit United States Court of Appeals held that the EPA's approval of Montana's Tier II antidegradation policy, which exempted certain nonpoint source discharges from antidegradation review, was not arbitrary because "the Act nowhere gives EPA authority to regulate nonpoint source discharges." (260 F.3d 1192 (10th Cir. 2001)).
[32] Based on the EPA Nonpoint Source (NPS) Program's analysis of data from the EPA Ask WATERS Expert Query (conducted in 2016), of all waterbodies that have been assessed and a possible source of impairment identified, 85% of rivers/streams and 80% of lakes/reservoirs are polluted by nonpoint sources. https://www.epa.gov/sites/production/files/2016-10/documents/nps_program_highlights_report-508.pdf.

may conduct an antidegradation review before authorizing an activity that could result in a lowering of water quality.

For additional information about antidegradation application and implementation, see section 4.7 of this chapter.

4.1.5 Antidegradation in CWA Implementation Programs

As described in greater detail in section 4.8, antidegradation protections must be considered and incorporated into authorizations for CWA regulated activities to the same extent as other WQS requirements. In addition, states and authorized Tribes have the discretion to implement antidegradation requirements for state or Tribal voluntary control programs.

Under CWA Section 402, NPDES permits are issued to regulate point source discharges into waters of the United States. When calculating WQBELs, which are derived from applicable WQS, permit writers must ensure waters receive their appropriate level of antidegradation protection (40 CFR 122.44(d)(vii)(A)). Consistent with the state's or authorized Tribe's antidegradation policy and applicable AIMs, permit writers may need to adjust WQBELs to ensure appropriate levels of antidegradation protection, and states and authorized Tribes must conduct Tier 2 reviews to allow a lowering of water quality in a high quality water. For more information on CWA Section 402 Permits, see section 4.8.1 of this chapter.

ANTIDEGRADATION PROTECTION MUST BE CONSIDERED IN THE FOLLOWING CWA REGULATORY PROGRAMS:

- CWA Section 303(d) and 305(b) (assessments, listings, and TMDLs)
- CWA Section 401 (state certifications)
- CWA Section 402 (NPDES permits)
- CWA Section 404 (dredge and fill discharge permits)

Under CWA Section 404, dredged and fill permits regulate the discharge of dredged or fill material into waters of the United States. These permits are issued by the United States Army Corps of Engineers (Corps), with the exception of those states or Tribes who have assumed administration of CWA Section 404. Activities regulated by this program can include discharges of fill for development, water resource projects (such as dams, water intakes, and levees), infrastructure development (such as highways and airports), and mining projects. States and authorized Tribes may want to coordinate with the Corps to ensure that antidegradation protections are appropriately included

in Corps permits. Existing uses (Tier 1) can be protected by ensuring no "significant degradation," as defined by the CWA Section 404(b)(1) Guidelines, results from the dredge and fill activity. Along with Tier 1 protection, states and authorized Tribes must provide the same level of Tier 2 and Tier 3 protection for jurisdictional wetlands as is afforded other waters of the United States, consistent with 40 CFR 131.12. Therefore, where a state or authorized Tribe is the permitting authority, the state or Tribe should ensure that antidegradation protections are approrpriately included in permits they issue. See section 4.8.2 of this chapter for more information about CWA Section 404 permits.

Antidegradation protections also need to be considered when a state or authorized Tribe (or the EPA where a Tribe does not have authority) acts on a request for CWA Section 401 certification. An applicant for a federal license or permit to conduct an activity that may result in a discharge to waters of the United States must request certification from the state or authorized Tribe where the discharge originates. A grant of certification indicates compliance with "water quality requirements." Water quality requirements include, but are not limited to, EPA approved WQS. Therefore, before granting a CWA Section 401 certification, part of what states or authorized Tribes (or the EPA) must ensure is that the federal permit or license is consistent with its antidegradation policy and adopted AIMs. States or authorized Tribes (or the EPA) where the discharge originates can either grant, waive, or deny CWA Section 401 certification. Examples of federal licenses and permits subject to CWA Section 401 certification include the following:

- CWA Section 402 NPDES permits that are issued by the EPA.
- CWA Section 404 permits for discharge of dredged or fill material that are issued by the Corps.
- Federal Energy Regulatory Commission (FERC) hydropower licenses.
- Rivers and Harbors Act Section 9 and Section 10 permits for activities that have a potential discharge in navigable waters (issued by the Corps).

For more information about CWA Section 401 certifications see section 4.8.3 of this chapter.

CWA Sections 303(d) and 305(b) programs also need to consider antidegradation. Under CWA Section 303(d) and the EPA's supporting regulation at 40 CFR 130.7, states and Tribes authorized to administer the CWA Section 303(d) program are required to develop a list of threatened and impaired waters every two years. CWA Section 305(b) and the EPA's supporting regulation at 40 CFR 130.8 also require states and authorized Tribes to prepare a report every two years on the water quality of all navigable waters. The 303(d) list identifies waters that are not meeting applicable WQS, which include antidegradation. For more information on CWA Sections 303(d) and 305(b) programs, see section 4.8.4 of this chapter.

Antidegradation also needs to be considered when adopting or revising designated uses and criteria. 40 CFR 131.10(b) states, "In designating uses of a waterbody and

the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters." For example, consideration of Tier 1 protection is critical when the existing use of the downstream waterbody is more protective than the designated use currently assigned to that downstream waterbody. In such cases, a more stringent criterion may be needed to protect the existing use in the downstream waterbody. States and authorized Tribes should also consider downstream antidegradation requirements, for both waters within their state or Tribal lands and within downstream state or Tribal lands, when developing their own antidegradation provisions. For high quality waters (Tier 2) and ONRWs (Tier 3), upstream and downstream states and authorized Tribes should coordinate to ensure that these waters are appropriately protected.[33]

4.1.6 Tribal Reserved Rights

The EPA promulgated "Water Quality Standards Regulatory Revisions to Protect Tribal Reserved Rights" on May 2, 2024.[34] The contents of this WQS Handbook chapter as it applies to 40 CFR 131.9 are appropriate for consideration during any state or authorized Tribe WQS adoption, revision, and implementation, as well as the implementation of federally promulgated WQS. For more information on protecting Tribal reserved rights, see the *Revising the Federal Water Quality Standards Regulations to Protect Tribal Reserved Rights* website.[35]

4.1.7 Federal Promulgations for Tribes

As a matter of policy, the EPA prefers that states and authorized Tribes adopt their own WQS. However, under Section 303(c)(4) of the CWA and 40 CFR 131.22, the EPA must promptly propose federal WQS if either of the following conditions occur:

- The EPA determines that a new or revised WQS submitted by a state or authorized Tribe is not consistent with CWA requirements and 40 CFR Part 131, and the state or authorized Tribe does not adopt the changes the EPA specifies within 90 days from that disapproval.
- In any case where the EPA Administrator determines that a new or revised WQS is necessary to meet CWA requirements and 40 CFR Part 131.

Should the EPA propose federal WQS, it must promulgate those WQS within 90 days of such a proposal unless the state or authorized Tribe adopts and EPA approves the WQS

[33] EPA. 2014. *Protection of Downstream Waters in Water Quality Standards: Frequently Asked Questions*. EPA, Office of Water. Washington, DC 20460. EPA-820-F-14-001. June 2014. https://www.epa.gov/sites/default/files/2018-10/documents/protection-downstream-wqs-faqs.pdf.

[34] See 89 FR 35717, https://www.govinfo.gov/content/pkg/FR-2024-05-02/pdf/2024-09427.pdf

[35] https://www.epa.gov/wqs-tech/revising-federal-water-quality-standards-regulations-protect-Tribal-reserved-rights

prior to the deadline. The EPA's promulgation of federal WQS for any specific Tribe,[36] as well as any other WQS promulgated for Indian reservation waters can be found at 40 CFR Part 131, Subpart D (See *Chapter 6: Procedures for Review and Revision of Water Quality Standards* of this Handbook for more information on federal promulgations). The contents of this WQS Handbook chapter are generally appropriate for any adoption, revision, and implementation of state, Tribal, or federally promulgated WQS. For more information specifically on the federal Baseline Water Quality Standards Rule that promulgated federal WQS for Indian reservation waters that do not have Tribally-adopted, EPA-approved WQS under the CWA, see the *Promulgation of Tribal Baseline Water Quality Standards Under the Clean Water Act* website.[37]

[36] For example, the EPA's promulgation of federal WQS for Colville Confederated Tribes Indian Reservation is at 40 CFR 131.35.

[37] https://www.epa.gov/wqs-tech/promulgation-tribal-baseline-water-quality-standards-under-clean-water-act

4.2 PROTECTION OF EXISTING USES - 40 CFR 131.12(a)(1)

The federal regulation at 40 CFR 131.12(a)(1), or "Tier 1" of antidegradation, requires the maintenance and protection of existing instream water uses and the level of water quality necessary to protect existing uses.[38] As defined at 40 CFR 131.3(e), "Existing uses are those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in the water quality standards."[39] A use is an existing use if it meets the definition at 40 CFR 131.3(e), whether or not it is currently being attained (i.e., the use has been attained at some point on or after November 28, 1975 but may not be currently attained). To implement the "maintain" component of CWA Section 101(a), existing uses define the floor of water quality in all waters of the United States beyond which water quality cannot be lowered. Tier 1 protection provides the mechanism to ensure existing uses are maintained by applying this minimum level of protection to all waters of the United States. Tier 2 protection reiterates the need to provide Tier 1 protection by stating that a state or authorized Tribe "shall assure water quality adequate to protect existing uses fully" when allowing a lowering of water quality (40 CFR 131.12(a)(2)).

[38] *Water Quality Standards Regulation*, 48 Fed. Reg. 51403 (November 8, 1983).
[39] For additional information on existing uses, see section 2.3.3.1 of Draft Chapter 2 of this Handbook.

Tier 1 protection applies to the waterbody as a whole. In order to assure that this protection is maintained when a state or authorized Tribe allows an activity that may lower water quality, a state or authorized Tribe needs to first identify the existing use and level of water quality protective of the existing use. To support identification and protection of existing uses, the EPA recommends that states and authorized Tribes adopt a definition of the term 'existing uses' that is consistent with the definition at 40 CFR 131.3(e). Then, a state or authorized Tribe needs to review a proposed activity (e.g., new or increased NPDES discharge) to determine whether the activity will degrade water quality to the point where the existing uses would no longer be protected. The state or authorized Tribe cannot allow a proposed activity, as requested, if it will foreseeably lower water quality to the extent that it is no longer sufficient to protect and maintain the existing uses in that waterbody. Instead, the state or authorized Tribe has three choices. First, it could deny an authorization of the proposed activity. Second, it could require that the entity lowering the water quality implement measures to offset its pollutant contribution or otherwise protect and maintain existing uses and the water quality of the waterbody prior to obtaining the authorization. If the state or authorized Tribe chooses to require a pollution offset, that offset would need to occur in the waterbody where the degradation would occur. Third, the authorizing authority could issue the authorization for the proposed activity with conditions or limits stringent enough to protect the existing uses.

States and authorized Tribes that ensure any lowering of water quality will continue to protect a waterbody's applicable designated uses can be reasonably assured that the existing uses are also protected. However, at times, a state or authorized Tribe may not have yet revised its designated uses to reflect an existing use. Such existing uses must still be maintained and protected. If, through the antidegradation review process, the state or authorized Tribe determines that the currently adopted designated uses do not reflect an existing use that is presently being attained, 40 CFR 131.10(i) requires the state or authorized Tribe to revise its WQS to reflect the uses actually being attained and adopt criteria sufficient to protect such uses.[40] In addition, if the antidegradation review process identifies a use specified in CWA Section 101(a)(2) as an existing use that is not protected by the currently applicable designated uses nor is it presently being attained (i.e., 40 CFR 131.10(i) is not applicable), but the triennial review finds that the existing use is feasible to attain, 40 CFR 131.20(a) requires the state or authorized Tribe to "revise its standards accordingly." The EPA encourages communication across state and authorized Tribal water programs to ensure appropriate designated uses are in place, particularly if the program performing the antidegradation review is not the same as the program that developed the water quality standards (e.g., the permitting program vs. the water quality standards program)

For additional information about antidegradation implementation and application, see section 4.8 of this chapter.

[40] See Draft Chapter 2, section 2.5.1 of this Handbook.

4.3 PROTECTION OF HIGH QUALITY WATERS - 40 CFR 131.12(a)(2)

The federal regulation at 40 CFR 131.12(a)(2), or "Tier 2" of antidegradation, is intended to protect the waters in which water quality levels are better than necessary to support the protection and propagation of fish, shellfish and wildlife, and recreation in and on the waterbody. This regulation specifies that Tier 2 protection applies when water quality exceeds the levels needed to protect the CWA Section 101(a)(2) uses. However, states and authorized Tribes have the discretion to expand Tier 2 protection to water quality that exceeds the levels necessary to protect non-101(a)(2) uses, as well as 101(a)(2) uses. "Exceeds" in this context refers to water quality being better than necessary to support CWA Section 101(a)(2) uses or non-101(a)(2) uses.

Generally speaking, water quality levels that are better than necessary to support the protection and propagation of fish, shellfish and wildlife, and recreation in and on the waterbody (i.e., high water quality) must be maintained and protected unless the state or authorized Tribe finds that a lowering[41] of high water quality is necessary to accommodate important economic or social development in the area in which the waters are located. The federal regulation requires a systematic, public decision-making process for determining whether or not to allow some degradation of water quality in high quality waters (up to, but not beyond what protects the CWA 101(a)(2) uses).[42]

The Tier 2 decision-making framework is intended to ensure high water quality is protected by determining if there are alternatives to proposed activities that would result in reduced degradation. However, the outcome of a Tier 2 review may be to authorize degradation of high quality waters, e.g., where an important activity, from an economic and social development standpoint, would result in water quality degradation and there is no practicable alternatives that could be implemented to avoid or reduce such degradation. In such cases, after a Tier 2 review has been completed, high water quality may only be lowered down to the level that fully protects all the waterbody's applicable designated and existing uses[43] and cannot lead to a use impairment.[44]

[41] Lowering means an increase in pollution, resulting from an activity that would use some of the assimilative capacity in a high quality water. In this regard, the quality of water is lowered closer to the level of pollution that is protective of the CWA Section 101(a)(2) uses.

[42] *Water Quality Standards Regulation*, 63 Fed. Reg. 36762 (July 7, 1998).

[43] The EPA's *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Antidegradation.* Docket # EPA-HQ-OW-2010-0606. August 2015. pg. 3-177 - 3-180, https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344.

[44] *Water Quality Standards Regulation*, 48 Fed. Reg. 51403 (November 8, 1983).

4.3.1 Identification of High Quality Waters

The EPA refers to waters where the quality of water is better than necessary to support the CWA Section 101(a)(2) uses as high quality waters.[45] High quality waters have assimilative capacity, that is, they can receive additional pollution[46] and still meet the quality necessary to protect the CWA Section 101(a)(2) uses. In the context of antidegradation, assimilative capacity is the difference in water quality between what level(s) is needed to protect the CWA Section 101(a)(2) use(s) and the actual, better water quality that is observed in the waterbody at the time the activity to lower high water quality is proposed (Figure 4-1).

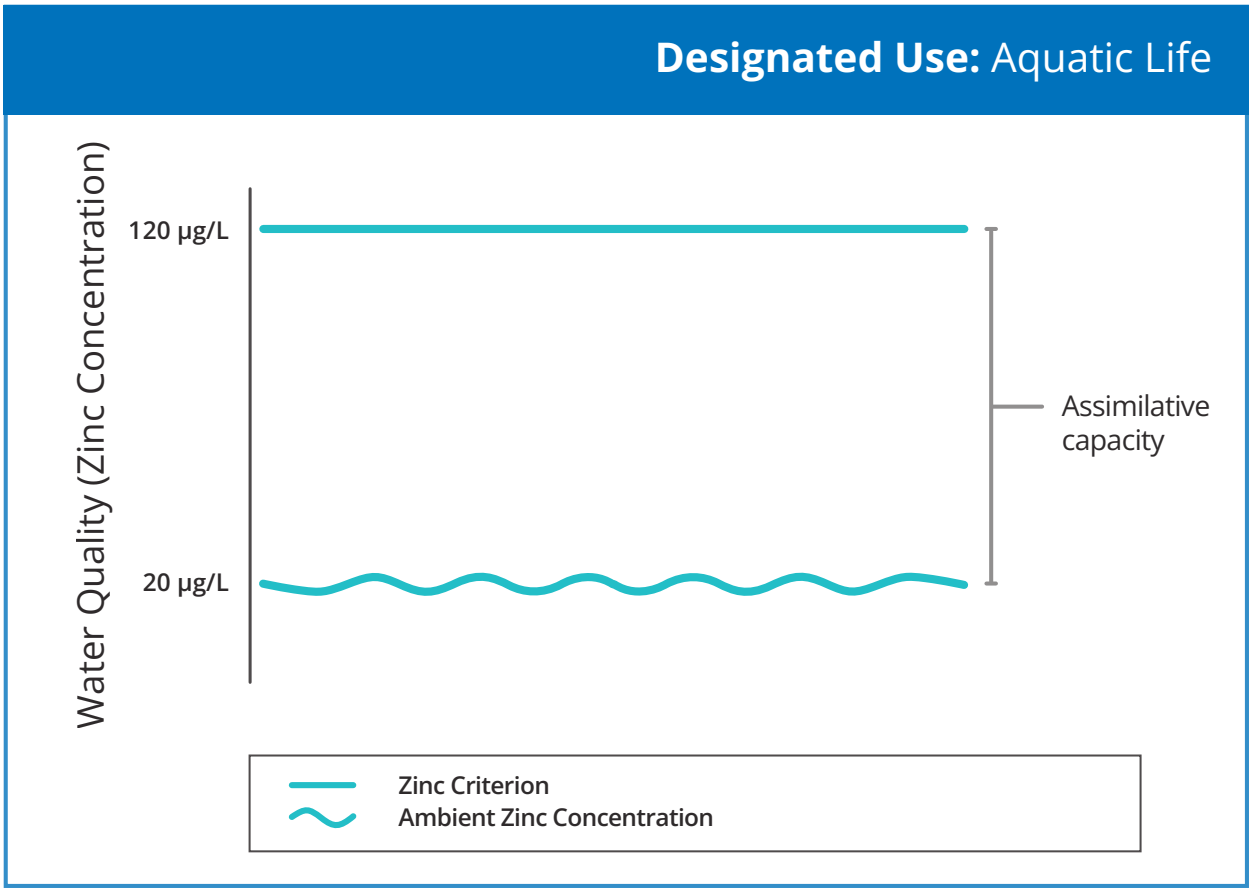

Figure 4-1. Example of Water Quality that is Better than Necessary to Support a CWA Section 101(a)(2) Use. The current ambient concentration of zinc is lower than the criterion for zinc associated with the aquatic life use, indicating that the water quality is better than necessary to support a CWA Section 101(a)(2) use. Therefore, this water is high quality and has available assimilative capacity with regards to zinc.

[45] Designated uses may reflect a future goal for a waterbody, so the EPA recommends that states and authorized Tribes consider designating uses of a waterbody independently from assigning antidegradation tiers to a waterbody.

[46] Pollution is defined under the CWA as "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water" (CWA Section 502(19)).

To identify which waters are high quality waters, states and authorized Tribes may use a parameter-by-parameter approach, a waterbody-by-waterbody approach, or a combination of the two approaches. The EPA recognizes that both approaches can be used in a manner consistent with the CWA and the federal antidegradation regulation (40 CFR 131.12(a)(2)(i)). Once a waterbody is determined to be high quality using one of these approaches, the Tier 2 review process proceeds in the same manner, determining which parameters have assimilative capacity and determining whether the use of that assimilative capacity (lowering of high water quality) is necessary to accommodate important economic or social development in the area in which the waters are located (Figure 4-2).

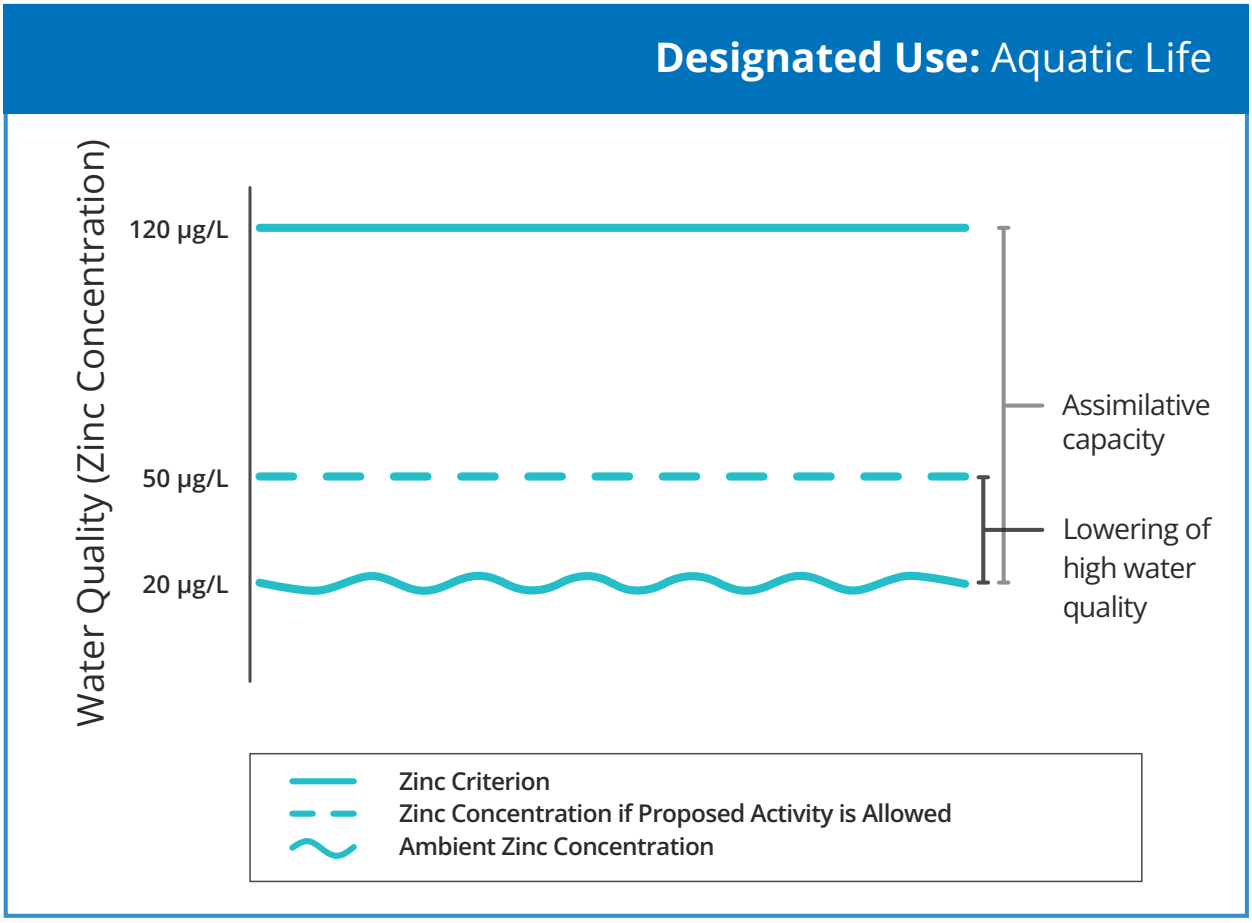

Figure 4-2. Example of Lowering of High Water Quality. An activity is being proposed that utilizes some of the assimilative capacity of zinc in this waterbody. If allowed through a Tier 2 review, this use of assimilative capacity would be a lowering of high water quality.

4.3.1.1 Determining Ambient Water Quality

The first step in determining whether a waterbody is high quality is establishing what the current ambient water quality is in the waterbody. States and authorized Tribes can do this by either evaluating existing data or collecting new data to establish current water quality conditions. The ambient water quality should be determined each time an authorization for a lowering of water quality is being considered.

This information can then be used for two purposes: (1) determining how much assimilative capacity[47] is in a waterbody for each parameter; and (2) establishing a baseline for tracking the use of that assimilative capacity cumulatively over time.

4.3.1.2 Parameter-by-Parameter Approach

States and authorized Tribes using a parameter-by-parameter approach identify which waters receive Tier 2 protection for a specific chemical, physical, or biological parameter(s) at the time an entity proposes an activity that could lower the water quality of that parameter(s). When an activity is proposed, the permitting authority identifies which parameters are included in the discharge or impacted by the activity. It then determines whether the ambient water quality for any of those parameters "exceeds levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water" (40 CFR 131.12(a)(2)). In practice, to implement this provision, the permitting authority would determine for which parameters the water quality is better than the applicable narrative or numeric criteria that protect the CWA Section 101(a)(2) uses. Each parameter is considered independently (Figure 4-3). If the permitting authority determines the ambient concentration of a parameter(s) is at a level better than the applicable numeric or narrative criterion that protects the associated CWA Section 101(a)(2) use, the state or authorized Tribe would conduct a Tier 2 review for that parameter(s) to determine whether the proposed lowering of high water quality is necessary to accommodate important social and economic development in the area in which the waters are located. The permitting authority, whether a state, authorized Tribe, or the EPA, can follow a state's or authorized Tribe's AIMs to determine whether a waterbody is high quality for a particular parameter. But, if a lowering of that high water quality is being considered, *the state or authorized Tribe* has to make the decision about whether the lowering is necessary to accommodate important social and economic development in the area in which the waters are located. The parameter-by-parameter approach provides Tier 2 protection to any parameter with available assimilative capacity, regardless of whether assimilative capacity exists for other parameters within the same waterbody/waterbody segment.

When using the parameter-by-parameter approach, the identification of high quality water occurs at the time an entity proposes an activity that could lower the water quality. Therefore, the level of protection applied to that waterbody will be subject to the public involvement requirements associated with that activity. This provides the public an opportunity to provide input on the provision of Tier 2 protection through the public involvement requirements of these individual activities, such as the issuance of NPDES permits.[48]

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[47] When determining how much assimilative capacity is available in a waterbody to allocate to an individual activity, a state or authorized Tribe [or permitting authority] should identify whether any permitted facility on the waterbody is not yet discharging at its fully authorized level. If so, then the permitting authority would use the maximum authorization levels for all discharging entities on the waterbody to determine how much assimilative capacity is still available in the waterbody for a new or expanded activity.

[48] *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51030 (August 21, 2015).

Due to evolving science, there may be times at which a state's or authorized Tribe's numeric or narrative criteria do not reflect the latest science on the water quality levels that protect the CWA 101(a)(2) uses. When this is the case, the EPA strongly recommends that a state or authorized Tribe update its criteria as soon as possible, but no later than its next triennial review (see *Chapter 6: Procedures for Review and Revision of Water Quality Standards* of this Handbook for information about the requirements of a triennial review). This will assure that the criteria appropriately protect the CWA 101(a)(2) uses when being used for CWA implementation purposes, including for determining assimilative capacity.

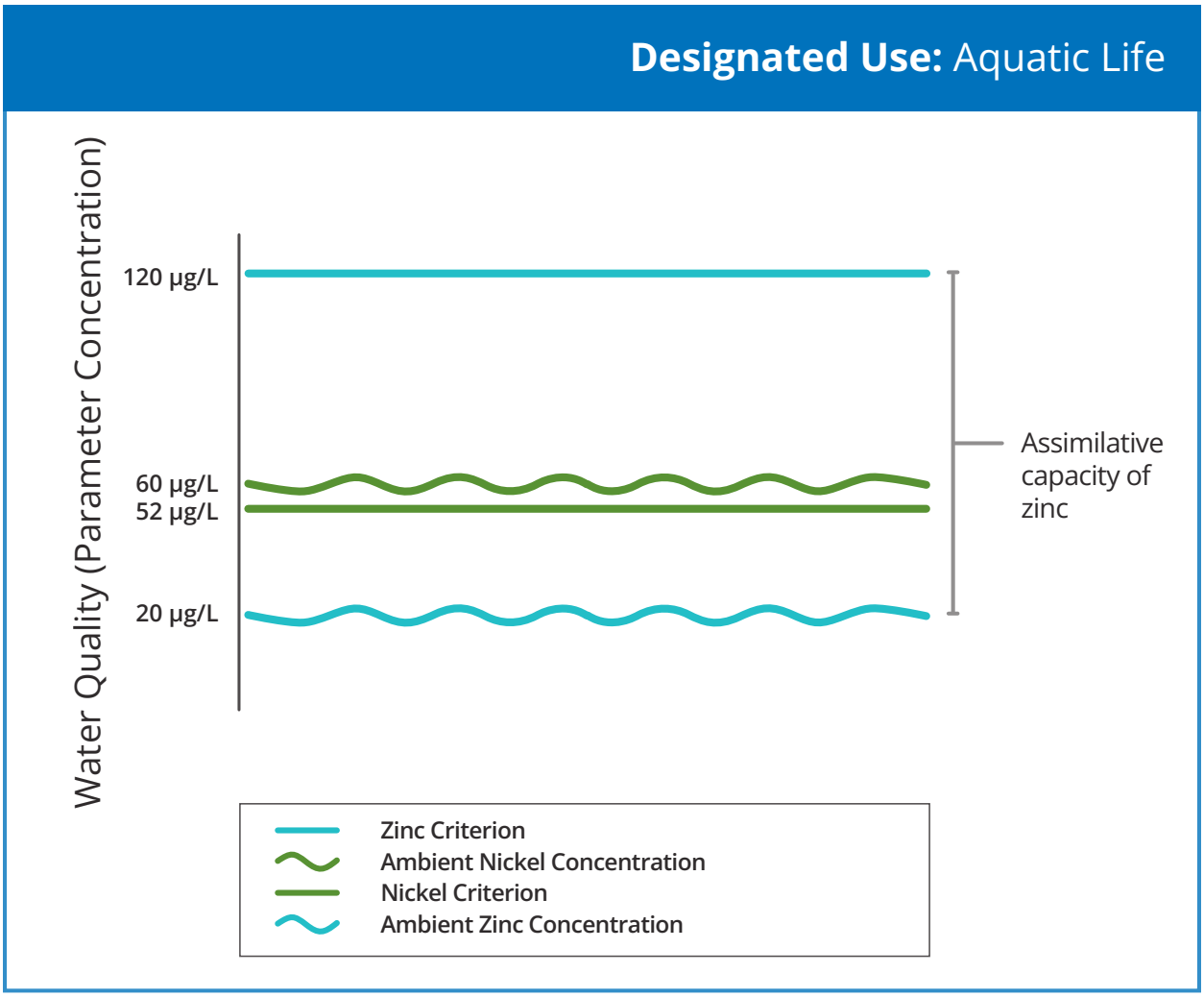


Figure 4-3. Example of the Parameter-by-Parameter Approach. In this example, the ambient concentration of zinc supports the CWA Section 101(a)(2) uses and assimilative capacity is available for zinc. However, the ambient concentration of nickel does not support the CWA Section 101(a)(2) uses and thus no assimilative capacity is available for nickel. In this instance, the state or authorized Tribe would provide Tier 2 protection for zinc, but not for nickel.

4.3.1.3 Waterbody-by-Waterbody Approach

A waterbody-by-waterbody approach is where a state or authorized Tribe uses a variety of factors to judge a waterbody's overall quality and identify which waterbodies have quality that is better than necessary to support the CWA Section 101(a)(2) uses. A waterbody-by-waterbody approach allows states and authorized Tribes to consider chemical, physical, biological, and other information (e.g., unique ecological or scenic attributes) to determine which waters are high quality overall.[49] When deciding which waters are high quality, 40 CFR 131.12(a)(2)(i) specifies that states and authorized Tribes must provide an opportunity for public involvement on the factors considered in deciding whether or not to provide Tier 2 protection to a particular waterbody. Such factors should be rooted in the goals of the CWA. A state or authorized Tribe may consider a range of factors, including but not limited to the following:

- Ambient water quality for all pollutants and parameters,
- Factors that affect existing aquatic life uses including aquatic assemblages, habitat, hydrology, geomorphic processes, and landscape condition,
- Existing recreational uses and recreational significance,
- Overall value and significance from an ecological, public health, and public-use perspective, and
- The value of retaining ecosystem resilience against future stressors.

It is important that states and authorized Tribes consider all relevant available data when conducting an overall holistic assessment. Numerous tools, such as biological, habitat, hydrologic, geomorphic, and landscape assessments or the environmental impact statement rating system, could be useful to states and authorized Tribes in making and supporting decisions on whether to provide Tier 2 protection. In instances where states and authorized Tribes lack data and information on the water quality to make individual waterbody conclusions, the EPA recommends that they provide all or a subset of their waters with Tier 2 protection by default. On the other hand, if a state or authorized Tribe is able to conduct a holistic evaluation with public involvement, it can use that evaluation to decide whether or not the water is a high quality water and warrants Tier 2 protection.[50] Such determinations may be made prior to considering an authorization of a lowering of water quality (e.g., the state or authorized Tribe may identify a list of waterbodies classified as "high quality" or "Tier 2" for the purposes of antidegradation) or at the time of considering an authorization of a lowering of water quality.

For the waterbody-by-waterbody approach, if after conducting an overall holistic evaluation it is demonstrated that the water quality is better than necessary to support all the CWA Section 101(a)(2) uses, the state or authorized Tribe must provide that waterbody with Tier 2 protection. If not, states and authorized Tribes have discretion

[49] *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51030 (August 21, 2015).

[50] Where a state or authorized Tribe has done a holistic evaluation with public involvement and determined that the water is not high quality nor does it warrant Tier 3 protection (See section 4.4 for further discussion on Tier 3), it may identify the waterbody as a waterbody receiving Tier 1 protection only.

KEY POINT:

A waterbody cannot be excluded from Tier 2 protection solely because it does not support ALL CWA Section 101(a)(2) uses. It can still receive Tier 2 protection, even if it only supports one CWA Section 101(a)(2) use.

to choose whether to apply Tier 2 protection, provided the state or authorized Tribe does not exclude a waterbody from Tier 2 protection solely because water quality does not exceed levels necessary to support all the CWA Section 101(a)(2) uses of the Act (40 CFR 131.12(a)(2)(i)). A state or authorized Tribe could not exclude a water from Tier 2 protection solely because it was impaired for a single 101(a)(2) use; either all 101(a)(2) uses would need to be impaired or other factors from the holistic evaluation, such as habitat, diversity, or hydrology would also need to indicate that the waterbody was not high quality.[51] In other words, states and authorized Tribes could only decide to exclude a water from Tier 2 protection if a holistic evaluation of the waterbody was completed and it demonstrated that overall the waterbody was not high quality. If a waterbody can be excluded from Tier 2 protection without a holistic evaluation of the waterbody solely because one of the CWA Section 101(a)(2) uses is not being attained, assimilative capacity could potentially be lost in a large number of state and Tribal waters for parameters associated with non-impaired uses without any opportunity for public input. This approach would not be consistent with the objectives of the CWA to "restore and maintain the chemical, physical and biological integrity of the nation's waters" nor with the intent of the antidegradation regulation that implements this objective. Rather, a state or authorized Tribe would need to consider all the chemical, physical, and biological characteristics of that waterbody and decide whether overall that waterbody is high quality or not.

[51] The EPA's *Response to Comments, Water Quality Standards Revision, Chapter 3 Issue Category: Antidegradation*, Docket # EPA-HQ-OW-2010-0606. August 2015. pg. 3-154 - 3-176. https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344.

In addition, a state or authorized Tribe may still identify a water as high quality even if it went through the regulatory process to remove one of the CWA Section 101(a)(2) uses because that designated use is not attainable (e.g., a waterbody is designated as limited aquatic life use rather than aquatic life use). While that waterbody may not have the ability to attain water quality to fully support the designated use that was or will be removed, it may still have high water quality supporting a different CWA Section 101(a)(2) use that warrants Tier 2 protection.

If the state or authorized Tribe has determined that a water is a Tier 2 water, then whenever a lowering of water quality is proposed for that water, the state or authorized Tribe would conduct a Tier 2 review (see section 4.3.2). The Tier 2 review will evaluate all parameters affected by the proposed activity for which assimilative capacity exists in the waterbody (similar to the review done for the parameter-by-parameter approach) (Figure 4-4). If the receiving waterbody is not on the Tier 2 list because a holistic evaluation has demonstrated that as a whole it is not high quality, the state or authorized Tribe would not need to conduct a Tier 2 review, even if some parameters have assimilative capacity (Figure 4-5). This is different than the parameter-by-parameter approach, where a Tier 2 review must evaluate any parameter associated with a CWA Section 101(a)(2) use with assimilative capacity that may be impacted by the lowering of water quality. In both approaches, the state or authorized Tribe must still provide Tier 1 protection to the waterbody.

Public Engagement and Transparency

In order to meet the public involvement requirement at 40 CFR 131.12(a)(2)(i), states and authorized Tribes must involve the public in any decisions pertaining to waters that will receive Tier 2 protection, including the factors that will be used to decide which waters will receive Tier 2 protection. With regards to how to involve the public, the requirement at 40 CFR 131.12(a)(2)(i) uses the phrase "opportunity for public involvement" rather than "public participation," which is used in 40 CFR 131.20(b). The difference in terminology is purposeful to provide states and authorized Tribes flexibility in how they engage the public in this decision-making process.[52]

States and authorized Tribes may meet the public involvement requirement at 40 CFR 131.12(a)(2)(i) in a number of ways, such as a public hearing, public meeting, public workshop, webinar or posting the information on a public website with contact information so the public has the opportunity to provide input. To streamline this process, the state or authorized Tribe could solicit public input on which waters will receive Tier 2 protection along with descriptions of the factors they considered in making those decisions during a triennial review and/or when receiving public input on an AIMs revision. Obtaining public input during either of these processes has the advantage of only having to post information for public notice once for two different, but related, processes. Alternatively, if a state or authorized Tribe adopts a list of

[52] *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51031 (August 21, 2015).

Tier 2 waters into their WQS, then the public involvement requirement will be met by the public participation requirement associated with the adoption of WQS. As another example, a state or Tribe authorized to administer the CWA Section 402 program[53] could use the public notice process for an NPDES permit to engage the public on its decision on whether or not the waterbody will be afforded Tier 2 protection.[54] This would be done at the time the state or Tribe proposes a permit that would allow a lowering of water quality. The state or authorized Tribe could document the relevant information related to its decision to afford Tier 2 protection to the water in the public notice for the permit and specifically request comment on that decision and the factors considered in making that decision. States and authorized Tribes might find it useful for public engagement to provide water specific rationales for these decisions during the public involvement process or when responding to comments.

Therefore, the EPA recommends states and authorized Tribes document their overall assessment in support of their Tier 2 decisions. Doing so builds trust and shows transparency in decision making. Whichever approach is used, the EPA recommends that states and authorized Tribes involve the public as early as possible, so stakeholders have sufficient time to be engaged in the decision-making process.

[53] As of September 26, 2023, no Tribes are currently authorized to administer the CWA Section 402 program and the EPA is the permitting authority. To address the requirement for providing an opportunity for public involvement on decisions to provide Tier 2 protection, the Tribe may request that the EPA include the information related to this decision in the permit public notice.

[54] *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51031 (August 21, 2015).

The state or authorized Tribe could develop its Tier 2 waters list in one of the two following ways:

1. The state or authorized Tribe could develop a list prior to considering any authorizations for lowering high water quality by conducting holistic reviews of all its waters and creating a list that would be available for when an authorization for lowering is being considered, or
2. The state or authorized Tribe could evaluate waters as it considers authorizations for the lowering of water quality, and then add high quality waters to the list as those evaluations have been completed.

In either instance, the state or authorized Tribe would be required to provide an opportunity for public involvement in decisions about whether a water should receive Tier 2 protection, and the factors considered in making those decisions, per 40 CFR 131.12(a)(2)(i) as discussed above. After this list has been created, any changes in the decisions of which waters receive Tier 2 protection, and thus revisions to this list, would also require public involvement per 40 CFR 131.12(a)(2)(i).

It is critical for the public to know which waters have been provided Tier 2 protection. 40 CFR 131.12(a)(2) requires 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…." Implementing programs, such as the permitting authority, can only "maintain and protect" the water quality of a Tier 2 water if they know which waters the state or authorized Tribe has identified as high quality waters. In addition, it is critical for the public to have access to information on which waters the state or authorized Tribe has deemed high quality so that regulated entities are fully aware of their obligations and the basis for permit requirements. Such access will also ensure that the public has the necessary information to hold states and authorized Tribes accountable when implementing WQS. Therefore, to ensure that high quality waters "shall be maintained and protected" consistent with 40 CFR 131.12(a)(2), the EPA expects states and authorized Tribes to make their Tier 2 lists publicly available. A Tier 2 list could be made publicly available by adopting the list into rule, posting it on a public website, or by housing it in another location that is easily accessible to the public. Where a state or authorized Tribe chooses to adopt its Tier 2 waters list into rule, the EPA will review and approve or disapprove those decisions as new or revised WQS consistent with CWA Section 303(c). However, the EPA recognizes that making the final list broadly available may not be desired in certain unique instances. Where a state or authorized Tribe does not wish to make their final list of Tier 2 waters broadly available, it may specify in its policy or AIMs how interested parties can request information on which waters are Tier 2 and provide that information upon request. Making this information publicly available will ensure proper implementation and oversight of the antidegradation policy consistent with 40 CFR 131.12(a)(2).

Regardless of how a state or authorized Tribe makes the Tier 2 information available to the public, the EPA recommends periodically revisiting the list of Tier 2 waters to make sure that waters are appropriately classified and protected. One option may be to

revisit this list during a triennial review. If any waterbodies are added or removed from the list during this time, then the state or authorized Tribe can streamline the public involvement required by 40 CFR 131.12(a)(2)(i) by pairing it with the public participation process for the triennial review. As another option, states and authorized Tribes may choose to provide avenues for ongoing public involvement beyond the triennial review process by providing structured opportunities for the public to initiate antidegradation discussions. For example, a state or authorized Tribe could provide a petition process in which citizens can request Tier 2 protection for specific waters, and those citizens could provide data and information for a state's or authorized Tribe's consideration.

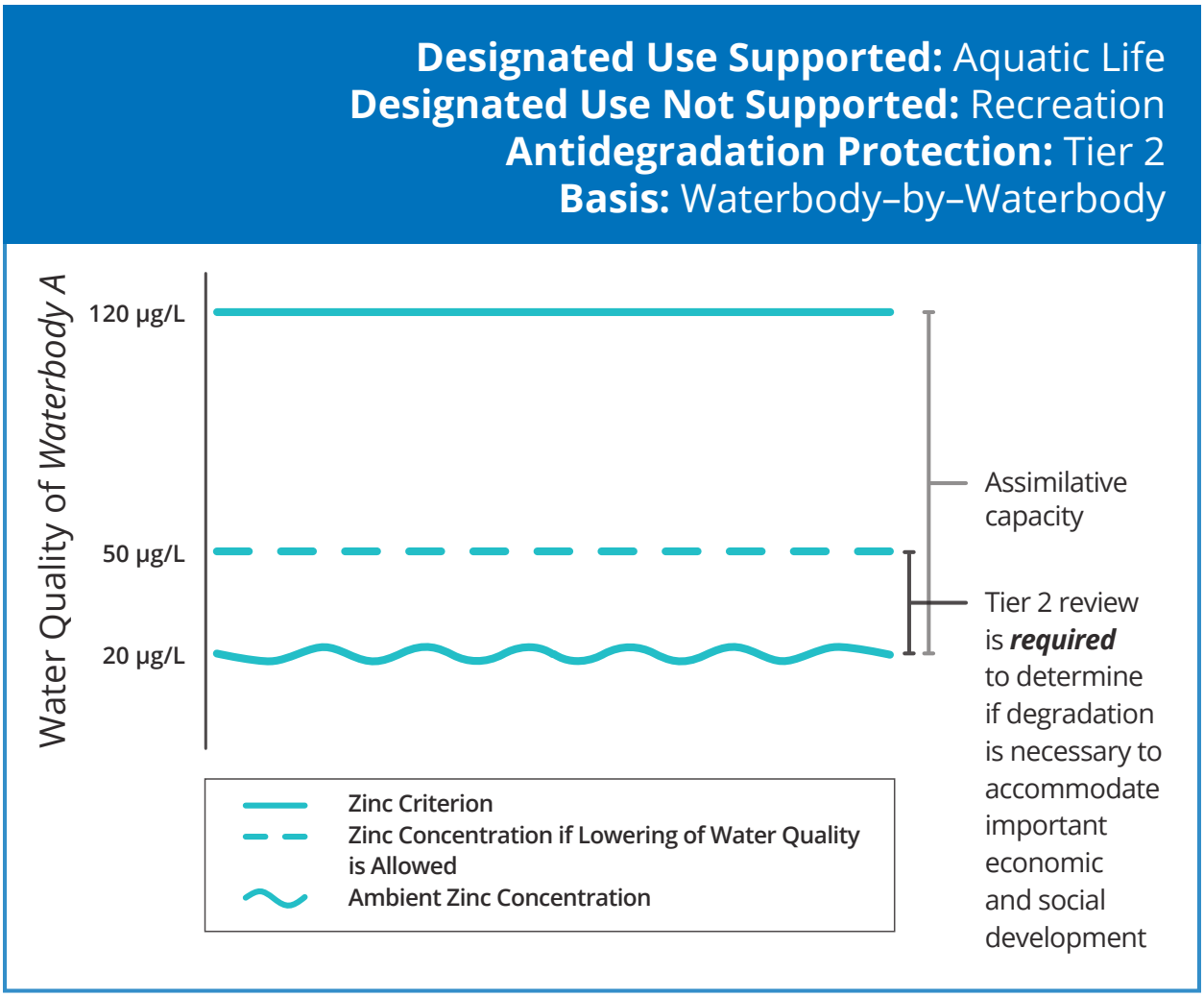


Figure 4-4. Example of a Water Receiving Antidegradation Tier 2 Protection Using the Waterbody-by-Waterbody Approach. Waterbody A supports a full aquatic life use, but does not attain a full recreation use. After completing a holistic assessment of the waterbody, the state or authorized Tribe has placed this water on the Tier 2 list with support from the public, as this waterbody is home to several fish species important to commercial and recreational fishing and is high quality with respect to aquatic life. An entity proposes an activity that would lower water quality for zinc, a parameter that currently has an instream concentration that is better than necessary to support the full aquatic life use. Since this water is on the Tier 2 list, a Tier 2 review must be conducted before the state or authorized Tribe can allow the lowering of high water quality.

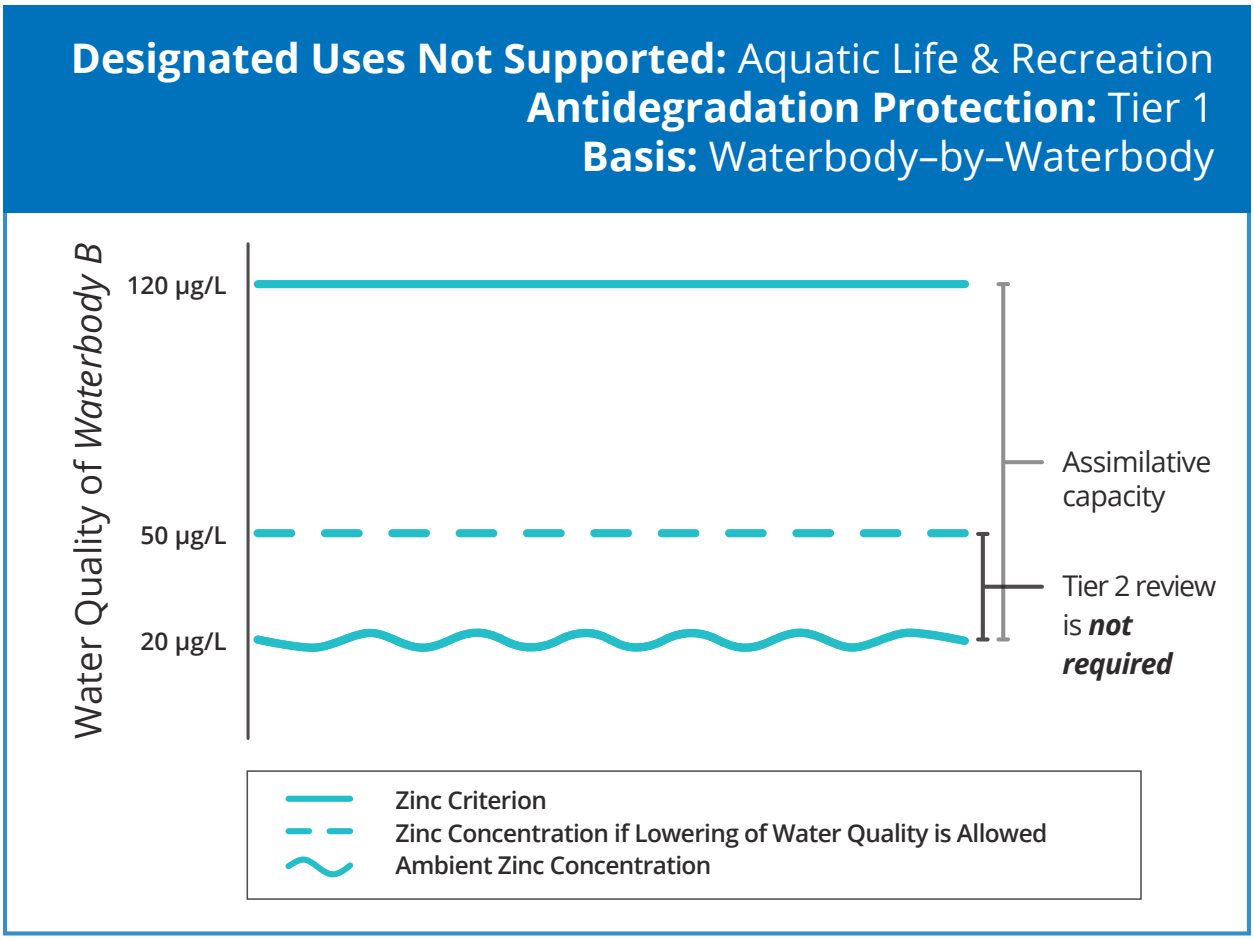


Figure 4-5. Example of a Water Not Receiving Antidegradation Tier 2 Protection Using the Waterbody-by-Waterbody Approach. The state or authorized Tribe has not listed waterbody B on the Tier 2 water list after completing a holistic assessment of the waterbody and finding that it is not high quality. This waterbody does not support its aquatic life and recreation uses. An entity proposes an activity that would discharge zinc. Since this state or authorized Tribe is using a waterbody–by–waterbody approach and waterbody B is not on the Tier 2 list, no Tier 2 review is required to allow this lowering of water quality even though there is assimilative capacity for zinc. The state or authorized Tribe allows the discharge of zinc and writes the permit to the current criterion, protecting both the designated and existing uses (Tier 1 protection applied).

4.3.1.4 Hybrid Approach

A handful of states and authorized Tribes use a hybrid approach for identifying waters that will receive Tier 2 protection. In these instances, states and authorized Tribes may specify that a certain type or class of water will automatically be afforded Tier 2 protection, while for all other waters, the state or authorized Tribe will assign Tier 2 protection on a parameter-by-parameter basis. The state or authorized Tribe will either maintain a list of waters assigned Tier 2 protection or will specify the types of waters that receive Tier 2 protection (e.g., streams that receive annual stockings of trout). Then during the process of determining whether a waterbody is high quality, the state or authorized Tribe will first ask if the water has been assigned Tier 2 protection. If not, they

will use a parameter-by-parameter approach to determine if they should provide Tier 2 protection to certain water quality parameters.

4.3.1.5 Considerations for Selecting an Approach

Both the parameter-by-parameter and waterbody-by-waterbody approaches have their advantages and disadvantages. When a state or authorized Tribe is deciding which approach is best for it, it should consider which approach will allow it to most effectively use its resources to provide protection for high water quality.

ADVANTAGES OF THE PARAMETER-BY-PARAMETER APPROACH

- Do not need to conduct a holistic assessment of a waterbody
- Do not need to have a separate opportunity for public input
- Decisions are based on ambient water quality data, which can be easier to explain and less susceptible to challenge
- Decisions could result in more waters receiving some degree of Tier 2 protection

ADVANTAGES OF THE WATERBODY-BY-WATERBODY APPROACH

- If resources are limited, can prioritize higher-value waters for assessments
- Builds support for Tier 2 decisions by engaging the public and regulated community during identification of high quality waters in advance of an antidegradation review
- List of high quality waters can be used by multiple water quality management programs to prioritize implementation projects.

Some states and authorized Tribes have found the parameter-by-parameter approach more streamlined to implement because the state or authorized Tribe does not need to conduct a thorough overall, holistic assessment of the waterbody nor provide a separate opportunity for public input. Decisions are driven strictly by ambient water quality data rather than judgments concerning a waterbody's overall value or quality. In addition, since the parameter-by-parameter decisions are based on ambient water quality data, some states and authorized Tribes consider those decisions easier to explain and thus may be less susceptible to challenge. The parameter-by-parameter approach may also result in more waters receiving some degree of Tier 2 protection because the state or authorized Tribe would provide Tier 2 protection for parameters with assimilative capacity even if those waters are not supporting any CWA Section 101(a)(2) uses overall.

A waterbody-by-waterbody approach allows states and authorized Tribes to identify which waters are "high quality" as a whole, consistent with the overarching CWA goal to maintain the chemical, physical and biological integrity of the waters. Thus, where resources are limited, states and authorized Tribes can focus their efforts on protecting their higher-value waters based on an assessment of each water's overall chemical, physical and biological condition.[55] This approach also allows for states and authorized Tribes to make Tier 2 decisions in advance of the antidegradation review, which may facilitate implementation by providing the public and regulated community with upfront information and an opportunity to influence which waters will be protected as Tier 2. Maintaining a list of high quality waters may also be beneficial for water quality management across programs. For example, nonpoint source programs may be able to use lists of high quality waters as a resource for developing prioritization frameworks to target water quality protection work. However, for complicated situations, such as where the water is meeting some CWA 101(a)(2) uses but not others, some states and authorized Tribes may find the process of identifying high quality waters using the waterbody-by-waterbody approach more resource intensive than the parameter-by-parameter approach. If this is the case, the state or authorized Tribe might consider whether spending its water quality protection resources performing a Tier 2 review to determine whether a proposed lowering is necessary to accommodate important social and economic development in the area might be better than holistically evaluating waters to identify which waters should be afforded Tier 2 protection.

States and authorized Tribes have discretion when identifying how to provide Tier 2 protection but must do so in a manner consistent with the CWA and 40 CFR 131.12. Where a state or authorized Tribe decides to change the method used to identify high quality waters, they may do so, as long as it is in a manner that is consistent with the CWA and 40 CFR 131.12 and the state or authorized Tribe updates their implementation methods to reflect the change. The federal regulation does not require states and authorized Tribes to identify which waters are afforded Tier 2 protection in rule or other legally binding documents. However, where a state or authorized Tribe identifies waters for Tier 2 protection in its legally binding WQS (e.g., in its antidegradation policy or adopted implementation methods), the EPA does have the authority and duty to take a CWA Section 303(c) action on those categorizations as new or revised WQS. 40 CFR 131.12 also requires that if a state or authorized Tribe uses a waterbody-by-waterbody approach, the state or authorized Tribe must provide the opportunity for public involvement in any decisions on which waters are assigned Tier 2 protection and the factors considered in that decision-making process.

4.3.2 Antidegradation Tier 2 Review

A Tier 2 review is a structured process designed to help a state or authorized Tribe decide whether the proposed lowering of high water quality is necessary to accommodate important economic or social development in the area in which the water

[55] *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51030 (August 21, 2015).

is located. The finding is based on an analysis of alternatives and a socio-economic analysis. The analyses may be performed in whichever order the state or authorized Tribe chooses.

A state or authorized Tribe may conduct the Tier 2 review itself or it may evaluate analyses submitted by other entities before deciding whether to allow the proposed degradation. Some states and authorized Tribes rely on the applicant to bear the burden of performing some components of the Tier 2 review (e.g., the analysis of alternatives and/or the socio-economic analysis) by requiring the applicant to provide documentation for the state or authorized Tribe to consider in the Tier 2 review. Some states and authorized Tribes develop worksheets or application forms for permit/license/authorization applicants to detail their project information so that the state or authorized Tribe can perform the Tier 2 review based on an evaluation of that information. In all cases, the states and authorized Tribes remain responsible for making the ultimate decision to allow or deny a proposed lowering of high water quality.

When a state or authorized Tribe completes the Tier 2 review but they are not the entity that authorizes the lowering of water quality, such as when the EPA is the permit writing authority, the state or authorized Tribe provides the outcome of the Tier 2 review to the authorizing entity to incorporate into the authorization. Where the state or Tribe is authorized to administer the CWA Section 401 program, it would review whether the results of the Tier 2 review are appropriately incorporated into the authorization during the CWA Section 401 certification process that certifies that the authorization meets the state's or authorized Tribe's water quality requirements, including antidegradation requirements (see section 4.8.3 of this chapter).

To be consistent with 40 CFR 131.12(a)(2), a state or authorized Tribe must conduct an antidegradation Tier 2 review before deciding to allow a lowering of higher water quality. The antidegradation Tier 2 review consists of the following components:

- Identification of the proposed activity that, if allowed, could potentially lower high water quality,
- Analysis of alternatives,
- Socio-economic analysis,
- Full satisfaction of all intergovernmental coordination and public participation provisions,

- Assurance that the highest statutory and regulatory requirements for point sources shall be achieved,
- Assurance that BMPs for nonpoint source pollutant controls shall be achieved, and
- Assurance that the resulting water quality after the lowering of high water quality will protect existing uses (See section 4.2).

4.3.2.1 Tier 2 Review: Identification of Activities that Potentially Lower High Water Quality

"Water quality standards serve the dual function of establishing water quality goals for a specific waterbody and providing the basis for regulatory controls."[56] WQS, including antidegradation policies and state or Tribal adopted AIMs, apply to the waterbody regardless of the activity, source of degradation (point source or nonpoint source), or whether there are direct, enforceable, federal implementation mechanisms. Therefore, states and authorized Tribes should not exempt whole classes of activities from WQS as it would invalidate "the broader, intended purpose of adopted State water quality standards."[57]

The application of WQS is to the waterbody and not limited to activities with enforceable implementation mechanisms. "Applicability and enforceability are two distinctly separate functions in the water quality standards program. Water quality standards are applicable to all waters and in all situations, regardless of activity or source of degradation. [However,] implementation of those standards may not be possible in all circumstances."[58] A state or authorized Tribe can specify that certain activities have no control requirements under state or Tribal law, but they cannot specify that WQS do not apply to those activities.[59]

The EPA recommends that states and authorized Tribes clearly specify in their antidegradation policy and AIMs that the activities that could "*trigger*" enforcement of the Tier 2 requirements are any *proposed activities that could potentially lower high water quality*.

States and authorized Tribes must implement antidegradation policies and AIMs for point source activities authorized via permits or licenses under CWA Sections 402 or 404 authorities or to which CWA Section 401 certification applies. In addition, where states and authorized Tribes have nonpoint source control programs, the EPA recommends that they conduct an antidegradation review before allowing a lowering of water quality from such activities. The federal regulation would require a Tier 2 review when one of those activities would potentially "allow" a lowering (with respect to what has previously been allowed after an antidegradation review) of water quality in a high quality water. Activities such as a proposed new discharge to a high quality water or a proposed

[56] Davies, T. EPA. 1994. Memorandum: Interpretation of Federal Antidegradation Regulatory Requirement. Office of Water, Washington DC. https://www.epa.gov/sites/production/files/2014-10/documents/davies-regrequire-memo.pdf.
[57] Ibid.
[58] Ibid.
[59] Ibid.

expansion of an existing facility on a high quality water would likely lower high water quality. Such activities would not be permissible unless the state or authorized Tribe conducts a Tier 2 review consistent with its antidegradation policy, its AIMs, and the federal regulation, and finds that the activity is necessary to accommodate important economic or social development in the area in which the waters are located. In addition, a proposed permit/license/authorization re-issuance in which the authorization for an existing facility/activity would allow more pollution to the waterbody than the previous authorization had allowed (i.e., an expanded discharge) would also trigger a Tier 2 review. However, an authorization reissued without any changes to its previous limits would not trigger a Tier 2 review, as long as a Tier 2 review had previously been completed for this activity.

Where states or authorized Tribes have nonpoint source control programs, states and authorized Tribes could incorporate antidegradation reviews into these programs to ensure that any lowering of water quality is consistent with the larger water quality goals of the state or authorized Tribe. To ensure that the state's or authorized Tribe's antidegradation policy and AIMs are both effectively implemented and transparent to the public and the regulated community, the state's or authorized Tribe's antidegradation policy and AIMs should explicitly describe which activities will trigger a Tier 2 review.

For additional information about the application and implementation of antidegradation through other proposed regulated activities that could potentially lower water quality, see section 4.8 of this chapter.

4.3.2.2 Tier 2 Review: Determining Necessity and Importance of an Activity

Before allowing a proposed activity to degrade water quality, a state or authorized Tribe must make a finding that the lowering is "necessary to accommodate important economic or social development in the area in which the waters are located" (40 CFR 131.12(a)(2)). The finding is not based simply on whether degradation is necessary to accomplish the proposed activity, but also whether the lowering of water quality actually needs to occur for important socio-economic development that will benefit the community impacted by the lowering of high water quality. This finding relies on a multi-part analysis to examine, at a minimum, the following two questions (in any order):

- Whether "allowing lower water quality is necessary," by examining alternatives to

the proposed degradation through an analysis of alternatives,[60] and

- Whether the proposed activity that could potentially result in lowering high water quality will "accommodate important economic or social development in the area in which waters are located," through a socio-economic analysis that considers potential harms and benefits to the community where the lowering of water quality will occur.[61]

Analysis of Alternatives

An analysis of alternatives answers the question of whether a proposed lowering of high water quality is "necessary" or whether an alternative to the proposed lowering is possible and would result in either no or less degradation. An analysis of alternatives provides a mechanism for the state or authorized Tribe to determine whether non-degrading or less degrading practicable alternatives to the proposed activity exist. It is important to note, however, that 40 CFR 131.12(a)(2)(ii) only requires the entity conducting the analysis of alternatives to identify a range of practicable alternatives, not every possible practicable alternative. For the purposes of this requirement, 40 CFR 131.3(n) defines "practicable" as "technologically possible, able to be put into practice, and economically viable." If the analysis identifies one or more such practicable alternatives, states and authorized Tribes cannot make a finding that a lowering of high water quality is necessary unless one of the alternatives resulting in less degradation than the originally proposed activity is selected for implementation. The entity selecting the alternative could be the entity requesting the lowering or the state or authorized Tribe responsible for authorizing any requested lowering. Whichever entity selects the alternative, it may choose from the range of practicable alternatives identified in the analysis. The EPA's regulation does not require the entity to select the least degrading alternative; however, states or authorized Tribes may choose to specify in their policies

[60] *Water Quality Standards Regulatory Clarifications*, 78 Fed. Reg. 54528 (September 4, 2013).
[61] Ibid.

or AIMs that the least degrading alternative must be selected. The entity must still select an alternative even if the analysis identifies only one practicable less degrading alternative. The original proposal can only be selected if no practicable less degrading alternatives are identified, making that specific proposed activity "necessary." This structured analysis of alternatives provides states and authorized Tribes with a basis to make informed and reasoned decisions, ensuring that degradation only occurs where truly necessary.

Given the variety of available engineering approaches for pollution control and the importance of pollution prevention, the state or authorized Tribe's finding of necessity is among the most important and useful aspects of an antidegradation program and potentially an extremely useful tool in the context of watershed planning. Retaining additional assimilative capacity in a waterbody by selecting a less or non-degrading alternative can help retain resiliency in the waterbody to be able to tolerate future stressors, such as climate change. While the regulation does not specify who must conduct the analysis of alternatives, the EPA recommends that the applicant for the proposed activity develop and present to the state or authorized Tribe a range of pollution control/pollution prevention alternatives for the state or authorized Tribe to consider during the Tier 2 review. The applicant is in the best position to evaluate options to its own activity that could achieve its stated purposes but with alternatives that minimize how much that activity degrades the water quality in the receiving waterbody.

An analysis of alternatives informs the state's or authorized Tribe's decision of whether the degradation is "necessary." The state, authorized Tribe, or applicant would conduct its analysis of alternatives by considering a range of available non-degrading and less degrading practicable alternatives to the proposed activity. The entity could evaluate any available, practicable alternatives, which might include the following:

- Options for no discharge;
- Implementation of pollution prevention measures;
- Process changes (e.g., treatment process changes, facility process changes);
- Reduction in the scale of the project;
- Advanced or different treatment technologies;
- Water recycling and reuse;
- Seasonal or controlled discharge options that would avoid critical water quality periods; and
- Discharging to an alternative location.

Some alternatives may be unique to the type of permit being issued. For example, when considering alternatives to dredge and fill discharges that may alter the nature of the waterbody (e.g., changing a stream into a pond for fishing opportunities), the discharger could evaluate recreational alternatives (e.g., creating a walking path or docks along the stream to allow fishing rather than creating a pond) that maintain the original hydrology and habitat of the waterbody. Regardless of the number of alternatives identified, the

analysis should provide a level of detail commensurate with the significance and magnitude of the particular circumstances encountered. This will provide the public with the necessary information to understand how the state or authorized Tribe made its decision.

The EPA's guidance on considering economics for WQS decisions, found in two main documents: *Interim Economic Guidance for Water Quality Standards: Workbook* (hereafter referred to as "1995 Interim Economic Guidance") and *Clean Water Act Financial Capability Assessment Guidance* (hereafter referred to as "FCA Guidance"), can help states and authorized Tribes determine whether an alternative is economically viable, which is one of the elements for determining whether an alternative is practicable.[62, 63] The 1995 Interim Economic Guidance provides guidance to the public and private sectors on the types of information that a state or authorized Tribe should consider when determining whether the cost of implementing pollutant reduction alternatives could result in a substantial impact to the affected community and/or discharger and potentially not be economically viable. The FCA Guidance supplements the public sector sections of the 1995 Interim Economic Guidance with additional indicators and analyses for low-income residents, an Expanded Economic Impact Matrix, and recommendations

[62] EPA. 1995. *Interim Economic Guidance for Water Quality Standards, Workbook*, EPA 823-B-95-002. EPA, Office of Water, Washington, DC 20460. EPA. March 1995. https://www.epa.gov/system/files/documents/2024-01/interim-economic-guidance-water-quality-standards-workbook-1995.pdf;

[63] EPA. 2024. Clean Water Act Financial Capability Assessment Guidance. EPA-800-B-24-001. EPA, Office of Water, Washington, DC 20460. March 2024. https://www.epa.gov/system/files/documents/2023-01/cwa-financial-capability-assessment-guidance.pdf.

to consider when making WQS decisions. The FCA Guidance does not revise the recommended methodology in the private sector sections of the 1995 Interim Economic Guidance. The EPA's Economic Guidance for Water Quality Standards webpage also provides spreadsheet tools for the public and private sector analysis to help guide the user through the steps to successfully implement the FCA Guidance and 1995 Interim Economic Guidance.

The 1995 Interim Economic Guidance suggests a series of financial tests to help determine whether the cost of pollutant control alternatives could result in a substantial impact and potentially not be economically viable. For the public sector, the 1995 Interim Economic Guidance recommends to first calculate a municipal preliminary screener. The municipal preliminary screener evaluates the impact that the cost of pollutant control alternatives would have on a household and thus "screens" for situations where additional analyses may not be warranted. A secondary test further evaluates the potential for a substantial impact by examining indicators related to the community's ability to obtain financing and the community's socioeconomic health.

For the private sector, the 1995 Interim Economic Guidance recommends evaluating several indicators related to the potential impact of pollutant control alternatives on profit, liquidity, solvency, and leverage. Profit is the income to the owner(s) of a company, liquidity is a measure of how easily a company can pay its short-term bills, solvency is a measure of a company's ability to meet its fixed and long-term obligations, and leverage is a measure how much money a company is capable of borrowing. The lowering of water quality resulting from the original proposal may not be necessary if these tests indicate that an alternative is economically viable and, in addition, that alternative is also able to be put into practice and is technologically possible (i.e., "practicable"). If no alternatives are economically viable, and thus no alternatives are practicable, then the socio-economic analysis, which incorporates social indicators of a community into the analysis, must determine whether the originally proposed activity is important for the community (See the "Socio-economic Analysis" subsection in this section).

Section III of the FCA Guidance recommends an expanded multi-step approach for public sector entities to determine which pollutant control alternatives could result in a substantial impact. In addition to the Initial Economic Impact analyses recommended in the 1995 Interim Economic Guidance, the FCA Guidance recommends states and authorized Tribes to:

- Calculate a Lowest Quintile Poverty Indicator Score: Evaluate a set of six socioeconomic statistics from the Census Bureau to help identify low income and/or economically disadvantaged communities and incorporate that information into the assessment of economic impacts.

- Perform a Financial Alternatives Analysis: Investigate a variety of potential funding sources and alternative financial mechanisms that could minimize financial impacts to residents living in overburdened and/or low-income communities so

that these residents also enjoy the benefits of infrastructure investments and improved water quality.

- Combine the analysis recommended in the 1995 Interim Economic Guidance with the additional analyses recommended in the FCA Guidance: Combine the analytical results from the 1995 Interim Economic Guidance with the additional analytical results recommended in the FCA Guidance using the expanded Economic Impact Matrix.

Finally, the FCA Guidance provides recommendations on how to interpret the combined analytical results to determine if pollution control alternatives would result in a substantial economic impact and potentially not be economically viable.

Once the evaluating entity identifies a range of practicable alternatives, the state, authorized Tribe, or applicant would evaluate the alternatives in terms of the resulting extent of degradation. By initially considering alternatives that range from non-degrading to less degrading as opposed to simply identifying the single least degrading practicable alternative, the state, authorized Tribe, or applicant then has the flexibility to select the alternative among those best suited for the particular situation. The state, authorized Tribe, or applicant should consider the environmental impacts and technological and economic feasibility of the alternatives in the context of the environmental benefits more holistically by considering implications beyond the direct effects on water quality, such as cross-media impacts. Such impacts may include, for example, any potential adverse terrestrial impacts due to land application of pollutants found in water, or any potential adverse impacts to air quality and energy use due to incinerating pollutants rather than discharging to surface water.

The benefits of high water quality may be jeopardized if states and authorized Tribes do not consider the long-term consequences of lowering water quality or evaluate the alternatives that might be available to reduce the need to degrade a high quality water. This could reduce the resiliency of that ecosystem, making it more difficult for the ecosystem to endure the impacts of future stressors, like climate change, and retain its functionality. As mentioned earlier in this section, the analysis of alternatives may be conducted by the state or authorized Tribe, the permit applicant, or another entity. Regardless of who conducts the analysis of alternatives, the state or authorized Tribe remains ultimately responsible for making the finding that a proposed lowering of high water quality is *necessary*.

Socio-Economic Analysis

A socio-economic analysis is another component of the state's or authorized Tribe's Tier 2 review. This analysis answers the question of whether a proposed (either originally proposed activity or a selected alternative that still results in some degradation) lowering of high water quality accommodates important economic or social development in the area in which the waters are located. The state or authorized Tribe, the permit applicant, or other entity may conduct the socio-economic analysis. Regardless of who conducts the

analysis, the state or authorized Tribe remains ultimately responsible for making the finding that a proposed lowering of high water quality is socially and economically *important*.

Approaches for evaluating social and economic importance vary widely. Determining the social and economic importance of a proposed activity is an essential public question best addressed by the state, authorized Tribe, or local interests in the larger context of the local circumstances, perhaps as part of the development of a basin plan. In addition to helping determine which alternatives are economically viable, the EPA's *Interim Economic Guidance for Water Quality Standards: Workbook* and the *Clean Water Act Financial Capability Assessment Guidance* also help determine whether a proposed activity accommodates important social and economic development.[64] These guidance documents can be useful to states and authorized Tribes in determining the relative economic impacts of various proposed activities and their relationship to WQS. The EPA also developed supplemental *spreadsheet tools*[65] that can help states, authorized Tribes, and stakeholders implement the recommendations of the EPA's *Interim Economic Guidance* and *FCA Guidance*.

No specific financial test can indicate definitively whether an activity is important. Rather, a state or authorized Tribe can examine a number of factors that may be impacted by the development and use that information to make a judgement call about the importance of the activity. The socio-economic analysis may address a range of factors including, but not limited to, the following:

- Employment (e.g., increasing, maintaining, or avoiding a reduction in employment),
- Improved community tax base,
- Housing, and
- Correction of an environmental or public health problem.

The socio-economic analysis may consider potential benefits of allowing the activity (e.g., providing new jobs) and potential detriments of allowing the activity (e.g., decreasing recreational value, decreasing tourism revenue, or impacting underserved portions of the community due to the lowering of water quality). States and authorized Tribes can also consider whether allowing the activity prevents the use of the waterbody for a non-degrading or less-degrading activity that would also provide socio-economic benefits (e.g., approving an industrial plant may preclude waterfront or marina development).[66] Finally, the state or authorized Tribe may consider the long-term plans of the community, and how allowing a loss of high water quality will affect the community in the future. Overall, implications of the proposed activity should be considered in a balanced approach that does not overlook the benefits of maintaining the level of the high water quality.

[64] EPA. 1995. Interim Economic Guidance for Water Quality Standards, Workbook, EPA 823-B-95-002. EPA, Office of Water, Washington, DC 20460. March 1995. https://www.epa.gov/system/files/documents/2024-01/interim-economic-guidance-water-quality-standards-workbook-1995.pdf

[65] http://water.epa.gov/scitech/swguidance/standards/economics/#spreadsheet.

[66] EPA. 1995. Water Quality Guidance for the Great Lakes System: Supplementary Information Document (SID). EPA 820-B-95-001. EPA, Office of Water, Washington, DC 20460. March 1995. https://www.epa.gov/sites/default/files/2015-12/documents/1995_water_quality_guidance_for_great_lakes_sid.pdf.

Considerations for These Analyses

States and authorized Tribes have the discretion to decide the order in which each analysis is performed, but the ultimate finding to allow a lowering of high water quality depends on both an analysis of alternatives and an analysis of the importance of the economic or social development in the area in which the waters are located. However, if the analysis of alternatives finds that the lowering of high water quality is not necessary or the socio-economic analysis finds that the lowering of high water quality is not important, then the lowering of high water quality cannot be permitted and there is no need to conduct the second analysis. For example, if the state or authorized Tribe determines the proposed lowering would not accommodate important economic or social development in the area in which the waters are located through a socio-economic analysis, the state or authorized Tribe could not allow the lowering of high water quality, and therefore no analysis of alternatives would be needed. Similarly, if after the analysis of alternatives the state or authorized Tribe selects a non-degrading alternative for implementation, it does not need to proceed with the socio-economic analysis since the selected alternative would not lower high water quality. Although states have discretion to perform these analyses in either order, the EPA finds that it is more practical to do the analysis of alternatives first and then the socio-economic analysis, as the socio-economic analysis may differ based on the selected alternative.

As states and authorized Tribes consider the results of the analysis of alternatives and the socio-economic analysis, they are not obligated to allow a proposed activity and associated lowering of high water quality to move forward. States and authorized Tribes could make one of the three following decisions:

1. *Allow the activity to lower high water quality as originally proposed if the analysis of alternatives showed that the lowering was necessary and the socio-economic analysis showed that the lowering was important.* This means that no practicable alternatives were identified, and that the activity will provide an important social or economic benefit to the community.
2. *Allow the activity to lower high water quality to a lesser extent than proposed.* If the analysis of alternatives identified practicable alternatives that lessen the degradation, the state or authorized Tribe can only allow the lowering of water quality if one of those practicable alternatives is implemented and the activity is shown to provide an important social or economic benefit to the community.
3. *Not allow the proposed activity and require maintenance of the current high water quality.* The state or authorized Tribe would make this decision if the analysis of alternatives identified a non-degrading alternative (demonstrating that the lowering was not necessary) or if the state or authorized Tribe determined, based on the socio-economic analysis, that the lowering (even by a less degrading alternative if one was identified) was not important for the community's social or economic development.

As mentioned previously, while states and authorized Tribes are responsible for making the finding to allow a lowering of water quality based on a reasonable, credible, and adequate analysis of alternatives and socio-economic analysis, they do not need to conduct these analyses themselves. A permit applicant or another entity could perform the analyses and then provide that information to the state or authorized Tribe to review and make the decision about whether to authorize the lowering of water quality in a high quality water.

4.3.2.3 Tier 2 Review: Intergovernmental Coordination and Public Participation

The federal regulation at 40 CFR 131.12(a)(2) contains an explicit requirement that a state or authorized Tribe may only allow a lowering of high water quality, "after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process." States and authorized Tribes may satisfy these requirements in a variety of ways, provided they are consistent with the state's or authorized Tribe's continuing planning process.

A state or authorized Tribe needs to follow its own intergovernmental coordination and public participation provisions. This may include providing public notice of the draft permit, providing public notice of the proposed activity, and/or holding a public meeting associated with the proposed activity that would potentially lower high water quality.

The EPA recommends that states and authorized Tribes provide the public and other affected government entities information on the proposed activity, the analysis of alternatives, the socio-economic analysis, the state's or authorized Tribe's preliminary decision on whether to allow the lowering of water quality, and the extent to which the water quality would be lowered. The EPA recommends engaging the public and conducting intergovernmental coordination as early as possible in the Tier 2 review process. This will ensure the most effective intergovernmental coordination and public participation.

When complying with the requirement for intergovernmental coordination, some states

and authorized Tribes specifically notify downstream states, Tribes, or management agencies (e.g., Bureau of Land Management, Forest Service) with purview over lands surrounding the receiving water that may be affected by the proposed activity. They may also notify local and municipal governments located in the area of the waterbody impacted by the activity. For example, a state or authorized Tribe could convene specific meetings with those other governments or entities on the issue or notify them of the proposed activity and their ability to comment through the avenues available to the general public (e.g., public notice process for a permit).

4.3.2.4 Tier 2 Review: Assurance of Existing Use Protection

If a state or authorized Tribe has determined that a lowering of high water quality is both necessary and important, 40 CFR 131.12(a)(2) requires the state or authorized Tribe also assure that the resulting water quality after allowing the lowering will still "protect existing uses fully." This requirement reaffirms Tier 1 protection, that in all waters of the United States the level of water quality necessary to protect existing uses shall be maintained and protected. Therefore, a state or authorized Tribe cannot allow a lowering of high water quality beyond the level that fully protects existing uses.

4.3.2.5 Tier 2 Review: Point and Nonpoint Sources

If a state or authorized Tribe decides to allow a lowering of high water quality, the federal regulation at 40 CFR 131.12(a)(2) requires the state or authorized Tribe to also "assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources." This requirement means that states and authorized Tribes must not allow new or expanded point sources to contribute additional pollution that could result in degradation of high quality waters to waters with existing point source control compliance problems until those compliance issues are remedied, or the discharger provides the state or authorized Tribe an assurance that the compliance issues will be remedied (e.g., enforcement schedule of compliance).

Similar to the point source pollution control requirement, 40 CFR 131.12(a)(2) also requires that "all cost-effective and reasonable best management practices for nonpoint source control" be achieved. This means that where nonpoint sources do not comply with state or Tribal requirements in high quality waters, states and authorized Tribes must not allow proposed new or expanded activities to contribute additional pollutants that could result in degradation until those compliance issues are remedied or there is assurance that the compliance issues will be remedied. Also, similar to compliance issues from point sources, allowing additional pollution without first addressing existing nonpoint source compliance problems would be inconsistent with the intent of the CWA objective and the federal antidegradation regulation.

The EPA addressed this issue directly in a 1994 memo, explicitly stating that "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."[67] Note that this language in 40 CFR 131.12(a)(2) only means that nonpoint sources must achieve adopted state or authorized Tribal nonpoint source control requirements; it does not require that states or authorized Tribes adopt nonpoint sources control requirements prior to allowing degradation of a high quality water.[68]

In addition to assuring proper implementation of required BMPs for nonpoint source controls, the EPA recommends that states and authorized Tribes explain in their antidegradation policies and AIMs whether, how, and to what extent, the state or authorized Tribe will pursue implementation of voluntary BMPs for nonpoint source controls before allowing point source degradation of high quality waters. For example, nonpoint source management plans developed under CWA Section 319 (and associated watershed plans) are likely to identify potential problems and certain voluntary means, critical areas, and BMPs for nonpoint source controls to correct those problems. The state or authorized Tribe should consider how these voluntary actions will be implemented and how they might affect the state's or authorized Tribe's antidegradation program.

4.3.3 Use of *De Minimis* in Antidegradation

The *de minimis* concept is not specific to WQS; rather, it is a broader legal principle used to interpret and implement many environmental statutes and regulations. In general, it is a tool used to implement a statute in a way that prevents trivial items from draining government time and resources. The Sixth Circuit has explained that there is an "administrative law principle which allows an agency to create unwritten exceptions to a statute or rule for insignificant or '*de minimis*' matters."[69] The DC Circuit, in *Alabama Power Co. v. Costle*,[70] ruled that unless Congress has been extraordinarily rigid, there is likely a basis to use the *de minimis* authority to provide exemption when the burdens of regulation yield a gain of trivial or no value.[71] The Court went on to explain that the authority to create a *de minimis* provision "is not an ability to depart from the statute, but rather a tool to be used in implementing the legislative design."[72] Courts have explained that the implied *de minimis* provision authority is "narrow in reach and tightly bounded by the need to show that the situation is genuinely *de minimis* or one of

[67] Davies, T. EPA. 1994. Memorandum: Interpretation of Federal Antidegradation Regulatory Requirement. Office of Water, Washington DC. https://www.epa.gov/sites/production/files/2014-10/documents/davies-regrequire-memo.pdf.
[68] Davies, T. EPA. 1994. Memorandum: Interpretation of Federal Antidegradation Regulatory Requirement. Office of Water, Washington DC. https://www.epa.gov/sites/production/files/2014-10/documents/davies-regrequire-memo.pdf
[69] Ky. Waterways Alliance v. Johnson, 540 F.3d 466, 483 (6th Cir. 2008).
[70] Ala. Power Co. v. Costle, 636 F.2d 323, 360 (D.C. Cir. 1980).
[71] Ala. Power Co. v. Costle, 636 F.2d 323, 360-361 (D.C. Cir. 1980).
[72] Ala. Power Co. v. Costle, 636 F.2d 323, 361 (D.C. Cir. 1980).

administrative necessity."[73]

Some states and authorized Tribes apply the *de minimis* concept to Tier 2 reviews to prioritize and manage limited resources by not performing Tier 2 reviews for activities that they believe cause an insignificant lowering of high water quality. This allows them to focus their resources on activities likely to have significant effects on water quality to achieve the greatest amount of environmental protection. However, even *de minimis* levels of degradation reduce assimilative capacity of the waterbody and diminish the waterbody's resilience to future stressors. Therefore, some states and authorized Tribes choose not to employ a *de minimis* provision in the implementation of their antidegradation program. The EPA's regulation does not specifically identify any situations for which states and authorized Tribes can decide not to conduct Tier 2 reviews where such a review would otherwise be required. However, the EPA's regulation also does not prevent states and authorized Tribes from adopting such *de minimis* provisions consistent with the principles set forth by the courts.

To date, states and authorized Tribes have defined "significant degradation" in a variety of ways. Significance tests range from simple to complex, involve qualitative or quantitative measures or both, and may vary depending upon the type of pollution or pollutant (e.g., the approach may be different for highly toxic or bioaccumulative pollutants). The EPA does not endorse one specific approach to identifying what constitutes significant degradation, though the EPA does recognize one potential way a state or authorized Tribe could describe its *de minimis* methodology. The state or authorized Tribe could identify a "significance threshold" as a percentage of assimilative capacity[74] lost for a parameter that would be considered insignificant or *de minimis* (See Figure 4-6).[75] To implement such an approach, the state or authorized Tribe would specify in its antidegradation policy and/or AIMs that degradation that utilizes a percentage of the assimilative capacity below or equal to the significance threshold is considered *de minimis* and does not require an antidegradation Tier 2 review prior to authorization.

[73] Ala. Power Co. v. Costle, 636 F.2d 323, 360-361 (D.C. Cir. 1980).

[74] Assimilative Capacity: 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.

[75] King, E. EPA. 2005. Memorandum: Tier 2 Antidegradation Reviews and Significance Thresholds. Office of Water, Washington DC. https://www.epa.gov/sites/production/files/2014-10/documents/tier2.pdf.

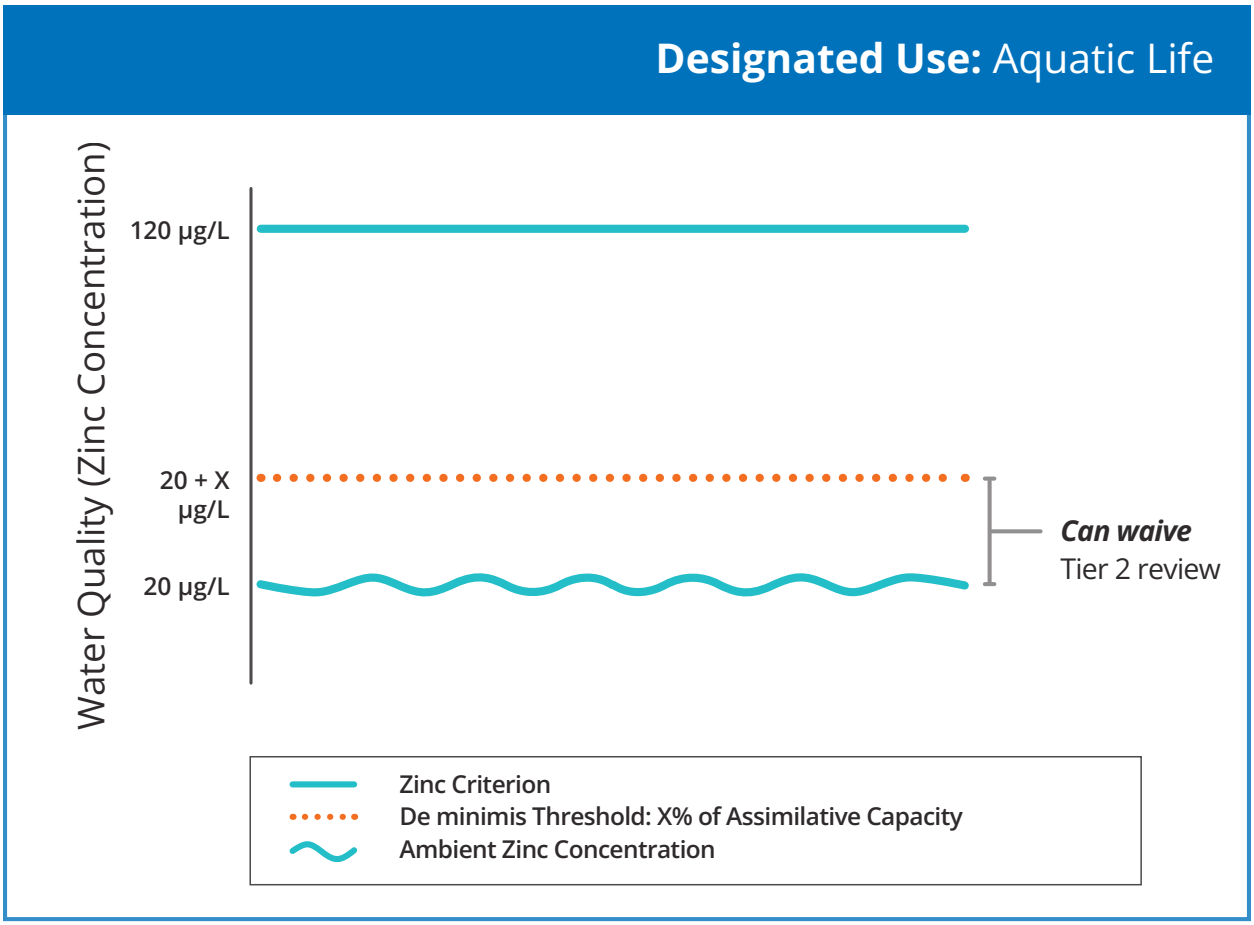


Figure 4-6. Example of a *De Minimis* Threshold. In this example, a state or authorized Tribe has determined that degradation up to X% of the assimilative capacity is insignificant or *de minimis*. Therefore, for a proposed activity that would lower high water quality but would only use between 0% and X% of the assimilative capacity, the Tier 2 review could be waived. Since the assimilative capacity in this waterbody is 100 µg/L, X% of the assimilative capacity will equal X µg/L. If the activity degrades the water quality to the point where more than X% of the assimilative capacity would be used, then a Tier 2 review would be required before allowing the activity. See Figure 4-7 for an example of a *de minimis* threshold with multiple activities. Note that the use of zinc in this diagram is solely for illustrative purposes. States and authorized Tribes should evaluate whether the use of a *de minimis* provision is appropriate for a particular parameter, taking into consideration any potential bioaccumulative properties.

Legal challenges have raised questions about the extent to which some states and authorized Tribes use the *de minimis* concept in the context of antidegradation, particularly when multiple *de minimis* degradations of water quality are within the same waterbody. In the case *Ohio Valley Coalition v. Horinko*,[76] the Court opined that cumulative, not just individual, effects on assimilative capacity need to be assessed when determining the appropriateness of *de minimis* exemptions from Tier 2 review for activities on high quality waters. The EPA's 2005 recommendation to use a cumulative

[76] Ohio Valley Coalition v. Horinko, 279 F. Supp. 2d 732, 746-50 (S.D. W. Va. 2003).

cap for *de minimis* exemptions is consistent with the outcome of this case.[77] The EPA recommends that where there are multiple or repeated *de minimis* activities in one waterbody, states and authorized Tribes incorporate a cumulative cap on the use of total assimilative capacity. To do so, a state or authorized Tribe would first establish a baseline measurement of water quality in a waterbody, and then track the use of assimilative capacity by each approved activity in that waterbody (Figure 4-7). This approach creates a backstop so that multiple *individual de minimis* discharges to a waterbody over time do not result in a significant amount of the total assimilative capacity being used without a single antidegradation Tier 2 review. The state or authorized Tribe would thus require a Tier 2 review for any lowering of water quality beyond the cumulative cap, regardless of the percentage of assimilative capacity used by that individual activity.

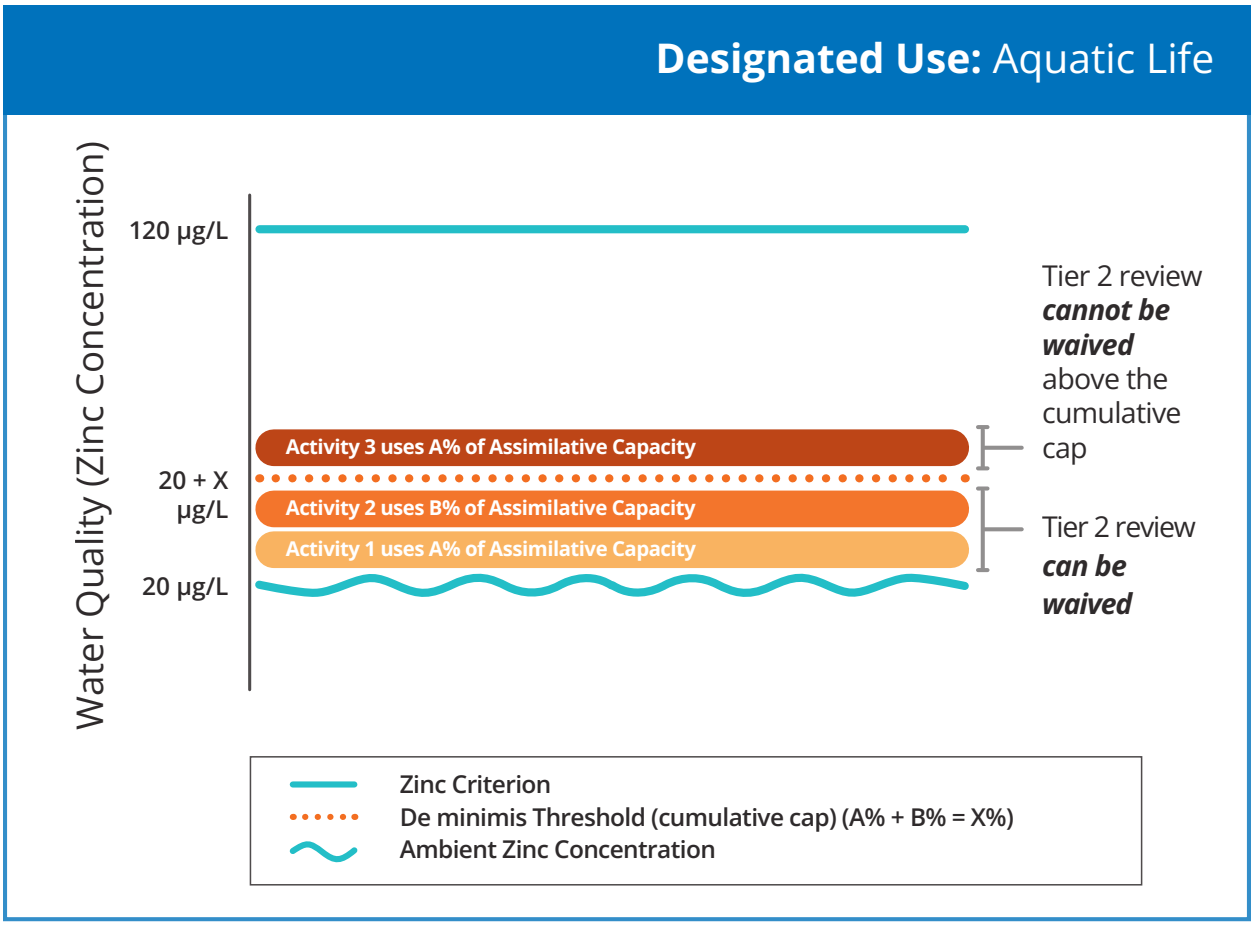


Figure 4-7. Example of the Cumulative Impact of Multiple *De Minimis* Activities. In this example the level of degradation considered insignificant by the state or authorized Tribe, or *de minimis*, is X% of the assimilative capacity. This threshold is set as a cumulative cap. In this example, lowering of the high water quality may be allowed without a Tier 2 review up until the point that the collective degradation has used up X% of that waterbody's assimilative capacity. After that point, the state or authorized Tribe must conduct a Tier 2 review before allowing any additional lowering of water quality. Here, activity 1 used A% of the assimilative capacity and activity 2 used B% of the assimilative capacity, so collectively X% of the waterbody's assimilative capacity has

[77] King, E. EPA. 2005. Memorandum: Tier 2 Antidegradation Reviews and Significance Thresholds. Office of Water, Washington DC. https://www.epa.gov/sites/production/files/2014-10/documents/tier2.pdf.

been used. A Tier 2 review could have been waived for these activities. Activity 3 also uses A% of the assimilative capacity, but since activities 1 and 2 have already used X% of the waterbody's assimilative capacity, the state or authorized Tribe must perform a Tier 2 review before the lowering of high water quality is allowed for activity 3. Note that the use of zinc in this diagram is solely for illustrative purposes. States and authorized Tribes should evaluate whether the use of a *de minimis* provision is appropriate for a particular parameter, taking into consideration any potential bioaccumulative properties.

States and authorized Tribes may see some challenges when implementing the cumulative cap concept and should consider these challenges prior to deciding whether to proceed with a *de minimis* approach. For example, the state or authorized Tribe may find it difficult to identify a cumulative cap small enough to appropriately be viewed as "trivial" or "insignificant," while still allowing individual activities considered *de minimis* to occur within that margin. The state or authorized Tribe may also find it difficult to develop appropriate methods for tracking cumulative degradation to a waterbody to ensure that the cumulative cap is not exceeded without an appropriate Tier 2 review. Part of this difficulty is establishing baseline water quality, which is the ambient water quality of the waterbody at the point when the state or authorized Tribe starts tracking the use of assimilative capacity. States and authorized Tribes may find it easier to perform Tier 2 reviews on each individual activity that would lower high water quality than to track the cumulative losses of assimilative capacity.

Alternatively, rather than using a threshold of assimilative capacity, some states have determined that certain types of activities do not require a Tier 2 review because they either do not lower high water quality or only result in an insignificant lowering of high water quality. The EPA cautions against this approach as "States or authorized Tribes that define a high threshold of significance may be unduly restricting the number of proposed activities that are subject to a full antidegradation review. Further, the approach currently used by some States may not adequately prevent cumulative water quality degradation on a watershed scale."[78]

In the case *Kentucky Waterways Alliance v. EPA*,[79] the Sixth Circuit Court of Appeals vacated, among other things, the EPA's approval of Kentucky's use of *de minimis* to exempt certain types of discharges from Tier 2 review. The Court held that the EPA had failed to evaluate whether the individual or cumulative impact of lowering from the activities that were exempted from Tier 2 review based on the *de minimis* provision actually caused a significant impact on the high quality water.

Therefore, the EPA recommends that a state or authorized Tribe only consider determining that a specific class of activity does not need a Tier 2 review if it can provide the appropriate technical justification that demonstrates the activity does not cause a lowering of water quality (or only an insignificant lowering of water quality). In addition, if the activity can result in insignificant levels of water quality degradation, the state

[78] *Water Quality Standards Regulation*, 63 Fed. Reg. 36742 (July 7, 1998).
[79] Kentucky Waterways Alliance v. EPA, 540 F.3d 466 (6th Cir. 2008).

or authorized Tribe should demonstrate that cumulative lowerings will not result in significant degradation.

Despite these challenges, states and authorized Tribes have the discretion to include *de minimis* provisions in their antidegradation programs as long as they use them in a manner consistent with the CWA and 40 CFR 131.12. This includes demonstrating that the degradation is truly *de minimis* and that the use of a *de minimis* exemption does not result in significant degradation in the long run (e.g., by the use of a cumulative cap). Courts have explained that a "determination of when matters are truly *de minimis* naturally will turn on the assessment of particular circumstances, and the agency will bear the burden of making the required showing."[80] For any significance threshold, the state or authorized Tribe should provide appropriate technical justification for how the loss of that amount of assimilative capacity could be considered to have an insignificant impact in that particular situation.

"States and authorized tribes should also consider the appropriateness of exemptions depending on the types of chemical, physical, and biological parameters that would be affected. For example, if a potential lowering of water quality contains BCCs, a state or authorized tribe should not apply a categorical *de minimis* exclusion because even extremely small additions of such chemicals could have a significant effect."[81] Bioaccumulative chemicals also tend to resist degradation and accumulate in several different media, such as sediments and biota, leading to the potential for

[80] Ky. Waterways Alliance v. Johnson, 540 F.3d 466, 483 (6th Cir. 2008) (quoting Ala. Power Co. v. Costle, 636 F.2d at 360). See also Greenbaum v. U.S. Envtl Prot. Agency, 370 F.3d 527, 534 (6th Cir. 2004) (quoting Ala. Power Co. v. Costle, 636 F.2d at 360).

[81] *Water Quality Standards Regulatory Revisions*, 80 Fed. Reg. 51035 (August 21, 2015).

magnified effects.[82] For this reason, the EPA did not include a *de minimis* provision for bioaccumulative parameters in 40 CFR Part 132. The EPA recommends that states and authorized Tribes also exclude bioaccumulative parameters from any *de minimis* provisions a state or authorized Tribe may choose to include.

If a state or authorized Tribe chooses to employ a *de minimis* provision in its antidegradation policy or AIMs, it should be aware of the relevant case law and carefully consider how to draft and implement *de minimis* provisions considering the legal landscape. The EPA has not found a scientific basis to identify a specific percentage of loss of assimilative capacity or lowering of water quality that could reasonably be considered insignificant for all situations.[83] The EPA recommends that any state or authorized Tribe intending to employ a *de minimis* exemption describe in its antidegradation policy or AIMs any significance thresholds for individual activities and cumulative caps, methods for establishing baseline water quality, and how it will use *de minimis* expemtions in its program.

States and authorized Tribes may also choose not to employ *de minimis* exemptions in their antidegradation programs at all. The fundamental intent of antidegradation is to maintain and protect high quality waters regardless of the significance of impact. Tier 2 reviews provide important public transparency in a state's or authorized Tribe's decision-making process for how and how much they will protect high quality waters. The EPA encourages states and authorized Tribes to consider whether more effort and resources will be required to justify a *de minimis* exemption than to complete a Tier 2 review for the activity. The Tier 2 review process need not be onerous, as states and authorized Tribes have considerable discretion to design processes not only consistent with the federal requirements, but also intended to minimize administrative burdens. The EPA encourages states and authorized Tribes to develop ways to streamline Tier 2 reviews, rather than seeking to exempt activities from review entirely.

Lastly, *de minimis* provisions that exempt "insignificant" lowering of high water quality are only appropriate for determining the need for a Tier 2 review and should not be used to exempt the application of the antidegradation policy as a whole to a waterbody. *De minimis* provisions should not be used with the implementation of Tier 1 or Tier 3 protection. Tier 1 protection requires that existing uses be maintained and protected at all times; therefore, water quality cannot be lowered below the level that protects those existing uses, even by an insignificant amount. The same holds true for Tier 3 protections. As ONRWs must be maintained and protected and no permanent degradation can be allowed in these waters, a *de minimis* provision is generally not consistent with Tier 3 protection.

[82] EPA. 1995. *Water Quality Guidance for the Great Lakes System: Supplementary Information Document (SID)*. EPA 820-B-95-001. EPA, Office of Water, Washington, DC 20460. March 1995. https://www.epa.gov/sites/default/files/2015-12/documents/1995_water_quality_guidance_for_great_lakes_sid.pdf.

[83] *Water Quality Standards Regulatory Revisions*, 80 Fed, Reg, 51034 (August 21, 2015).

4.4 OUTSTANDING NATIONAL RESOURCE WATERS - 40 CFR 131.12(a)(3)

The federal regulation at 40 CFR 131.12(a)(3), or "Tier 3" of antidegradation, requires the maintenance and protection of waters that are outstanding national resources. Tier 3 protection applies to a waterbody or waterbody segment and provides the highest level of protection by prohibiting any lowering of water quality in waters that a state or authorized Tribe identifies as ONRWs. The EPA interprets 40 CFR 131.12(a)(3) to prohibit new or increased lowerings of water quality both to ONRWs and to tributaries of ONRWs that would result in a permanent lowering of water quality in the ONRW.[84] In addition, since no degradation is allowed in these waters, all improvements in water quality after a water's classification as an ONRW must also be maintained and protected once they have been achieved. To ensure that waters with ONRW protection are maintaining their water quality, states and authorized Tribes can regularly monitor these waters and discuss protection strategies with stakeholders in the ONRW watershed.

Some states and authorized Tribes choose to specify Tier 3 protection for waters using a term other than an "ONRW." If doing so, the EPA recommends that the state or authorized Tribe ensure their regulation is clear that such waters are receiving a level of protection consistent with 40 CFR 131.12(a)(3).

States and authorized Tribes may allow some limited activities in ONRWs as long as they only result in temporary and short-term lowerings in water quality and do not result in any permanent degradation or ultimately result in the improvement of the long-term water quality.[85] For example, some activities that could result in a temporary lowering of water quality in an ONRW are the degradation that results from road repair or septic system replacement in a national park. Along with limiting duration, states and authorized Tribes may also limit lowerings to specific types of activities, such as restoration.[86] Restoration activities may result in the release of sediments or other contaminants for a short time period during construction (e.g., vegetation planting that disturbs soils, creation of instream habitat that disrupts sediments, dam removal that releases sediments), but will ultimately result in the improvement of water quality within a waterbody.

Deciding what qualifies as "temporary" and "short-term" can be difficult because of the variety of activities that might cause short-term or temporary degradation. What may

[84] EPA. 2012. *Water Quality Standards Handbook Chapter 4: Antidegradation*. EPA-823-B-12-002. EPA, Office of Water, Washington, DC 20460. https://www.epa.gov/sites/default/files/2014-10/documents/handbook-chapter4.pdf.
[85] *Water Quality Standards Regulation*, 63 Fed. Reg. 36786 (July 7, 1998).
[86] *Water Quality Standards Regulation*, 48 Fed. Reg. 51403 (November 8, 1983).

be considered short-term for one type of activity may be considered long-term for a different activity, so it is not possible to establish a universal length of time that is considered "short-term" for all activities. However, in rather broad terms, the EPA's view of "temporary" and "short-term" for a lowering in an ONRW is weeks and months, not years. Any degradation allowed in an ONRW should always be limited to the shortest time possible. If a construction activity is involved, for example, "temporary" would be the length of time necessary to construct the facility and make it operational. If a state or authorized Tribe allows temporary degradation in an ONRW (or in one of its tributaries), it should ensure the following:

- All practical means of minimizing the degradation are implemented,
- Existing uses are maintained and protected,
- All essential characteristics that make the water an ONRW are preserved, and
- No degradation is permanent.

Tier 3 is a tool states and authorized Tribes can use to ensure the maintenance and protection of the water quality in their high value waters. While states and authorized Tribes have discretion as to which waters, if any, they will provide Tier 3 protection,[87] the EPA recommends that states and authorized Tribes consider applying this protection to their highly valued waters. The EPA's regulation at 40 CFR 131.12(a)(3) provides examples of outstanding national resources (high value waters), including "waters of National and State parks" and "wildlife refuges and waters of exceptional recreational and ecological significance." A state or authorized Tribe may assign Tier 3 protection to any high value water, including waters of exceptional ecological, recreational, or cultural significance. While the water quality of a waterbody may not be at levels typically considered pristine, or even high quality, the state or authorized Tribe may want to protect a water to maintain its current water quality and preserve the social, ecological, or cultural benefit it provides.

[87] Diamond, W. EPA. 1989. EPA Designation of Outstanding National Resource Waters. Office of Water, Washington DC. https://www.epa.gov/sites/default/files/2014-10/documents/diamond-outstanding-memo.pdf

The EPA recommends states and authorized Tribes consider the following types of additional waters for ONRW protection, including, but not limited to:

- **Waters with federal protection and classification:** Wild and Scenic Rivers, National Water Trails, National Recreational Trails with on-water segments, Wilderness Areas, National Recreation Areas, National Monuments, National Wildlife Refuges, Estuarine Research Reserves; and
- **Waters with state protection classification:** State Wild and Scenic Rivers or other similar designation, State Water Trail or Waterway, Special State Classifications such as Special Trout Waters.

Ecologically significant waterbodies:
Waters that are ecologically important, unique, or sensitive, such as spawning and nursery grounds, coldwater refugia, and habitat for threatened or endangered species.

Recreationally significant waterbodies:
Waters that are highly valued waters or heavily visited waters, such as waters that attract abundant recreation and tourism, waters in national or state parks, and waters that are economic drivers to the state due to their recreational significance.

Culturally significant waterbodies:
Waters that support water-based cultural and traditional practices.

Waterbodies in National Parks, State Parks, and Wildlife Refuges:
Waters that are located in areas that have been protected in order to conserve and preserve natural and cultural resources.

To ensure states and authorized Tribes make decisions on which waters to protect as Tier 3 with as much information as possible and with the support of the community, the EPA recommends that states and authorized Tribes offer a nomination process for the public to nominate waters for Tier 3 protection. The EPA also recommends that states and authorized Tribes provide an opportunity for the public to provide input on the assignment and removal of waters for Tier 3 protection. For example, a state or authorized Tribe could outline in its regulation a nomination process in which citizens could request Tier 3 protection for specific waters, and those citizens could provide data and information for a state's or authorized Tribe's consideration. Providing such transparent processes could result in increased public support for the overall state or authorized Tribal antidegradation program. The EPA also recommends that states and authorized Tribes periodically review their list of Tier 3 waters to determine whether any changes may be appropriate.

As states and authorized Tribes assign waters Tier 3 protection, it is critical for the public to know which waters have this level of protection. 40 CFR 131.12(a)(3) states that "where high quality waters constitute an outstanding National resource… that

water quality shall be maintained and protected." Implementing programs, such as the permit authority, can only "maintain and protect" the water quality of a Tier 3 water if they know which waters the state or authorized Tribe has identified as ONRWs. In addition, it is critical for the public to have access to information on which waters the state or authorized Tribe has assigned as Tier 3 so that regulated entities are fully aware of their obligations and the basis for permit requirements. Such access will also ensure that the public has the necessary information to hold states and authorized Tribes accountable when implementing WQS. Therefore, to ensure that Tier 3 waters "shall be maintained and protected" consistent with 40 CFR 131.12(a)(3), the EPA expects states and authorized Tribes to make their Tier 3 lists publicly available. A state or authorized Tribe could provide this Tier 3 waters list to the public by adopting it into rule, posting it on a public website, or housing it in another location that is easily accessible to the public and to state or authorized Tribal programs implementing the CWA. Where a state or authorized Tribe chooses to adopt its Tier 3 waters list into rule, the EPA will review and approve or disapprove those decisions as new or revised WQS consistent with CWA Section 303(c). The EPA strongly recommends states and authorized Tribes be transparent by providing a broadly accessible Tier 3 waters list; however, the EPA recognizes that making the list broadly available may not be desired in certain unique instances. Where a state or authorized Tribe does not wish to make their list of ONRWs broadly available, it may specify in its policy or AIMs how interested parties can request information on which waters are ONRWS and then provide that information upon request. Making the list publicly available will ensure proper implementation and oversight of the antidegradation policy consistent with 40 CFR 131.12(a)(3).

4.5 ADDITIONAL PROTECTION ESTABLISHED BY STATES AND AUTHORIZED TRIBES (TIER 2½)

Several states and authorized Tribes have developed provisions that identify one or more levels of protection in between Tier 2 (high quality waters) and Tier 3 (ONRWs) as part of their antidegradation policies and AIMs. This additional level of protection is often referred to by states and authorized Tribes as Tier 2½, and waters assigned to this additional level of protection are often referred to as outstanding state or Tribal waters or exceptional state or Tribal waters.[88]

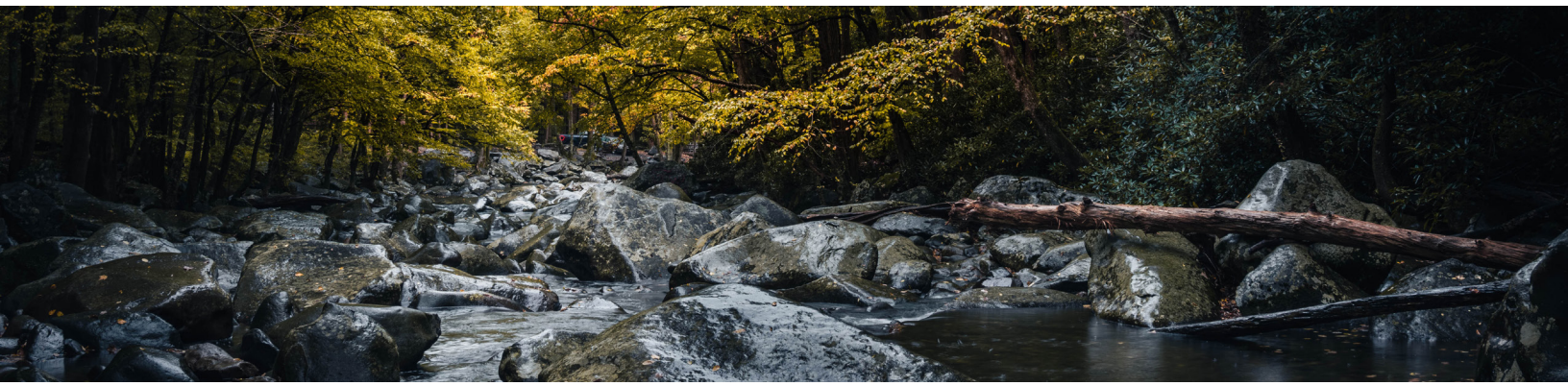
Waters assigned Tier 2½ protection receive a greater degree of protection than Tier 2 under these state or authorized Tribal provisions. The level of protection in a Tier 2½ water can take a variety of forms, but often states and authorized Tribes use it to put conditions or restrictions on discharges allowed into such waters. For example, a state or authorized Tribe may prohibit the discharge of bioaccumulative parameters into Tier 2½ waters, limit discharges only to those that maintain or improve current water quality, or require certain types of treatment for discharges before they can be released into these waters. States and authorized Tribes may also choose to require that when evaluating alternatives to degradation in Tier 2½ waters, the least degrading alternative must be implemented rather than just a less degrading alternative to the originally proposed activity. All of these examples show how states and authorized Tribes may use the Tier 2½ approach to provide a stringent level of protection beyond the requirements of Tier 2 but short of prohibiting any permanent lowering as states and authorized Tribes do for Tier 3 waters.

In using the Tier 2½ approach, states and authorized Tribes preserve the flexibility to provide a very high level of water quality protection but also to accommodate unforeseen, future economic and social development considerations. The EPA has approved antidegradation policies and state or authorized Tribally adopted AIMs that include a Tier 2½ protection level because such additional levels of protection are a more stringent application of Tier 2 provisions of the federal antidegradation regulation. As such, these policies and AIMs are permissible under CWA Section 510 unless prohibited by the state's or authorized Tribe's own law or are inconsistent with 40 CFR 131.12(a)(2).[89] If a state or authorized Tribe assigns Tier 2½ protection to some of its waters, the EPA expects states and authorized Tribes to maintain a publicly available list of those waters for transparency and ease of implementation.

[88] *Water Quality Standards Regulation*, 63 Fed. Reg. 36787 (July 7, 1998).
[89] Ibid.

4.6 THERMAL DISCHARGE REQUIREMENTS – 40 CFR 131.12(a)(4)

The federal regulation at 40 CFR 131.12(a)(4) requires that a potential water quality impairment associated with thermal discharges be handled consistently with CWA Section 316 (and by extension, the CWA Section 316 implementing regulation at 40 CFR 124.66).[90] CWA Section 316(a) allows permit writers to include alternative thermal discharge limitations ("thermal variances"[91]) if the permittee can demonstrate the limitations that would be required under CWA Sections 301 or 306 are more stringent than necessary to ensure the protection and propagation of a balanced, indigenous community of shellfish, fish, and wildlife. Most thermal effluent limitations for temperature contained in NPDES permits are based on applicable state and/or Tribal WQS for the receiving water. If a discharger is unable to comply with WQBELs at the point of discharge, applicable WQS may provide specifications for granting thermal mixing zones which allow portions of the waterbody to exceed the temperature criteria as long as the mixing zone provisions are met. As with other pollutants, mixing zones for thermal discharges may be authorized as allowed under applicable state or Tribal regulations. If the permittee is unable to comply with the applicable thermal limits at the edge of the regulatory mixing zone or at the point of discharge if a regulatory mixing zone is not appropriate, a permittee may seek relief from these standards by applying for a variance in accordance with CWA Section 316(a) and its implementing regulation. Thus, under Section 316(a) of the Act, if a proper showing is made, NPDES permits may contain less stringent thermal effluent limitations than what might otherwise be required under CWA Section 301(b)(1)(C) to implement state antidegradation requirements. States and authorized Tribes should ensure that their antidegradation policies are not interpreted or applied to prevent the inclusion of alternative thermal effluent limitations in NPDES permits under CWA Section 316(a).



[90] *Water Quality Standards Regulation*, 63 Fed. Reg. 36787 (July 7, 1998).

[91] Thermal variances are alternate thermal discharge limitations that are specifically allowed by Section 316 of the CWA. These variances differ from a WQS variance issued according to the regulation found at 40 CFR 131.14.

4.7 ANTIDEGRADATION IMPLEMENTATION METHODS

AIMs are a set of provisions (legally binding or in guidance) that describe how a state's or authorized Tribe's antidegradation policy will be executed. As stated in 40 CFR 131.12(b), all states and authorized Tribes are required to develop AIMs that are consistent with 40 CFR 131.12(a) and their own antidegradation policies. States and authorized Tribes must make these AIMs available to the public and allow the public an opportunity to provide input on the AIMs during their development and any subsequent revision (40 CFR 131.12(b)). States and authorized Tribes have considerable discretion in how they address each of the elements of antidegradation implementation listed in this section as long as their AIMs are consistent with their antidegradation policy and 40 CFR 131.12(a), and are not otherwise inconsistent with the CWA. The EPA's evaluation of consistency includes ensuring that the AIMs do not undermine the antidegradation policy. In addition to the following antidegradation implementation elements, the EPA recommends that a state or authorized Tribe also describe the scope and applicability of its antidegradation policy in its AIMs, and make clear that antidegradation protection applies to the waterbody even if the state or authorized Tribe may only enforce controls on certain types of dischargers (see section 4.3 and section 4.8). At a minimum, to be consistent with the federal WQS regulation, the EPA recommends that a state's or authorized Tribe's AIMs address the following elements:[92] (See the cross referenced sections of this chapter after each element for additional information on what a state or authorized Tribe may wish to include in its AIMs.)

1. **Tier 1 - Existing use protection:** Describe how the state or authorized Tribe will ensure the maintenance and protection of all existing uses and the water quality necessary to protect the existing uses (see section 4.2).
2. **Tier 2 - High quality water protection** (see section 4.3):[93]
    a. **Identification of high quality waters:** Describe how the state or authorized Tribe will identify high quality waters on a parameter-by-parameter basis or a waterbody-by-waterbody basis (or a combination of the two). If using the waterbody-by-waterbody approach, the state's or authorized Tribe's implementation methods must ensure that waters are not excluded from Tier 2 protection solely because water quality does not exceed levels necessary to support all of the CWA Section 101(a)(2) uses (see section 4.3.1).

[92] *Water Quality Standards Regulatory Clarifications*, 78 Fed. Reg. 54530 (September 4, 2013).
[93] See section 4.3 of this chapter for additional discussion on the elements related to high quality water protection.

b. **Analysis of alternatives and socio-economic analysis:** Describe how the state or authorized Tribe will determine whether a lowering of high water quality is necessary to accommodate important economic or social development in the area in which the waters are located through an analysis of alternatives and a socio-economic analysis (see section 4.3.2.2).

c. **Public participation and intergovernmental coordination:** Describe how the state or authorized Tribe will ensure full satisfaction of the public participation and intergovernmental coordination provisions of the state's or authorized Tribe's continuing planning process in any finding that will allow the lowering of high water quality (see section 4.3.2.3).

d. **Requirements for point and nonpoint sources:** Describe how the state or authorized Tribe will assure that the highest statutory and regulatory requirements shall be achieved for all new and existing point sources and all cost-effective and reasonable BMPs for nonpoint source control when allowing a lowering of water quality (see section 4.3.2.4 and 4.3.2.5).

3. **Tier 3 - ONRW protection:** Describe how the state or authorized Tribe will ensure the maintenance and protection of water quality for waters identified as ONRWs (see section 4.4).

4. **Thermal Discharges:** Describe how the state or authorized Tribe will ensure consistency with CWA Section 316 in cases that involve potential water quality impairment associated with thermal discharges (see section 4.5).

The EPA's Regional offices[94] are available to provide assistance and technical support to help states and authorized Tribes determine how to develop appropriate AIMs. The EPA recommends states and authorized Tribes collaborate closely with their EPA Regional office when developing or revising AIMs not only to ensure AIMs are consistent with regulatory requirements but also to discuss opportunities to improve efficiency, transparency, and streamlining of the states' and authorized Tribes' antidegradation programs.

[94] See https://www.epa.gov/wqs-tech/forms/contact-us-about-water-quality-standards-regulations-and-resources.

4.8 APPLICATION AND IMPLEMENTATION

As discussed in section 4.1.4, antidegradation is applicable to the waterbody regardless of pollution source, and as a WQS, is implemented in other CWA programs to the same extent as other WQS. States and authorized Tribes often specify that their antidegradation policies and AIMs requirements are only triggered by the request for authorizations of regulated activities that could lower water quality. Examples of regulated activities that will trigger an antidegradation review to ensure protection of Tier 1, 2, and 3 include the request for authorization of a new source of discharge regulated under the CWA and a request for a change in the discharge of an existing regulated source, if that change increases the pollutant load or includes additional new pollutants that were not previously authorized. As the federal government does not have CWA authority to regulate nonpoint sources, states and authorized Tribes determine whether and what nonpoint source activities trigger an antidegradation review. States and authorized Tribes have the discretion to apply their antidegradation policies and AIMs more broadly to activities not regulated under state or Tribal law, however this is not required by the federal WQS regulation.[95]

For CWA regulated activities, an antidegradation review is required before a permitting authority can issue the permit or license. This includes activities that require: NPDES permits (CWA Section 402), permits to discharge dredged or fill material (CWA Section 404), and federal licenses or permits subject to CWA Section 401 certification.[96] On the other hand, activities that would not lower water quality, such as a WQS triennial review or adoption of a new or revised WQS (including WQS variances) do not require an antidegradation review. These activities do not trigger antidegradation reviews because they do not directly allow for lowering of water quality. Sections 4.8.1, 4.8.2, 4.8.3, and 4.8.4 of this chapter provide some guidance for implementing antidegradation policies and AIMs for each of these types of activities. States and authorized Tribes retain discretion to enforce the requirements of their antidegradation policies and AIMs for other types of activities (such as nonpoint source controls) beyond those controls already required under a state or authorized Tribal regulation.

[95] *Water Quality Standards Regulation*, 63 Fed. Reg. 36780 (July 7, 1998).

[96] EPA's *Response to Comments, Water Quality Standards Regulatory Revisions, Chapter 3 Issue Category: Antidegradation*, Docket # EPA-HQ-OW-2010-0606, August 2015, pg. 3-201, pg. 3-212, https://www.regulations.gov/document/EPA-HQ-OW-2010-0606-0344.

4.8.1 CWA Section 402: NPDES Permits

CWA Section 402 establishes the NPDES permit program, which addresses water pollution by regulating point sources that discharge pollutants to waters of the United States. The NPDES regulation includes two types of effluent limits to control pollutant discharge. The first are technology-based effluent limits (TBELs). TBELs require a minimum level of effluent quality that is known to be attainable using demonstrated technologies. TBELs are standardized across an industrial category. The second type of effluent limits are WQBELs, which are derived from the applicable WQS. The NPDES regulation requires that WQBELs derive from and comply with all applicable elements of WQS, including designated uses, water quality criteria, and the state's or authorized Tribe's antidegradation policies and any state or Tribal legally adopted AIMs (40 CFR 122.44(d)). CWA Section 301(b)(1)(C) requires that NPDES permits include any effluent limitations necessary to meet WQS, even if they are more stringent than technology-based requirements. Where including technology-based requirements in an NPDES permit would not be sufficient to meet WQS in the receiving water, the permit writer develops WQBELs to include in the permit to ensure that WQS are met in the receiving water.

To meet the antidegradation regulation for Tier 1, which applies to all waters of the United States, effluent limits must, at a minimum, protect the existing uses of the waterbody. If the state or authorized Tribe determines that the waterbody has existing uses requiring more stringent protection than provided by the designated uses, the WQBELs must be adjusted to protect the existing uses. In addition, where such existing uses are "presently being attained," the EPA's regulation at 40 CFR 131.10(i) requires that the state or authorized Tribe revise its WQS to reflect the uses actually being attained (see Draft Chapter 2 of this Handbook for more information on designated uses). If a waterbody is impaired[97] for a parameter that would be present in the proposed discharge, the permit writer must identify any relevant TMDLs to ensure that the effluent limits derived from the applicable water quality criteria are consistent with any available wasteload allocation for the discharge.[98]

A new or expanded discharge may trigger an antidegradation Tier 2 review. If the state or authorized Tribe uses a parameter-by-parameter approach, they would need to determine whether the receiving waters have high water quality for any parameters that could be affected by the discharge. If so, a Tier 2 review would be needed. If not, the permit could proceed without a Tier 2 review. If the state or authorized Tribe uses a waterbody-by-waterbody approach, they would need to determine if the state or authorized Tribe maintains a list of Tier 2 waters, and if so, if the receiving water has been identified as a Tier 2 water. If the state or authorized Tribe does not maintain a Tier 2 list, then the state or authorized Tribe would need to conduct a holistic review of the receiving water to determine whether it should be identified as a Tier 2 water. If the receiving water is identified as a Tier 2 water, then a Tier 2 review would be needed before the permit is issued. If the receiving water is not identified as a Tier 2 water, then the permit issuance could proceed without a Tier 2 review.

After the Tier 2 review is conducted for new or expanded facilities or discharges, the state or authorized Tribe would make a decision on whether the proposed lowering of high water quality is necessary to accommodate important economic and social development in the area in which the waters are located. Based on the Tier 2 review, the state or authorized Tribe could decide to allow the activity to lower high water quality as proposed, allow the activity to lower high water quality to a lesser extent than proposed (e.g., for instance if a less degrading practicable alternative is identified), or not allow the proposed activity to lower high water quality and require maintenance of the current high water quality (e.g., because the proposed lowering of high water quality was not *necessary*, not *important*, or both). The permit writer will need to make sure that the permit reflects the state's or authorized Tribe's decision regarding the extent of degradation allowed. The permit writer may also include additional requirements in the NPDES permit for that discharge to meet other applicable CWA requirements. For more information about the components of a Tier 2 review, see section 4.3.1 of this chapter.

[97] I.e., those waters that do not meet the WQS set for them, even after point sources of pollution have installed the minimum required levels of pollution control technologies.

[98] 40 CFR 122.44(d)(1)(vii)(B).

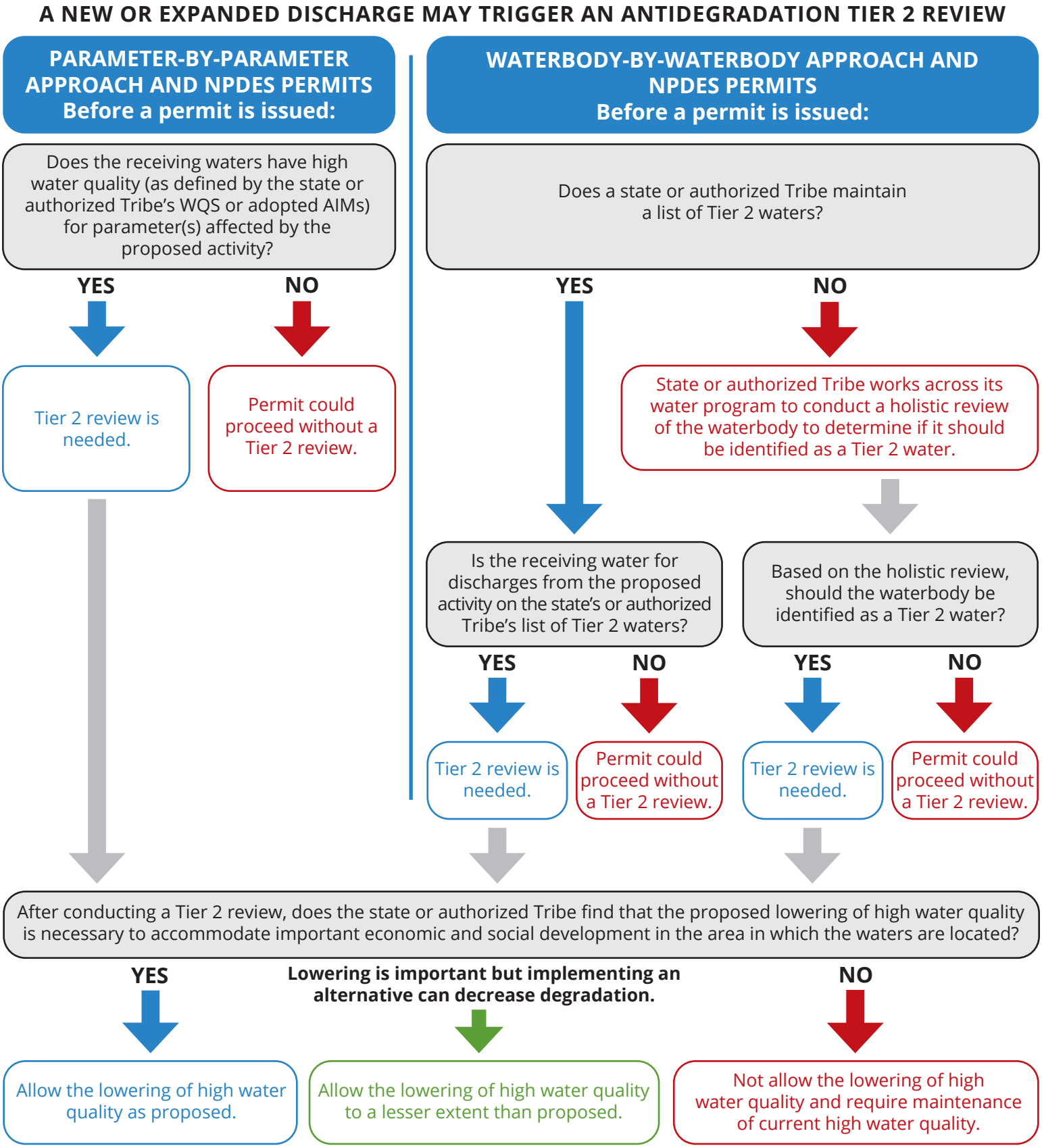


Figure 4-8 Determining whether a Tier 2 review is needed before issuing an NPDES permit using either the parameter-by-parameter approach or the waterbody–by–waterbody approach. A new or expanded discharge may trigger the need to complete a Tier 2 review consistent with 131.12(a)(2) before issuing a permit. This will be dependent on whether the waterbody is classified as a Tier 2 water using either the parameter-by-parameter approach or the waterbody-by-waterbody approach. If identified as a Tier 2 water, the Tier 2 review will help to determine how much degradation may occur in the waterbody.

Where a waterbody is identified as an ONRW, or tributary, wetland, lake, or other waterbody upstream of an ONRW, the permit writer must consult the state's or authorized Tribe's antidegradation policy and AIMs to determine whether it is appropriate to issue an NPDES permit to the waterbody, and if so, to inform the permit requirements and limits of an NPDES permit issued to Tier 3 waters (e.g., temporary degradation that results in restoration). In some cases where a waterbody has Tier 3 protection, the permit writer might find that it is not possible to issue a permit for the proposed activity.

For issuing permits for waterbodies with additional levels of protection, such as Tier 2½, the permit writer should consult the state's or authorized Tribe's antidegradation policy and AIMs.

Regardless of the tier(s) involved, the EPA recommends that the permit writer clearly explain the analysis of the antidegradation review and how it affects the calculation of WQBELs in the fact sheet or statement of basis for the NPDES permit. This is consistent with the requirements at 40 CFR 124.7, 124.8 and 124.56 and will assist the public in understanding the antidegradation analysis and decisions during the public notice of the NPDES draft permit. Most states have been authorized by the EPA to implement the NPDES program through a process defined by CWA Section 402(b) and 40 CFR Part 123, and they are responsible for issuing their own NPDES permits.[99] Where states and Tribes are not authorized to implement the NPDES program, the EPA implements the NPDES program, including issuing NPDES permits.

For states that have been authorized to administer the NPDES program, the EPA still retains an oversight role. If a state issues an NPDES permit that is inconsistent with its own antidegradation policies and/or state adopted AIMs, that permit could be subject to a discretionary EPA objection under CWA Section 402(d) and 40 CFR 123.44 or subject to a citizen challenge.

Where the EPA is responsible for issuing an NPDES permit,[100] the EPA will, consistent with the NPDES regulation, add any additional or more stringent effluent limitations required to ensure consistency with the state's or authorized Tribe's WQS (including the state's or authorized Tribe's antidegradation policies and state or Tribally adopted AIMs). Through the CWA Section 401 certification process, the state or authorized Tribe has the opportunity to require further permit conditions that it deems necessary to ensure consistenty with WQS or may deny certification of a permit if it is not consistent with the state's or authorized Tribe's WQS (see section 4.8.3).

More information for permit writers can be found in the *NPDES Permit Writers' Manual*, Chapter 6, September 2010 edition.[101]

[99] https://www.epa.gov/npdes/npdes-state-program-information.

[100] The EPA issues all NPDES water quality permits in Massachusetts, New Hampshire, New Mexico, District of Columbia, United States territories, and on federal and Tribal lands.

[101] EPA. 2010. *NPDES Permit Writers' Manual.* EPA 833-K-10-001. EPA, Office of Water, Washington, DC 20460. https://www.epa.gov/sites/production/files/2015-09/documents/pwm_2010.pdf. For questions regarding anti-backsliding, please reference Chapter 7 of the *NPDES Permit Writers' Manual.*

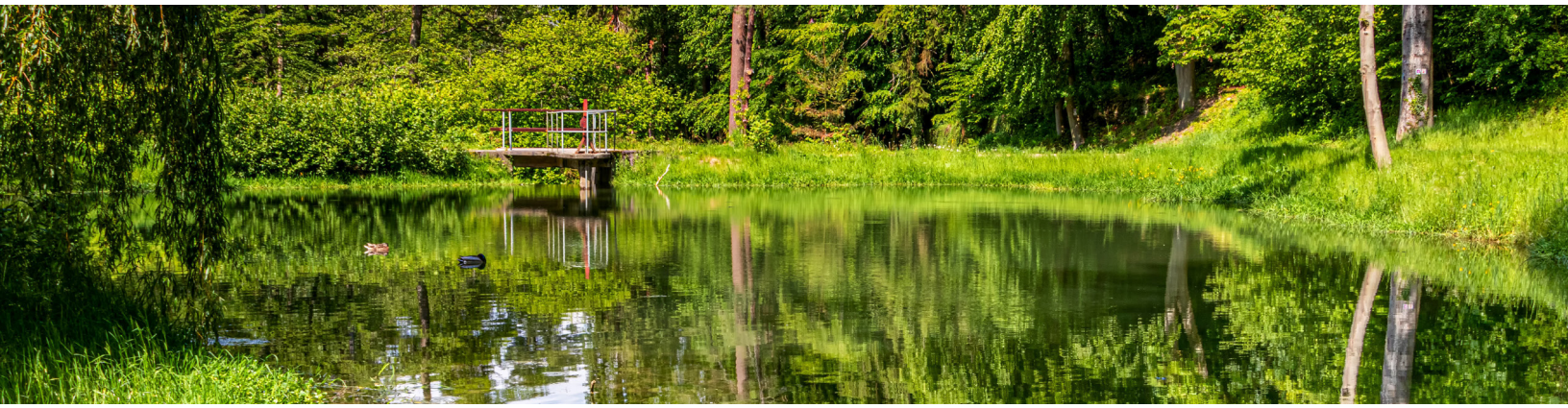
4.8.1.1 General Permits

Many activities regulated under NPDES are authorized under general permits (as opposed to an individual permit). A general permit is an NPDES permit issued under 40 CFR 122.28 authorizing a category of discharges under the CWA within a geographical area (40 CFR 122.2). 40 CFR 122.28 contains the regulation for general permits, including the specific areas and sources that can be covered by a general permit.

A general permit can streamline the permitting process for entities seeking coverage for specific activities, provided that the facility meets the requirements for coverage under the general permit. After a general permit has been issued, facilities seeking to be covered under the general permit typically submit a notice of intent (NOI) to the permitting authority. The permitting authority may determine that a general permit is not appropriate for a facility for which coverage is sought and can require the facility to apply for an individual permit.[102] Like WQBELs for individual NPDES permits, WQBELs in general permits must derive from and comply with applicable WQS, including antidegradation policies and state or Tribally adopted AIMs. States and Tribes authorized to administer the CWA Section 402 program have discretion to decide how best to ensure the requirements of their antidegradation policies and AIMs are met when issuing general permits. Some states have used the following approaches to meet antidegradation requirements when issuing general permits:

- The state completes an antidegradation review for the general permit at the time of issuance,
- The state includes requirements in the general permit to ensure the receiving water is protected consistent with its antidegradation policies and AIMs, or
- The state specifies in the general permit that if an antidegradation review is warranted for the receiving water, the state will conduct one when an entity submits an NOI for coverage under the general permit.

Any of these approaches can be used as long as they are implemented in a manner consistent with the WQS regulation at 40 CFR Part 131, including the public participation requirement of 40 CFR 131.12(a)(2), and the NPDES regulation at 40 CFR Part 122.



[102] EPA. 2010. *NPDES Permit Writers' Manual*. EPA 833-K-10-001. EPA, Office of Water, Washington, DC 20460. https://www.epa.gov/sites/production/files/2015-09/documents/pwm_2010.pdf.

4.8.2 CWA Section 404: Dredged or Fill Material Permits

CWA Section 404 establishes a program[103] to regulate the discharge of dredged or fill material into waters of the United States. Examples of activities regulated under this program include discharges of fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and mining projects. CWA Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from CWA Section 404 permit requirements (e.g., certain farming and silviculture activities) pursuant to CWA Section 404(f).

The Corps is responsible for the day-to-day administration of the CWA Section 404 program, including processing Section 404 permits, except where a state or Tribe has been approved by the EPA and has assumed administration of the permitting program. The Corps uses the Section 404(b)(1) Guidelines, environmental criteria promulgated by the EPA in coordination with the Corps, in evaluating permit applications under CWA Section 404. The Guidelines require, among other things, that a permit authorize only the least environmentally damaging practicable[104] alternative, and that a discharge that would cause or contribute to "significant degradation" of the aquatic environment not be permitted.[105]

A literal interpretation of 40 CFR 131.12(a)(1) could prevent certain physical modifications to a waterbody that are clearly allowed by CWA Section 404. However, the EPA's view is that since Congress included CWA Section 404, it intended some permits for dredged or fill material to be granted within the framework of the CWA. In the context of fill of wetlands and the antidegradation Tier 1 requirement to maintain and protect existing uses, the EPA interprets 40 CFR 131.12(a)(1) to be satisfied if the CWA Section 404 discharge does not result in "significant degradation" of the aquatic environment as defined in the CWA Section 404(b)(1) Guidelines at 40 CFR 230.10(c).[106]

The CWA Section 404(b)(1) Guidelines convey that the following effects can contribute to the significant degradation of the waters of the United States:

> *"... significant adverse effects [individually or collectively] on (1) human health or welfare, including, but not limited to, effects on municipal water supplies, plankton, fish, shellfish, wildlife, and*

[103] https://www.epa.gov/cwa-404/section-404-permit-program.

[104] Defined specifically for the CWA Section 404 program at 40 CFR 230.3(l) as "The term practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." Note that for purposes of antidegradation, the WQS regulation includes a specific definition of "practicable" at 40 CFR 131.3(n) (See section 4.3.2.2).

[105] See 40 CFR 230.10(a-d). A state or Tribal program evaluates permit applications utilizing state or Tribal environmental review criteria that the EPA has approved as consistent with and no less stringent than the 404(b)(1) guidelines

[106] 40 CFR Part 230. https://www.epa.gov/sites/production/files/2015-03/documents/cwa_section404b1_guidelines_40cfr230_july2010.pdf.

special aquatic sites (e.g., wetlands); (2) on the life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, or spread of pollutants or their byproducts beyond the site through biological, physical, or chemical process; (3) on aquatic ecosystem diversity, productivity, and stability, including, but not limited to, loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce wave energy; or (4) on recreational, aesthetic, and economic values."

To determine whether existing uses are protected (Tier 1), states and authorized Tribes may refer to the CWA Section 404(b)(1) Guidelines to assess the potential for "significant degradation" from discharges of dredged or fill material. States and authorized Tribes may also, at their discretion, adopt stricter requirements for dredge and fill activities in their own antidegradation policies and state or authorized Tribally adopted AIMs, just as they may adopt any other requirements more stringent than federal law requires pursuant to CWA Section 510 unless prohibited by their own state or Tribal law.

States and authorized Tribes must provide the same level of Tier 2 and Tier 3 protection for jurisdictional wetlands as is afforded other waters of the United States, consistent with 40 CFR 131.12. However, states and authorized Tribes may determine that implementation of such protections may need to vary depending on the waterbody type. Please refer to sections 4.3, 4.4, and 4.7 for additional discussion on the implementation of each of these levels of protection.

4.8.3 CWA Section 401 Certification

Under CWA Section 401, a federal agency cannot issue a permit or license for an activity that may result in a discharge into waters of the United States until the state or authorized Tribe[107] where the discharge would originate has granted or waived CWA Section 401 certification. Where a Tribe does not have the authority to issue 401 certifications, the EPA will issue the 401 certifications for activities discharging to waters within the Tribe's jurisdiction. States and authorized Tribes (or the EPA) make their decisions to deny, certify, or condition federal permits or licenses based on compliance with "water quality requirements,"[108] which include but are not limited to EPA approved WQS. Examples of federal licenses and permits subject to CWA Section 401 certification include CWA Section 402 NPDES permits issued by the EPA, CWA Section 404 permits for discharge of dredged or fill material (issued by the Corps), FERC hydropower licenses, and Rivers and Harbors Act Section 9 and Section 10 permits for activities that have a potential discharge in navigable waters (issued by the Corps). Many states

[107] In this discussion of CWA Section 401, the term "authorized Tribe" refers to a Tribe that has been authorized to administer CWA Section 401. Under 40 CFR 131.4(c), a Tribe that is eligible to administer WQS is likewise eligible to administer CWA Section 401 unless it specifically declines that authority.

[108] 40 CFR 121.1.

and Tribes rely on CWA Section 401 certification to ensure that point source discharges from federally licensed or permitted activities, like that of dredged or fill material, into a water of the United States do not prevent compliance with water quality requirements. In addition, CWA Section 401 certification may be a state's or authorized Tribe's only opportunity to review and appropriately condition or object to the federal permitting or licensing of a project that may result in a discharge into waters of the United States, including discharges that could violate antidegradation requirements.

In acting on a request for certification, the state or authorized Tribe (or the EPA) will then need to ensure that the federal permit or license will comply with water quality requirements, including that it follow its antidegradation policy and adopted AIMs for all tiers of applicable protection. For example, in the case of Tier 2 protection, the state or Tribe (or the EPA) needs to make sure that the federal license or permit appropriately protects assimilative capacity or that a Tier 2 review has been conducted to determine that lowering water quality in a high quality water is necessary to accommodate important economic or social development in the area in which the waters are located. The state or authorized Tribe could either conduct the Tier 2 review themselves or evaluate a Tier 2 review completed by the licensing or permitting agency. The federal agency needs to incorporate into it's license or permit any conditions the state or authorized Tribe deems necessary to ensure compliance with water quality requirements, including antidegradation

For additional information about CWA Section 401 certifications, see Chapter 8 of this Handbook, section 8.5.3.

4.8.4 CWA Sections 303(d) and 305(b) Assessment, Listing, and TMDLs

Under CWA Section 303(d) and the EPA's implementing regulation (40 CFR 130.7), states and Tribes authorized to administer the CWA Section 303(d) program are required to develop lists of impaired and threatened waters every two years. These lists, commonly referred to as "303(d) lists," identify waters for which technology-based regulations and other required controls are not stringent enough to meet the applicable WQS. Pursuant to CWA Section 303(d) and the EPA's implementing regulation, states, and Tribes authorized to administer the CWA Section 303(d) program must establish priority rankings for waters on the list and develop TMDLs for these waters. A TMDL includes a calculation of the maximum amount of a pollutant that can be present in a waterbody and still meet WQS.

Antidegradation policies and adopted AIMs are relevant to the administration of CWA Section 303(d) programs because CWA Section 303(d) and the EPA's implementing regulation (40 CFR 130.7(b)(1)) require states and Tribes authorized to administer the CWA Section 303(d) program to identify on their 303(d) lists waters that are not meeting any applicable water quality standard. The EPA's implementing regulation

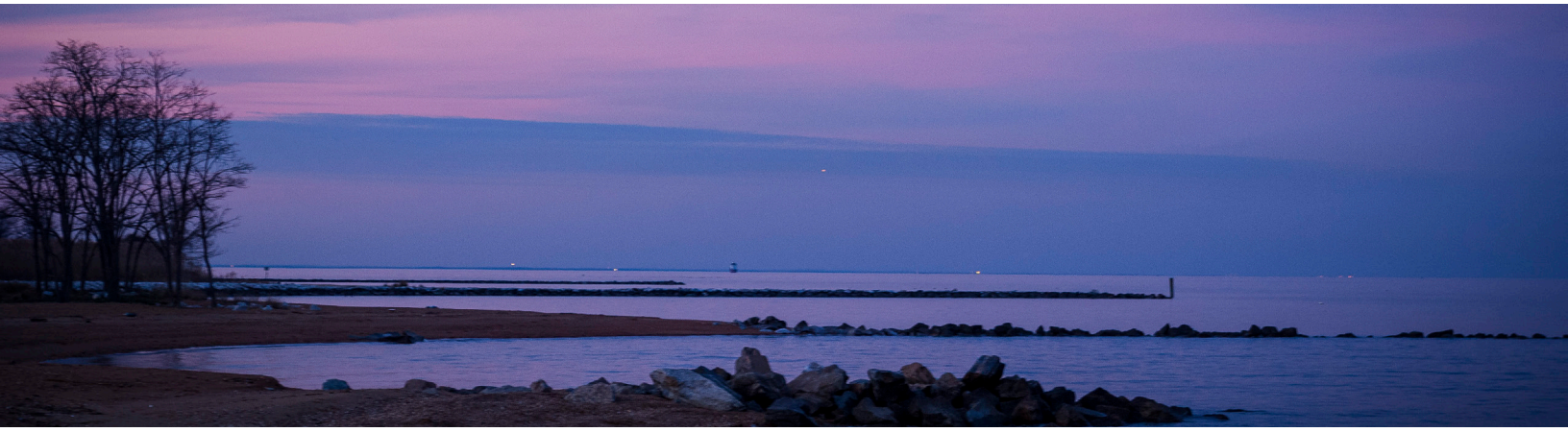
specifies that "applicable water quality standards" refer to criteria, designated uses, and antidegradation requirements (40 CFR 130.7(b)(3)).

For example, it is possible that available data and information for a waterbody identified by a state or authorized Tribe as an ONRW indicate degradation in water quality despite its Tier 3 level protection. If those data and information indicate that the water quality is degraded and thus does not meet the state's or authorized Tribe's CWA effective antidegradation policy that the "water quality shall be maintained and protected," the water must be included on the 303(d) list, even if pollutant concentrations do not exceed applicable water quality criteria (40 CFR 130.7(b)(1); 40 CFR 103.7(b)(3)).

Under CWA Section 305(b) and the EPA's implementing regulation (40 CFR 130.8), states[109] are required to prepare reports every two years on the water quality of all navigable waters, a subset of which are waters that belong on the state's 303(d) lists. To efficiently meet the reporting requirements for both CWA Section 303(d) and 305(b), the EPA encourages states to submit a single consolidated report (an Integrated Report). The EPA encourages states to use a consolidated assessment and listing methodology to develop their Integrated Reports. This methodology describes the state's approach to assessing water quality against CWA goals and WQS including antidegradation considerations.

As discussed above, state and tribes authorized to administer the CWA Section 303(d) program collectively are required to develop TMDLs for waters on their Section 303(d) lists. TMDLs must include a description of the applicable water quality standards, including designated uses(s) of the waterbody, the applicable numeric or narrative water quality criterion, and the antidegradation policy (40 CFR 130.7(c)(1)). EPA needs this information to review the loading capacity determination, and the load and wasteload allocations, which are required by regulation.[110]

For additional information about CWA Sections 303(d) and 305(b) assessments, listings, and TMDLs, see Chapter 7 of this Handbook.



[109] Tribes are not required to submit CWA Section 305(b) reports. See 40 CFR 130.4(a); *Indian Tribes: Water Quality Planning and Management*, 54 Fed. Reg. 14354, 14357 (April 11, 1989).

[110] Guidelines for Reviewing TMDLs Under Existing Regulations Issued in 1992. May 20, 2002. https://www.epa.gov/tmdl/guidelines-reviewing-tmdls-under-existing-regulations-issued-1992