

North Carolina's Division of Water Resources Category 4b Demonstration Guidance

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Section I

Introduction

The North Carolina Division of Water Resources (DWR) has prepared this guidance for creating a 4b demonstration for an impaired waterbody. You are encouraged to review these policies and procedures and discuss a potential 4b demonstration with DWR's Modeling and Assessment Branch (MAB) prior to development.

Background on Category 4b

Category 4b of the integrated report comprises impaired waters that are expected to meet water quality criteria within a reasonable amount of time due to pollution controls implemented voluntarily, without a TMDL, as described in [EPA integrated reporting guidance](#). As part of EPA's [Long Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303\(d\)](#) states are encouraged use alternative approaches such as Category 4b, in addition to TMDLs, that incorporate adaptive management and are tailored to specific circumstances where such approaches are better suited to achieve the water quality goals of each state.

Process and timeline to request Category 4b

As the authorized implementer of the Clean Water Act in North Carolina, DWR is responsible for assessing waters to learn if standards are being met. Anyone with implementation authority may request that DWR consider a Category 5 impaired water for Category 4b. Participants may be local governments or other state agencies. The following is the process and timeline for these requests:

1. Requests can be submitted at any time to DWR.
2. Participants must address the six elements set forth in EPA/DWR requirements (see Section II).
3. DWR must make the final decision on submitting a 4b demonstration to EPA.
4. EPA will evaluate on a case-specific basis a State's decision to move an impaired water from Category 5 to Category 4b and thereby not require a TMDL. Final designation of a waterbody for Category 4b is contingent upon concurrence with the 4b demonstration by EPA. In the case where there is no EPA concurrence, the waterbody will remain in Category 5 and a TMDL is required.
5. After EPA concurrence with a 4b demonstration, DWR will require progress reports from the participants for tracking purposes, and to ensure that the water remains appropriately categorized in 4b.

Section II

EPA and DWR Requirements for 4b Demonstrations

The following information on what must be included in a 4b demonstration is largely based on EPA guidance. Because EPA's 4b guidance is intended for States, rather than third party "participants," DWR has added information to further clarify expectations and the review process. Participants must contact DWR to discuss specific cases before beginning work on 4b. Participants requesting the placement of

an impaired waterbody into Category 4b are responsible for the development of the demonstration that a Category 4b designation is appropriate for the impaired waterbody. The structure for a Category 4b demonstration is shown below.

A Category 4b demonstration must provide the following information:

1. Identification of waterbody assessment unit number(s) and statement of the problem causing the impairment;
2. Description of pollution controls and how they will achieve water quality standards (WQS);
3. An estimate or projection of the time when WQS will be met;
4. Schedule for implementing pollution controls;
5. Monitoring plan to track effectiveness of pollution controls; and
6. Commitment to revise pollution controls, as necessary.

The required components for each element of a 4b demonstration are as follows:

1. Identification of impaired waterbody and statement of problem causing the impairment

Segment description: The demonstration should identify the impaired waterbody name, assessment unit number (AU), and description.

Impairment and pollutant causing impairment: The demonstration should identify the applicable water quality standard(s) for each AU and associated pollutant causing the impairment.

Sources of pollutant causing impairment: The demonstration should include a description of the known and likely point, nonpoint, and background (upstream inputs) sources of the pollutant causing the impairment, including the magnitude and locations of the sources. In cases where some portion of the impairment may result from naturally occurring sources (natural background), the demonstration should include a description of the naturally occurring sources of the pollutant to the impaired segment.

2. Description of Pollution Controls and how they will achieve water quality standards

Water quality target: The demonstration should identify a numeric water quality target(s), which is a quantitative value used to measure whether or not the applicable water quality standard is attained. Generally, the pollutant of concern and the numeric water quality target are, respectively, the chemical causing the impairment and the numeric criteria for that chemical contained in the water quality standard. The demonstration should express the relationship between any necessary reduction of the pollutant of concern and the attainment of the numeric water quality target.

Occasionally, the pollutant of concern is different from the pollutant that is the subject of the numeric water quality target. In such cases, the Category 4b demonstration should explain the linkage between the pollutant of concern and the chosen numeric water quality target. In other cases, multiple indicators and associated numeric target values may be needed to interpret an individual water quality standard.

In cases where the impairment is based on non-attainment of a narrative (non-numeric) water quality criterion, the Category 4b demonstration should identify one or more appropriate numeric water quality target levels that will be used to evaluate attainment of the narrative water quality criteria. The Category 4b demonstration should also describe the basis for selecting the numeric target levels.

Point and nonpoint source loading reductions that when implemented will achieve WQS: The demonstration should describe the cause-and-effect relationship between the water quality standard (and numeric water quality target as discussed above) and the identified pollutant sources and, based on this linkage, identify what loadings are acceptable to achieve the water quality standard. The cause-and-effect relationship may be used to determine the loading capacity of the waterbody for the pollutant of concern. However, a loading capacity may not be relevant in all circumstances. The demonstration should identify the loading capacity of the segment for the applicable pollutant or describe why determination of the loading capacity is not relevant to ensure that the controls are sufficient to meet applicable water quality standards.

The demonstration should also contain or reference documentation supporting the analysis, including the basis for any assumptions; a discussion of strengths and weaknesses in the analytical process; and results from any water quality modeling or data analysis. A 4b demonstration must include, where applicable, calculations showing how proposed practices for point and nonpoint sources will meet standards. In other words, what is the loading capacity of the waterbody in order to meet water quality standards, what is the needed load reduction for sources contributing to the impairment to achieve standards, what is the corresponding reduction achieved by implementing pollution controls with regard to the contributing sources and over what time period? Appropriate models and other analysis tools should be selected on a case-by-case basis. The level of rigor necessary will vary depending on the complexity of the impairments and corresponding implementation strategies.

Controls that will achieve WQS: The demonstration should describe the controls already in place, or scheduled for implementation, that will result in reductions of pollutant loadings or other water quality improvements, such that the water quality standard is attained. The demonstration should also describe the basis upon which the participant concludes that the controls will result in the necessary reductions or improvements.

Existing NPDES wastewater and stormwater permit limitations, conditions and compliance schedules should be considered. If any changes, revisions or modifications to these existing limitations, conditions, compliance schedules or stormwater management practices are needed to attain water quality standards, then a 4b may not be appropriate.

Description of requirements under which pollution controls will be implemented: The demonstration should describe the basis for concluding that the pollution controls are requirements or why other types of controls already in place may be sufficient, as discussed below.

As discussed in the 2008 Integrated Report (IR) guidance, EPA will consider a number of factors in evaluating whether a particular set of pollution controls are in fact "requirements" as specified in EPA's regulations, including: (1) authority (local, State, Federal) under which the controls are required and will be implemented with respect to sources contributing to the water quality impairment (examples may include: self-executing State or local regulations, permits, and contracts and grant/funding agreements that require implementation of necessary controls); (2) existing commitments made by the sources to implement the controls (including an analysis of the amount of actual implementation that has already occurred); (3) availability of dedicated funding for the implementation of the controls; and (4) other relevant factors as determined by EPA depending on case-specific circumstances.

Since the overriding objective of the 4b alternative is to promote implementation activities designed to achieve water quality standards in a reasonable period of time, for all of the factors listed above, EPA

will evaluate each 4b alternative on a case-by-case basis, including in particular the existence of identifiable consequences for the failure to implement the proposed pollution controls.

Depending on the specific situation, "other pollution control requirements" may be requirements other than those based on statutory or regulatory provisions, as long as some combination of the factors listed above are present and will lead to achievement of WQS within a reasonable period of time. For example, established plans of government agencies that require attainment of WQS within a reasonable period of time may qualify even when their components include incentive-based actions by private parties. States may also choose to rely on controls that have already been implemented where there is sufficient certainty that implementation will continue until WQS are achieved and will not be reversed. Because the controls are already in place and achieving progress, EPA may consider such controls to be requirements even if their implementation did not occur pursuant to binding legal authority.

3. Estimate or projection of time when water quality standards will be met

EPA expects that segments impaired but not listed under Section 303(d) (Category 5) based on the implementation of existing control requirements will attain WQS within a reasonable period of time. The demonstration should provide a time estimate by which the controls will result in WQS attainment, including an explanation of the basis for the conclusion. A 4b demonstration should provide interim milestones if phased implementation and adaptive management is expected to be used to attain water quality standards, and an explanation of how the milestones move the water towards attaining standards.

The demonstration should also describe why the time estimate for the controls to achieve WQS is reasonable. EPA will evaluate on a case-specific basis whether the estimated time for WQS attainment is reasonable. What constitutes a "reasonable time" will vary depending on factors such as the initial severity of the impairment, the cause of the impairment, riparian condition, channel condition, the nature and behavior of the specific pollutant, the size and complexity of the segment, the nature of the control action, cost, public interest, etc.

4. Schedule for Implementing Pollution Controls

The demonstration should describe, as appropriate, the schedule by which the pollution controls will be implemented and/or which controls are already in place.

5. Monitoring Plan to Track Effectiveness of Pollution Controls

The demonstration should include a description of, and schedule for, monitoring milestones to track effectiveness of the pollution controls and other improvements. The demonstration should describe any water quality monitoring that will be performed to determine the combined effectiveness of the pollution controls on ambient water quality. If additional monitoring will be conducted to evaluate the effectiveness of individual pollution controls, EPA encourages the inclusion of a description of these efforts as well. The demonstration should identify how and when assessment results from the monitoring will be reported.

6. Commitment to Revise Pollution Controls, as Necessary

The demonstration should provide a statement that the participant commits to revising the pollution controls or other implementation activities, as necessary, if progress towards meeting water quality standards is not being shown. Also, the demonstration should identify how any changes to the pollution controls, and any other element of the original demonstration, will be reported to DWR. If progress milestones remain unmet, the impaired water is moved back to Category 5 and a TMDL is required.

Section III

Submittal

The Category 4b demonstration should be submitted as a stand-alone document. In situations where data and information for a Category 4b demonstration are contained in existing documents developed under separate programs, summarize relevant information in the Category 4b demonstration and reference the appropriate supporting documentation that provides that information. The supporting documentation should be included as part of the Category 4b demonstration.