

**EPA COMMENTS AND REGOMMENDATION ON  
ARKANSAS'S DRAFT  
ANTIDEGRADATION IMPLEMENTATION METHODS  
2020 EDITION**

**Proposed by  
Arkansas Energy and Environment  
Division of Environmental Quality  
Office of Water Quality**

**U.S. EPA REGION 6  
WATER DIVISION**

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## DEFINITIONS

**Alternatives Analysis:** A structured evaluation of the practicability of less- and non-degrading alternatives to an activity likely to cause lowering of water quality.

**EPA comment:** *In previous comments, the EPA noted that the requirement found in 40 CFR 131.12(a)(2)(ii) refers to an evaluation of a “...range of practicable alternatives...”, rather than evaluating whether an alternative is practicable. This is important because this analysis should be comparing the different options that have already been determined to be practicable and that lessen or prevent degradation. Thus, the EPA again recommends structuring the alternatives analysis definition to compare different practicable options that prevent or lessen degradation.*

**Baseline Water Quality (BWQ):** The level of water quality that is used to establish the assimilative capacity within a waterbody. BWQ will be determined the first time that an analysis of significant degradation is done for authorization of a proposed new or expanded discharge is considered for authorization after {STARTING DATE}. For a new authorization, the BWQ shall be representative of the water quality at or immediately upstream from a proposed discharge. For an expanding discharge, the BWQ shall include the levels of pollutants already permitted to be discharged at maximum design flow. Once established, BWQ is a fixed quantity expressed as a concentration.

**EPA comment:** *Recommend replacing “the first time that an analysis of significant degradation is done” with “the first time a new or expanded discharge is considered.” The current language is problematic because BWQ needs to be determined to track the use of assimilative capacity by nonsignificant degradation. “Nonsignificant” degradation needs to be tracked so that it is clear when over 10% of the assimilative capacity has been cumulatively utilized in the water body and a Tier 2 review is needed for the next activity. EPA also recommends replacing “For an expanding discharge” with “For an expanding authorization, that was last authorized prior to [month, year]” so that it is clear that this is only accounting for expansions of discharges that were approved prior to the establishment of these AIMs.*

**Existing Activity:** NPDES permits, state permits, any activity having a CWA § 401 certification, or any activity that threatens the most sensitive use or results in significant degradation, at the time the baseline water quality is determined.

**EPA comment:** *Please clarify how the state plans to determine if an activity results in significant degradation if the BWQ hasn’t been determined yet. Does the state only intend this reference to significant degradation to be defined in terms of baseline water quality, or defined more broadly? Is this phrase meant to be synonymous with the definition of “significant lowering of water quality”? If so, please clarify that in the definition for “significant lowering of water quality”, if not, please include a definition of “significant degradation”.*

**Existing Use Protection (EUP):** All parameters of all waters are designated for all uses as per Rule 2.302 unless the use has been removed following APC&EC Rule 2.306.

**EPA comment:** *This definition does not define what existing use protection is but rather refers to Rule 2.302 that describes designated uses that may apply to specific waters and Rule 2.306 that describes the procedures for removing those uses. The definition should be revised to include the following: Maintenance and protection of existing instream water uses and the level of water quality necessary to protect existing uses.*

**High Quality Protection (HQP):** For the uses listed in CWA 101(a)(2), all parameters of waters that are not defined as Tier 1 or 3 and have water quality that is better than water quality criteria.

**EPA comment:** *This revised definition does not appear to be functionally different than the prior definition of “High Quality Water (HQW).” This definition should be revised to clarify how the state intends to apply antidegradation protections to CWA Sec. 101(a)(2) uses. The EPA recommends that the ADEQ describe how protection for high quality waters includes a review process for using assimilative capacity. We also recommend including the following into this provision: Protection and maintenance of parameters that have water quality that exceeds levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water. Any significant lowering of water quality for these parameters requires the completion of a Tier 2 review prior to authorization.*

**Parameter-by-Parameter Basis:** The review of the pollutants in a waterbody by assessing the level of each pollutant of concern, as opposed to assessing the overall condition of a waterbody, for the purpose of determining the level of antidegradation review applicable to the waterbody.

**EPA comment:** *Strongly recommend that the ADEQ expand this definition to add: “When an activity is proposed, the state determines which parameters represent water quality that is better than the applicable criteria developed to protect the CWA section 101(a)(2) uses. The water body is then considered high quality for those parameters. Using this method, a water body can be tier 2 for some parameters and tier 1 for others. Determinations of protection are made at the time of the antidegradation review.”*

**Water Quality Criteria (WQC):** Chemical, physical, and biological elements of Water Quality Standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use.

**Proposed EPA comment:** *The EPA recommends replacing this definition with the definition of water quality criteria from federal regulation: “Criteria are elements of State water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated use.”*

**Waterbody-by-Waterbody Approach:** The review of the pollutants in a waterbody by assessing the overall or combined levels of the pollutant of concern as opposed to assessing the level of each pollutant of concern in a waterbody for the purpose of determining the level of protection applicable to the waterbody.

**EPA comment:** *This approach should/can consider more than just the pollutant concentrations. It should be a holistic assessment. The EPA recommends replacing the current definition with this: **Water body-by-Water body Approach:** An approach for determining whether a water body/waterbody segment is high quality based on a judgment of the overall quality of the water body considering a variety of factors. A judgment of quality is made on a weighted assessment of chemical, physical, biological, and other applicable information. Waters can be identified as high quality even if criteria for certain pollutants are not attained or if some designated uses are not fully supported. The presence of a water body on the CWA section 303(d) list for one CWA 101(a)(2) use does not automatically exclude it from potentially being identified as a Tier 2 water. The quality of the water body can either be determined before or at the time of the antidegradation review.*

**Waters of the State:** All streams, lakes, marshes, ponds, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion of the state. A.C.A. § 8-4-102 (2017). ~~For the purposes of this Antidegradation Implementation Methodology, waters of the state include those waters meeting the federal definition of Waters of the United States (WOTUS) for Clean Water Act purposes.~~

**EPA comment:** *Strongly recommend that the reference the last sentence in this provision be deleted. Federal regulations at 40 CFR 131.12 do not limit the state's obligation to protecting only those waters defined as waters of the U.S. The Arkansas Code Annotated (A.C.A. § 8-4-102 et seq.)) states that "waters of the state" means all streams, lakes, marshes, ponds, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion of the state." Given that Arkansas's Water Quality Act provides a more expansive definition of "waters of the state," although federal jurisdiction is limited to waters of the U.S., federal regulations do not prohibit the state from applying WQS to all waters of the state. As this provision is currently written, many waters of the state that may be critical to maintaining biological integrity and preserving water quality throughout the state would be excluded from protections in conflict with 40 CFR 131.12 and the provisions in Rule 2.102, and 2.501 referring to applicability to all waters at all times.*

## INTRODUCTION

No comments are necessary for this section.

## TIER PROTECTION LEVELS

An Antidegradation Policy provides a means for maintaining and protecting surface water quality by requiring all activities with the potential to affect water quality to undergo review and 153 a comment period prior to any decision to approve or deny the activity. In compliance with 40 CFR § 131.12, implementation procedures for Arkansas's Policy identify levels of antidegradation protection (tiers), determination of baseline water quality (BWQ), assessing and determining extent of acceptable lowering of water quality in a high quality water, and identification of less-degrading or non-degrading alternatives. A waterbody's tier identification may be completed using a parameter-by-parameter or waterbody-by-waterbody approach. Arkansas is implementing a hybrid approach in that Tier 1 and Tier 2 protection will be identified on a parameter-by-parameter basis and Tier 3 protection will be identified on a waterbody-by-waterbody basis (Figure 1).

**Tier 1: Existing Use Protection (EUP)** the basic protection afforded to all parameters of all waterbodies regardless of current water quality, which is that existing uses will be maintained and protected. ~~EUP applies to those waters meeting the definition of WOTUS as defined for purposes of the federal Clean Water Act.~~

**EPA comment:** *The effect of the revised Existing Use Protection (EUP) provision appears to limit minimum existing use (Tier 1) protection to only waters of the U.S. as they are defined under current federal regulations. As noted in previous comments, by specifying that existing use protections only apply to waters of the U.S. this provision excludes protections to all other waters of the state. Arkansas Code Annotated (A.C.A. § 8-4-102 et seq.) states that "waters of the state" means all streams, lakes, marshes, ponds, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion of the state.. Federal regulations at 40 CFR 131.12 do not limit the state's obligation to protecting only those waters defined as waters of the U.S., and given that the state's Water Quality Act provides a more expansive definition of "waters of the state," EPA recommends deleting the second sentence limiting application of Tier 1 protections to only waters of the U.S., to the exclusion of other waters of the state.*

**Tier 2: High Quality Protection (HQP)** applies to WOTUS for protection of baseline water quality which is better than the water quality criteria. An activity that proposes significant lowering of water quality would require a demonstration that the lowering of water quality is necessary and Tier 1 protection is ensured. Tier 2 is the default protection for all parameters of all waters, with the exception those parameters or waters that have already been determined to be Tier 1 or Tier 3.

**EPA comment:** *An activity that proposes significant lowering of water quality would require more than a demonstration that the lowering of water quality is necessary, and that Tier 1 protection is ensured. There are additional steps, including a socio-economic demonstration, assurances of proper pollution control measures, and stakeholder participation. EPA*

*recommends revising this definition, as indicated in the track changes above, to clarify that the steps for the demonstration are detailed later in this document.*

*As noted in our comment on EUP, the intent of the revisions to the High-Quality Protection provision appears to be to limit Tier 2 protection to only waters of the U.S. as defined under current federal regulation. As noted in those comments, by specifying protections for Tier 2/high-quality waters defined as waters of the U.S., this provision excludes protections to all other waters of the state (See ACA §8–4–102 et seq.). Although federal jurisdiction is limited to waters of the U.S., federal regulations do not prohibit the state from applying WQS to all waters of the state. As currently written, many waters of the state, such as wetlands and others that may be critical to maintaining biological integrity and preserving water quality throughout the state would be excluded from protections in conflict with the provisions in Rule 2.102, and 2.501 referring to applicability to all waters at all times. At a minimum, the EPA recommends replacing the reference in the first sentence limiting application of Tier 2 protections to only waters of the U.S., with the phrase “waters of the state.”*

**Tier 3: Outstanding Resource Waters (ORW)** applies to waterbodies listed as an Outstanding Resource Water (ERW, ESW, and NSW) in APC&EC Rule 2. Tier 3 review is required for those waters encompassed by APC&EC Rule 2.203 and 40 CFR § 131.12(a)(3).

## **TIER PROTECTION LEVELS AND ANTIDegradation EVALUATION**

### **A) Tier 1- Existing Use Protection (EUP) Evaluation**

~~Review of~~ Tier 1 review of waters of the state (ACA §8–4–102 et seq.) will be ~~for~~ performed for all parameters of those parameters all WOTUS of WOTUS that are not attaining water quality criteria, including those in ~~It will also include certain canals/ditches, storm water control structures, and~~ structures purposefully created for effluent conveyance with an existing use attained on or after November 28, 1975, whether or not they are included in the water quality standards. For Tier 1 protection waters, the Antidegradation Policy is implemented through the state’s NPDES Permit Issuance Process, including applicable major modifications (See Section 5). New or expanding activities are not allowed to discharge pollutants that may cause or contribute to impairment of a designated or existing use, violation of water quality criteria, or increase pollutant loading to a § 303(d) listed water.

Tier 1 review allows activities to occur according to applicable water quality standards without social and economic analyses. Other statutory, regulatory, or policy (CPP) requirements for the development of appropriate effluent limits and other permit requirements are still applicable.

**EPA comment:** *Per our prior comments, the intent of the revised Existing Use Protection provision here appears to limit minimum existing use (Tier 1) protection to only waters of the U.S. as defined in current federal regulation. By specifying that existing use protections only apply to waters of the U.S., this provision excludes protections to all other waters of the state*

(See ACA §8–4–101 et seq.). The EPA recommends that the ADEQ specify that the review of Tier 1 waters and reference the definition of waters of the state.

The EPA also recommends the revisions included in track changes above, including deleting the phrase “that are not attaining water quality criteria.” Tier 1 review is performed for all parameters, since it is a part of the Tier 2 review as well. For all WOTUS the state needs to assure that existing uses are protected.

## B) Tier 2- High Quality Protection (HQP) Evaluation

~~Review of A~~ Tier 2 ~~review~~waters will be performed for all parameters that are attaining water quality criteria in all waters of the state other WOTUS. By definition, ~~at the~~in high quality waters ~~protection level, where~~the baseline water quality (BWQ) is better than the minimum water quality criteria for one or more water quality parameters. In an evaluation of Tier 2 waters ~~attain water quality criteria for a pollutant of concern. Awhere a~~ significant increase (> 10% of total assimilative capacity) in cumulative pollutant loading is being evaluated, ~~which includes all existing discharges and activities, are shall~~ required to be considered as part of a demonstration that the lowering of water quality is necessary~~justified~~ to accommodate important economic or social development in the area in which the waters are located. The demonstration shall include the following items:

**EPA comment:** As noted in our comments on the revised Existing Use Protection provision, this provision also appears to limit (Tier 2) protection to only waters of the U.S. as defined under current guidance. Again, we recommend that this provision specify that Tier 2 protections extend to all other waters of the state (See ACA §8–4–102 et seq.). As noted previously, this provision would allow many waters of the state, such as wetlands and others that may be critical to maintaining biological integrity and preserving water quality throughout the state to be excluded from protections in conflict with the provisions in Rule 2.102, and 2.501 referring to applicability to all waters at all times.

The EPA recommends a number of revisions to the proposed language, included in track changes above. Those recommended changes include deleting the phrase “which includes all existing discharges and activities.” It is unclear whether this refers to the baseline water quality or to the cumulative pollutant loading. EPA recommends deleting this phrase to avoid confusion as “cumulative pollutant loading” captures the idea of a cumulative cap and the requirements for determining BWQ are specified elsewhere. If the ADEQ would like to retain this phrase, it would require clarifying whether this phrasing is referring to the concept of baseline water quality or cumulative pollutant loading.

The EPA also recommends replacing the term “justified” with the term “necessary” because it implies the need to complete an alternatives analysis and also indicates that there are no other practicable options to the lowering of water quality, consistent with 40 CFR 131.12. The use of the word “justifies” does not imply the necessity to lower water quality, and therefore the use of this term here could potentially be interpreted to be inconsistent with 40 CFR 131.12. In addition,



40 CFR 131.12(b) states, “The State shall develop methods for implementing the antidegradation policy that are, at a minimum, consistent with the State’s policy and with paragraph (a) of this section”. The state’s antidegradation policy includes the following language: “that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located”. EPA recommends using this language to ensure consistency with the state’s policy as required by 40 CFR 131.12(b).

- 1) Lowering water quality is necessary ~~justifiable~~ to accommodate important economic or social development in the area where the water is located;
- 2) The highest statutory and regulatory requirements for all new and existing point sources are achieved;
- 3) All cost-effective and reasonable best management practices (BMPs) for nonpoint source control are considered. See Section 9 for additional discussion; and
- 4) Tier 1 protection is ensured.

**EPA comment:** *Reiterates the prior recommendation that in 1), the word “necessary” be used because it implies the need to complete an alternatives analysis and also indicates that there are no other practicable options to the lowering of water quality, consistent with 40 CFR 131.12. The use of the word “justifies” does not imply the necessity to lower water quality, and therefore the use of this term here could potentially be interpreted to be inconsistent with 40 CFR 131.12. In addition, 40 CFR 131.12(b) states, “The State shall develop methods for implementing the antidegradation policy that are, at a minimum, consistent with the State’s policy and with paragraph (a) of this section”. The state’s antidegradation policy includes the following language: “that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located”. EPA recommends using this language to ensure consistency with the state’s policy as required by 40 CFR 131.12(b). In addition, for 2), EPA recommends including a section that describes how this will be done in Section 8 or creating its own section right after section 8, since this is part of the Tier 2 review.*

Decisions regarding significant lowering of water quality of Tier 2 protection levels will only be made after steps 1-4 are completed and after the intergovernmental coordination and public participation provisions have been satisfied.

**EPA comment:** *Recommend that language referencing public participation provisions specifically reference either 40 CFR 25 or Arkansas’s Continuing Planning Process document (2000) which itself references Part 25.*

## **B) Tier 3 Outstanding Resource Waters (ORW) Evaluation**

ORWs are in APC&EC Rule No. 2 for their outstanding natural or cultural resource value. ORW waters are designated as ERW, ESW, or NSW (APC&EC 2015, Appendix A, D). An ORW is Tier 3, regardless of baseline water quality for each parameter. A Tier 3 waterbody’s assimilative capacity is to be maintained in order to protect their outstanding natural or cultural value existing uses. Proposed new or expanding activities may proceed, but with no net increase of parameter load. Activities that result in temporary lowering of water quality are eligible for review.



ORWs are in APC&EC Rule 2 for their outstanding natural or cultural resource value. ORW waters are designated as ERW, ESW, or NSW (APC&EC 2015, Appendix A, D). An ORW is Tier 3, regardless of baseline water quality for each parameter. A Tier 3 waterbody's assimilative capacity is to be maintained in order to protect existing uses including recreational or ecological significance. ~~Proposed new or expanding~~ Activities that result in temporary and short-term lowering of water quality with a duration no longer than XX and must be eligible for review prior to state action.

**EPA comment:** *The premise that an ORW is a Tier 3 water may be based on exceptional recreational and ecological significance is consistent with 40 CFR 131.12(a)(3). However, the federal regulation also requires that "water quality shall be maintained." Thus, new or expanded discharges to ORW/Tier 3 waters are prohibited except as described in the preamble to the regulation, which allows that "States may allow some limited activities which result in temporary and short-term changes in water quality." The only exception to this prohibition as discussed in the preamble to the standards regulation (48 F.R. 51402), allows some limited activities that result in temporary and short-term changes in the water quality of ONRW. Such activities must not permanently degrade water quality or result in water quality lower than that necessary to protect the existing uses in the ONRW. The EPA has acknowledged that it is difficult to give an exact definition of "temporary" and "short-term" because of the variety of activities that might be considered. However, in broad terms, the EPA's view of temporary is weeks and months, not years.*

*The provision here indicates that permanent new or expanding discharges are allowable, with the limitation that there be no net increase of load for any parameter. The scenario that a new/expanded discharge will not affect assimilative capacity and thus would be allowable in a Tier 3 water is unlikely and moreover, not "temporary" and "short-term." Further, Tier 3 designation also offers special protection for waters that are important for recreation, unique, or sensitive ecologically, but whose water quality, as measured by the traditional parameters may not be particularly high or whose characteristics cannot be adequately described by these parameters (such as wetlands). The EPA recommends that this provision be revised to make it clear that the intent is to limit water quality degradation to the shortest possible time. Although the last sentence indicates that temporary discharges are eligible for review, the provision should make it clear that such activities should not impact existing uses or alter the essential character or special use that lead to the adoption of the ORW/Tier 3 designated use.*

## ASSIGNING TIER PROTECTION

### C) Tier 1 Protection

### D) Tier 2 Protection

Tier 2 protection is assigned on a parameter-by-parameter basis. A Tier 2 review applies to all proposed discharges to ~~WOTUS~~ waters of the State, unless one of the following conditions applies:

- The water is an ORW to which Tier 3 protection applies,
- The discharge is considered insignificant in accordance with the criteria explained in Section 8.B.4 of this document, or

- The receiving water is listed as impaired for a POC on the Arkansas 303(d) List, which requires a Tier 1 review for that POC.

**EPA comment:** *As noted in previous comments regarding the revised Existing Use Protection provision, this provision also appears to limit (Tier 2) protection to only waters of the U.S. as defined under current regulation. Again, we recommend that this provision specify that Tier 2 protections extend to all waters of the state (See ACA §8–4–102 et seq.). Although federal jurisdiction is limited to waters of the U.S., as noted previously, this provision would allow many waters of the state, such as wetlands and others that may be critical to maintaining biological integrity and preserving water quality throughout the state to be excluded from protections in conflict with the provisions in Rule 2.102, and 2.501 referring to the purpose and applicability water quality standards to all waters at all times.*

### **E) Tier 3 Protection**

Tier 3 protection is assigned on a waterbody-by-waterbody basis to all waters designated as ORWs in APC&EC Rule No. 2. Any degradation of water quality is prohibited in these waters unless the discharge only results in temporary and short-term degradation of water quality with a duration of no longer than {insert duration} and must be reviewed prior to state action.

**EPA comment:** *Under federal regulation, any water can be assigned ONRW status regardless of water quality, since factors such as ecological or recreational significance are characteristics that the state may wish to protect. EPA recommends the edits above to define the limits of temporary and short-term degradation that may be allowed by the state.*

## **REVISING TIER PROTECTION LEVELS**

The tier protection for a water may change if it is added to or removed from the list of ORWs in APC&EC Rule No. 2. The tier of protection for a pollutant may change if an impairment for that pollutant is added to or removed from the Arkansas 303(d) List.

**EPA comment:** *Strongly recommend removing or revising this provision because it appears to allow the level of protection afforded to ORWs/Tier 3 waters to be changed based on an impairment from a pollutant. This appears to be inconsistent with Rule 2.106 which defines designated use as specified in in the water quality standards whether or not that use is being attained, and inconsistent with Rule 2.203 which specifies that the “water quality for which the outstanding waterbody was designated shall be protected.” Further, Rule 2.302 specifies that the ORW designated use is a designated use, not simply a descriptive designation. Given this, there is a reasonable expectation that waters that the Commission adopt the ORW designated use based on exceptional water quality, important recreational, unique or sensitive ecological characteristics of those waters and represent an existing use that cannot be removed per 40 CFR 131.10(h)(1).*

*The preamble to the water quality standards regulation (48 F.R. 51402) allows some limited activities that result in temporary and short-term changes in the water quality of an ORW/Tier 3*

*water. However, these activities must not permanently degrade water quality or result in water quality lower than that necessary to protect the existing uses in the ORW/ONRW. As noted previously, there are a variety of activities that may result in a temporary or short term lowering of water quality that may occur over a period of weeks and months but not years. The intent of 40 CFR 131.12(a)(3) is to ensure that waters like Arkansas's ORWs are provided the highest level of protection by prohibiting the lowering of water quality. Tier 3 waters that may not have high water quality as measured by the traditional parameters but are also afforded special protection where characteristics that cannot be adequately described by water quality parameters exist, including important recreational or ecological significance.*

## **ACTIVITIES ELIGIBLE FOR ANTIDEGRADATION REVIEW**

**General Permits:** In an effort to expedite permit timeliness, antidegradation requirements will be incrementally addressed for all general permits during the renewal process within 5 years of approval of this antidegradation implementation procedure. However, activities covered by general permits may still be subject to an antidegradation review if during the application (Notice of Intent) period the activity is determined to likely cause significant degradation.

**EPA comment:** *Related to prior comments, the term “significant degradation” is not defined, thus, it is unclear what constitutes significant degradation or how it will be determined, or if the phrase is related to or synonymous with the definition of “significant lowering of water quality.”*

**General Antidegradation Reviews:** the Division may develop a general antidegradation review for small domestic dischargers (generally less than or equal to 50,000 gallons per day) into Tier 2 waters.

**EPA comment:** *This language appears to refer to a categorical alternative analysis. Although such a categorical alternative analysis may be possible, a “general antidegradation analysis” cannot be done as each receiving water may have very different characteristics. EPA recommends that ADEQ either remove this provision or discuss further with EPA. EPA would like to discuss this further with the state to better understand what is being proposed, as it appears to be a novel idea that no other state has previously implemented.*

## **ANTIDEGRADATION REVIEW PROCEDURE**

### **B) Basis of Antidegradation Review Procedure**

This portion of the chapter outlines the procedure for determining whether or not degradation is justified in WOTUS from regulated discharges/activities. The antidegradation review procedure is based on the following items. See Section 15 below for the Antidegradation Decision Diagram.

**EPA comment:** *As noted in prior comments, this provision is limited to procedures for determining if degradation is justified in waters of the U.S. and excludes all other waters of the*

state (See ACA §8–4–102 et seq.). Although federal jurisdiction is limited to waters of the U.S., federal regulations at 40 CFR 131.12(a)(2)(i) states that the waters cannot be excluded from the protections as described in paragraph (a)(2). As noted previously, this provision would allow many waters of the state, such as wetlands and others that may be critical to maintaining biological integrity and preserving water quality throughout the state to be excluded from protections in conflict with the provisions in Rule 2.102, and 2.501 referring to purpose and applicability to all waters at all times.

The EPA recommends replacing the word “justified” with “necessary.” The two terms are not interchangeable, as comments on section 4(B) explained above. 40 CFR 131.12(b) states, “The State shall develop methods for implementing the antidegradation policy that are, at a minimum, consistent with the State’s policy and with paragraph (a) of this section”. The state’s antidegradation policy includes the following language: “that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located”. EPA recommends using the word necessary in this provision to ensure consistency with the state’s policy and 40 CFR 131.12(a) as required by 40 CFR 131.12(b).

### 3) Assimilative Capacity

Assimilative Capacity is defined in Section 1. The assimilative capacity of a waterbody describes the amount of a pollutant that can be added to that waterbody without causing a violation of water quality criteria or impairing a beneficial use. Tier 1 protection is to maintain existing uses and water quality standards, which assumes no assimilative capacity. Tier 3 protection requires that the assimilative capacity is to be maintained in order to maintain protect existing useswater quality. For Tier 2 protection, the assimilative capacity is protected by evaluating and setting permit limits at critical stream conditions, at discharge design flow conditions, in consideration of background water quality conditions, and in accordance with procedures established in Rule 2 and the CPP. Occasionally, multiple activities exist in close proximity, and the potential pollutant loads for all activities shall be evaluated together.

**EPA comment:** Recommend replacing the third sentence in the preceding paragraph with the following clarification: “For parameters within a water body that have been assigned Tier 1 protection, no assimilative capacity is available and existing uses and water quality standards will be maintained and protected.” This revision helps to clarify that the protection is being assigned on a parameter-by-parameter basis.

The EPA also recommends the tracked edits above to revise the phrase “protect existing uses” to “maintain existing water quality.” This edit would clarify that tier 3 protects more than existing uses. It protects existing levels of water quality.

In order to determine the remaining assimilative capacity of a waterbody for a significant degradation analysis, the ~~total~~ assimilative capacity must be determined for each water quality parameter each time a new or expanded facility/activity is

considered. The ~~total~~ assimilative capacity for dissolved oxygen is indirectly evaluated through water quality modeling of oxygen-demanding pollutants. Each waterbody has a unique available capacity for each water quality parameter that is derived from Baseline Water Quality (BWQ). BWQ must take into consideration all pollutant contributions from natural sources, permitted point sources (100% of allocation), and nonpoint sources at its time of determination. The ~~total~~ available assimilative capacity is the difference between the water quality criteria and the baseline water quality.

**Example of a conservative constituent:**

$$\begin{array}{rcl} \text{water quality criteria} & - & \text{baseline water quality} = \text{total assimilative capacity} \\ 10 \text{ mg/L} & - & 3 \text{ mg/L} = 7 \text{ mg/L} \end{array}$$

10 mg/L= water quality criteria;

3 mg/L= baseline water quality~~[includes contribution from natural, permitted point sources, and nonpoint sources];~~

7 mg/L= ~~total~~ assimilative capacity~~[includes contribution from natural, permitted point sources, and nonpoint sources].~~

**EPA comment:** *The EPA recommends the edits that are reflected in track changes above. EPA recommends deleting the word “total” before assimilative capacity to be consistent with the revision to the title of this section and the removal of the term “total assimilative capacity” from this document. The EPA recommends adding back in the phrase “at its time of determination” in the excerpt above because BWQ is established at a set point in time, and the 10% of assimilative capacity used will be determined from that point forward. EPA also recommends moving the phrase “includes contribution from natural, permitted point sources, and nonpoint sources” from assimilative capacity to BWQ as this seems to be how the state plans to define BWQ based on the sentence, “BWQ must take into consideration all pollutant contributions from natural sources, permitted point sources (100% of allocation), and nonpoint sources.”*

#### 4) Degradation Determination

##### **Documentation**

Documentation to support a significant or non-significant lowering of water quality determination may include, but not be limited to, the percent change of the pollutant concentration, loading calculations, or percent reduction of assimilative capacity. For bioaccumulative parameters and other parameters that may impact aquatic biota, a Tier 2 review may still be required even if the discharge is determined to be non-significant. If significant degradation is predicted then this shall be a documented selection of the applicant.

**EPA comment:** *Given the language, it is unclear if this is suggesting that some type of mass-balance model will be used to determine whether the degradation will be significant or if this is referring to a situation where a discharger could decide to assume degradation is significant and proceed with a Tier 2 review.*

### **Consumption of *less than* or equal to 10% of the assimilative capacity**

The applicant may demonstrate the discharge consumes less than 10% of the assimilative capacity through the use of existing water quality data. Unless there is a potential for bioaccumulation or impacts to aquatic biota, no alternatives analysis or socioeconomic impact review is required. This analysis must be done on a cumulative basis and must incorporate all degradation from all activities that have occurred in this water body since the determination of the BWQ. In the cases where there is potential for bioaccumulation or impacts to aquatic biota may be present, an antidegradation review may be required.

**EPA Comment:** *Per the EPA's previous comment on this provision, we recommend adding the text "This analysis must be done on a cumulative basis and must incorporate all degradation from all activities that have occurred in this water body since the determination of the BWQ. In the cases where there is potential for bioaccumulation or impacts to aquatic biota may be present, an antidegradation review may be required." Judicial decisions have indicated that the use of a de minimis provision is only acceptable when the use of assimilative capacity is considered on a cumulative basis.*

### **Consumption of *greater than* 10% of the assimilative capacity**

A permit applicant may proceed without calculation of total assimilative capacity if it is predicted that significant degradation will occur. The applicant may proceed with submitting an alternatives analysis and social-economic impact analysis (Section 8.B.5). Once 10% of the assimilative capacity determined at the time that the BWQ was established has been utilized, all subsequent activities that result in a new or increased discharge must undergo a Tier 2 review.

**EPA comment:** *Recommend adding the tracked text above to clearly indicate that there is a cumulative cap for the de minimis provision.*

### **Consumption of Dissolved Oxygen Sag**

Consumption of the total assimilative capacity for oxygen-demanding pollutants is calculated based on the dissolved oxygen sag in a steady state water quality model.

**EPA comment:** *Please specify what water quality model is referred to here.*

#### **a) Alternatives Analysis**

An applicant proposing any new or expanded discharge or activity that would significantly lower water quality is required to prepare an evaluation of alternatives. The purpose of this evaluation is to determine practicable alternative(s) that would prevent or limit the degradation associated with the proposed activity. Alternatives are compared to practicability, available technology, and affordability to the controls required for protecting beneficial existing uses and achieving highest statutory and regulatory requirements. Alternatives to be considered should include but are not limited to:



***EPA comment:*** Recommend revising the paragraph above as tracked, changing existing uses to beneficial uses to indicate the protection of both designated and existing uses.

- i) Product or raw material substitution;
- ii) Improved operation and maintenance of existing treatment;
- iii) Installation of biological/physical/chemical treatment process that provide higher level of treatment;
- iv) Water conservation measures; and
- v) Other alternatives.

If experimental or unproven methods are proposed, DEQ may request information on previous applications of the method, effectiveness, transferability (if applicable), costs and other information as appropriate. Applications containing proposals for new or experimental methods will be required to append information regarding likely performance results. Such applications may be approved at Director's discretion with the condition that if the proposed technology does not meet project pollutant control targets, the applicant must adopt conventional or other pollution control measures that meet state antidegradation requirements. DEQ may require that the applicant analyze additional alternatives if an appropriate range of alternatives were not evaluated. DEQ staff and the applicant should meet to discuss these and other issues early in the process. The applicant should also document any alternatives that were determined to be impracticable and provide a basis for the conclusion. If practicable alternatives are identified, the lowering of water quality in a high-quality water will only be authorized if one of those alternatives is selected for implementation.

***EPA Comment:*** Recommend the inclusion of the tracked sentence above to ensure consistency of the AIMS with 40 CFR 131.12(a)(ii), as required by 40 CFR 131.12(b), which states: "(b) The State shall develop methods for implementing the antidegradation policy that are, at a minimum, consistent with the State's policy and with paragraph (a) of this section."

40 CFR 131.12(a)(ii) states: (ii) Before allowing any lowering of high water quality, pursuant to paragraph (a)(2) of this section, the State shall find, after an analysis of alternatives, that such a lowering is necessary to accommodate important economic or social development in the area in which the waters are located. The analysis of alternatives shall evaluate a range of practicable alternatives that would prevent or lessen the degradation associated with the proposed activity. When the analysis of alternatives identifies one or more practicable alternatives, the State shall only find that a lowering is necessary if one such alternative is selected for implementation.

#### **b) Social Development Analysis**

Social-economic, environmental, or public health issues may be considered when lowering water quality. This analysis is not necessary if a non-degrading or non-significant degrading alternative is chosen. Factors to be considered by the applicant in making a determination include but may not be limited to::



- i) Employment (e.g. increasing production and jobs, maintaining, or avoiding reduction in employment, permanent or short-term);
- ii) Improved community tax base;
- iii) Abatement of an environmental or public health problem;
- iv) Providing a social benefit to the community;
- v) Increasing or improving housing; and
- vi) Providing necessary public services (e.g., fire department, school, infrastructure).

**EPA comment:** *Recommend that ADEQ provide additional detail to specify who is responsible for conducting the social development analysis and, at what point in the review process it will be conducted.*

### **c) Economic Analysis**

Alternatives that are deemed practicable must undergo a present worth cost comparison. An analysis of pollution control costs, or economic efficiency, is appropriate when the applicant desires to optimize the balance between water quality benefits and project costs. General cost categories that should be considered include capital cost, annual operating and maintenance cost, customer costs, and debt service.

In order to develop a standardized framework for projecting, evaluating, and comparing costs associated with various pollution control alternatives, applicants should use a 20-year life cycle present worth framework for reporting cost information. However, applicants may propose alternate economic demonstrations if appropriate. Alternative direct cost comparisons may be presented if the present worth calculation is complicated by the amount of difference in the effective design longevity of the alternatives examined.

The Division has developed a worksheet for guidance in calculating costs. The worksheet or an alternative cost analysis should be completed and submitted with the antidegradation review.  
{ ADD REFERENCE }

**EPA Comment:** *Recommend that ADEQ provide a draft of this worksheet to EPA and the public for review prior to finalizing.*

Base cost is considered the minimum cost to achieve water quality standards. As a non-binding guideline, alternatives costing less than 120 percent of the base cost are presumed to be considered economically efficient. This economic efficiency guideline presumes that the reduction of pollutant loads below the minimum level of pollution control has an environmental benefit which warrants the increased expenditure.

Following the evaluation of alternatives, the applicant must provide a basis for the selected alternative. This selection must be based on the practicability, economic efficiency, and social benefits of the alternative.

**EPA comment:** *Recommend that ADEQ develop a range of practicable alternatives and then use the difference in cost from base cost to select an alternative for implementation. With regard to the second paragraph, EPA recommends moving this into the “Alternatives Analysis” section. All alternatives that are evaluated should be practicable – the alternatives analysis is the step of the Tier 2 review that shows that degradation is “necessary; the socioeconomic analysis is a separate piece that shows that the allowable degradation is “important.”*

## **IMPLEMENTATION OF CONTROLS FOR NONPOINT POLLUTION SOURCES**

EPA’s regulatory interpretation of 40 CFR§131.12(a)(2) is that federal Antidegradation Policy does not require DEQ to establish BMPs for nonpoint source pollution control where regulatory programs requiring BMPs do not exist. The CWA leaves it to the states to determine what, if any, controls on nonpoint sources are needed to provide for attainment of state WQS. States may adopt regulatory or voluntary programs to address nonpoint sources of pollution. Where a state has adopted a regulatory program for nonpoint source pollution control, the state must assure that such controls are properly implemented before authorization is granted to justify lowering of water quality.

**EPA comment:** *Similar to this section for nonpoint source pollution, with regard to allowing lowering of water quality in a high-quality waters, the EPA recommends the state lay out the steps for assuring the highest statutory and regulatory requirements for point sources are achieved and also assuring that the lowering that is being authorized will not impair existing uses as required by 40 CFR 131.12(a)(2). These are both requirements included in the state’s policy: “In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that (1) there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and (2) that the provisions of the Arkansas Water Quality Management Plan be implemented with regard to nonpoint sources.”*

DEQ and the Arkansas Department of Agriculture provide cooperative oversight of nonpoint pollution sources and waters that are impaired by nonpoint sources. Nutrient Management Plans for permits/activities are one of the avenues used for addressing nonpoint pollution from liquid animal waste in nutrient surplus areas. The Arkansas Department of Agriculture requires waste management plans for non-liquid systems. The controlling agencies assure compliance through regulatory programs applicable to such activities. Activities (e.g. agriculture, silviculture) resulting in a new or expanded amount of pollutants entering waters solely from nonpoint sources are not subject to an antidegradation review prior to these activities commencing.

**EPA comment:** *With regard to controlling agencies, please explain how ADEQ will communicate with these controlling agencies to assure compliance with the applicable regulatory programs before authorizing lowering of water quality.*