Water Quality Control Commission Policy 98-1

Guidance for Implementation of

Colorado’s Narrative Sediment Standard

Regulation # 31, Section 31.11(1)(a)(i)

Adopted: October 14, 2014
Expires: XXXX
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List of Acronyms and Abbreviations  
*(as a start - don't know which of these we will need...)*

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>303(d) List</td>
<td>List of Impaired Waters, pursuant to section 303(d) of the federal Clean Water Act</td>
</tr>
<tr>
<td>AAH</td>
<td>Administrative Action Hearing</td>
</tr>
<tr>
<td>Basic Standards</td>
<td>Basic Standards and Methodologies for Surface Water (5 CCR 1002-31) Also known as Regulation #31</td>
</tr>
<tr>
<td>CDPS</td>
<td>Colorado Department of Public Safety</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>Commission</td>
<td>Colorado Water Quality Control Commission</td>
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<tr>
<td>CWQCA</td>
<td>Colorado Water Quality Control Act</td>
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<tr>
<td>CWA</td>
<td>Clean Water Act</td>
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<tr>
<td>Division</td>
<td>Colorado Water Quality Control Division</td>
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<tr>
<td>EPA</td>
<td>U.S. Environmental Protection Agency</td>
</tr>
<tr>
<td>FAQ</td>
<td>Frequently Asked Questions</td>
</tr>
<tr>
<td>MMI</td>
<td>Multi-Metric Index, Colorado’s macroinvertebrate bioassessment tool (see Commission Policy 10-1)</td>
</tr>
<tr>
<td>NA</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Q &amp; A</td>
<td>Questions and Answers</td>
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<tr>
<td>RBP</td>
<td>Rapid Bioassessment Protocol</td>
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<tr>
<td>Regulation #31</td>
<td>Basic Standards and Methodologies for Surface Water</td>
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<tr>
<td>SBP</td>
<td>Statement of Basis and Purpose</td>
</tr>
<tr>
<td>TMDL</td>
<td>Total Maximum Daily Load</td>
</tr>
<tr>
<td>UAA</td>
<td>Use Attainability Analysis</td>
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<tr>
<td>USFWS</td>
<td>United States Fish and Wildlife Service</td>
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<td>WQCC</td>
<td>Colorado Water Quality Control Commission</td>
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<td>WQCD</td>
<td>Colorado Water Quality Control Division</td>
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<td>WQS</td>
<td>Water Quality Standards</td>
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Definitions
(as a start - don't know what we will need...)

“Total Maximum Daily Load” (TMDL): A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that load among the various sources of that pollutant. Pollutant sources are characterized as either point sources that receive a wasteload allocation, or nonpoint sources that receive a load allocation.
I. INTRODUCTION

This policy document is intended to provide guidance to the Water Quality Control Division (“Division”) staff and to the public regarding the implementation of the Colorado Water Quality Control Commission’s “narrative standards” as they apply to sediments which may form deposits detrimental to the beneficial uses. The Basic Standards and Methodologies for Surface Water, Regulation 31 (5 CR 1002-31) (“the Basic Standards”), are the basis for establishing this guidance. In particular, section 31.11 of this regulation provides the following language:

All surface waters of the State are subject to the following basic standards; however, discharge of substances regulated by permits which are within those permit limitations shall not be a basis for enforcement proceedings under these basic standards:

(1) Except where authorized by permits, BMP’s, 401 Certifications, or plans of operation approved by the Division or other applicable agencies, state surface waters shall be free from substances attributable to human-caused point source or nonpoint source discharge in amounts, concentrations or combinations which:

(a) or all surface waters except wetlands;

(i) can settle to form bottom deposits detrimental to the beneficial uses. Deposits are stream bottom buildup of materials which include but are not limited to anaerobic sludges, mine slurry or tailings, silt, or mud;

Policy 98-1 provides guidance in implementing the narrative standard in all state surface waters (except wetlands). However, different tools are available for different geographic settings and different beneficial uses.

The contents of this document have no regulatory effect, serving instead to summarize the Commission’s thinking and actions in a single public document. In other words, as opposed to a rule or regulation, this policy statement has no binding effect on the Commission, the Division, or the regulated community. Moreover, this policy is not intended, and should not be interpreted, to limit any options that may be considered or adopted by the Commission in future rulemaking proceedings. Therefore, this policy statement can, and will, be modified over time as warranted by future rulemaking decisions.

The first sections of this document record the history of Commission’s actions and sets out the core concepts that are the foundation of the Sediment Guidance. Section III includes a discussion of the applicability of the narrative standard to beneficial uses. Section IV provides guidance on assessing sediment impacts on the aquatic life use. Section V describes the numerical thresholds for sediment impacts on the aquatic life use, where they are applicable, and provides a summary of how they were derived. Section VI discusses the framework for assessment of sediment impacts to other beneficial uses. Frequently Asked Questions are
II. HISTORY

Colorado’s narrative sediment standard (see (31.11(a)(1)(i)) was included in the Basic Standards adopted by the Commission in 1979. Unfortunately, there is no direct discussion of the narrative standards in the Statement of Basis for that hearing or any subsequent hearings.

All states have adopted similar narrative standards, and EPA considers that the narrative criteria apply to all designated uses at all flows and are necessary to meet the statutory requirements of section 303(c)(2)(A) of the CWA.

In the mid 1990’s, national interest arose in developing quantitative methods for determining the impact caused by sedimentation in the nation’s waterways.

A. Initial Policy Development

In 1996, the Colorado Sediment Task Force was convened with the goal of developing a guidance document for implementing this narrative standard. The product of the Task Force was the Implementation Guidance for Determining Sediment Deposition Impacts to Aquatic Life in Rivers and Streams (“Sediment Guidance”). The Sediment Guidance was adopted by the Water Quality Control Commission in 1998 as “provisional” so agencies and other stakeholders could gain experience applying the guidance. The expiration date was extended in 2000 and again in 2002.

The initial version of the guidance was specifically intended to apply to the assessment of aquatic life uses in higher gradient, cobble-bed, course-coarse-grained mountain stream and wadeable river environments. It was not intended to address sediment impacts in sandy-bottom, lower-gradient streams, large unwadeable rivers and lakes and reservoirs. The Sediment Task Force’s intention was to continue to work approaches for these other environments, but other priorities arose. However, much of the momentum from this effort was diverted to the Aquatic Life Use work group effort (that culminated in Policy 10-1) and the nutrient criteria development effort.

B. First Major Revision

The Sediment Task Force was reconvened in January 2003 to address shortcomings of that the Task Force members had experienced when using the Provisional Guidance. As a result of the Task Force’s work, changes were proposed:

- to augment the discussion of particle size and the importance of and steps in, substrate evaluation,
- use support categories/percentages for substrate were modified to reflect other protocols and recent experience.

• use support percentages for biological assessment were modified to reflect recent experience.
• More information was added regarding biological metrics that indicate sediment impairment, namely tables, were added that identified macroinvertebrate and fish metrics that indicate sensitivity to sedimentation effects.
• Example assessments of fictional stream reaches were added an appendix.

The Division proposed the document as revised by the Task Force for consideration but the Commission. At the May 2005 AAH, the Commission adopted the revised sediment guidance as final (as opposed to “provisional”), with an expiration date of May 2007.

Post-Sediment Task Force Input: After the Sediment Task Force process ended in 2005, the US Forest Service identified serious concerns with the guidance. They noted that in their experience, the guidance was too nebulous, and the matrix excluded sites that should be considered “impaired” and the “two part test” should not always be required.

After the adoption of the May 2005 version guidance, the Division and other agencies used the guidance to evaluate streams suspected of sediment impairment. Many streams were re-assessed and over 70 were removed from the M&E list. A few of these were added to the 303(d) list. The Division, along with USFS and EPA, also used the guidance to evaluate streams for post-TMDL project effectiveness.

2007 Review: At this time the focus of biological assessment work had entirely shifted to development of the Aquatic Life Use Attainment policy. At the March 2007 review the Division recommended that the sediment guidance be continued as final guidance with an extended expiration date of May 2010.

2010 Review: At the March 2010 review the Division recommended that the sediment guidance be continued as final guidance with an extended expiration date of May 2013. Further, the Division identified two issues that could be addressed in the guidance in the future, when resources were available:

• Since the guidance was specifically written to address high gradient, cobble-bedded streams it has limited usefulness in sandy bottomed xeric or plains streams. Assessment methodologies should be explored to expand the utility in the other portions of the state.
• Once the Division and stakeholders have more experience with the aquatic life assessment methodologies and the macroinvertebrate multi-metric index (MMI) tool, Policy 98-1 should be updated to incorporate use of the MMI tool in assessment of attainment of the narrative sediment standard.

2012 Section 303(d) List (Regulation #93) hearing (December 2011). Sediment guidance became an issue (see WQCD Rebuttal, 303(d) List RMH, November 30, 2011 pp 46-52). Instances were identified where following the methodology in Policy 98-1 resulted in a determination that the waterbody was impaired, however when

Comment [A1]: Need to finish sentence.

2 USFS letter, April 27, 2005
following the methodology in Policy 10-1, the waterbody was determined to not be impaired. In other cases, it was found that streams met the aquatic life attainment thresholds in Policy 98-1, but were considered impaired under the methodology in Policy 10-1.

2012 Memo to Commission: In November 2012, the Division discussed the timing of the review of Policy 98-1 (which was set to expire May 31, 2013) with the Commission. It was the Division’s recommendation that the Commission extend the expiration date to December 31, 2014, and schedule an administrative action hearing to consider a revised draft at the October 2014 Commission meeting. The Commission followed the Division’s recommendation.

B. Second Major Revision: October 2014

In the fall of 2013, the Division and Stakeholders undertook a review of Policy 98-1 with the intent of addressing the shortcomings issues that have been identified above.

(a couple paragraphs about what changed)

The Commission adopted the revised proposal on October 14, 2014 with an expiration date of xxxx [proposed to be December 31, 2017.]

C. [Reserved for periodic updates regarding future Commission policy decisions.]

III. CENTRAL CONCEPTS

The assessment methodology is a means to determine whether or not a specific water body is “free from substances attributable to human-caused point source or nonpoint source discharge in amounts, concentrations or combinations which can settle to form bottom deposits detrimental to the beneficial uses.” This section includes a discussion of the central concepts, including a description of “beneficial uses” and the concept of the expected condition of a water body. Another central concept is that attainment depends upon whether sediment pollution deposition is in an amount that can be harmful or detrimental to a beneficial use. This section also includes a discussion of the limitations of the narrative standard with regards to permitted discharges.

A. Beneficial Uses versus Classified Uses

The Colorado Water Quality Control Act and the Basic Standards uses both the terms “beneficial use” and “classified use.” Water quality standards have to protect both... Doesn’t mean the other beneficial uses don’t have to be protected.

What is the list of “beneficial uses” in the Colorado Water Quality Control Act framework? “Domestic, agriculture, municipal and industrial uses, the protection and propagation of fish and wildlife, recreation, drinking water or such beneficial uses as the Commission deems consistent with the policies of 25-8-102 and the need to minimize negative impacts on water rights.” 25-8-203(2)(e)
1. Beneficial Uses

Beneficial use is a term more frequently used in the Colorado water law framework. In the water law context, beneficial use is the basis, measure and limit of a water right. Colorado law broadly defines beneficial use as a lawful appropriate that employs reasonably efficient practices to place water to use. In the water quality context, excessive sediment deposition can impair a water body if it diminishes a beneficial use of the water.

What is a “reasonably efficient practice” depends on the type of use and how the water is withdrawn and applied. The goal is to avoid water waste so that the water resource is available to as many decreed water rights as possible.

Over time, the uses of water considered “beneficial” have increased in response to the changing economic and community values of Colorado citizens. Recognized beneficial uses under the prior appropriation doctrine now include the following:

- Augmentation
- Colorado Water Conservation Board instream flows and natural lake levels
- Commercial
- Domestic
- Dust suppression
- Exportation for a gravel pit
- Fire protection
- Fish and wildlife culture
- Flood Control
- Industrial
- Irrigation
- Mined land reclamation
- Municipal
- Nature centers
- Power generation
- Produced water from gas production
- Recreation on reservoirs
- Recreation in channel diversions
- Release from storage for boating and fishing
- Snowmaking
- Stock watering
- Water Storage

2. Classified Uses

Some beneficial uses that have been grouped and singled out for extra protection by the CWCA. Criteria developed to protect them. Classified Uses:

Recreation, Agriculture, Aquatic Life, Domestic Water Supply, Wetlands

A. Introduction to Sediment Impairment

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2Colorado Foundation for Water Education—Citizen Guide to Colorado Water Rights, pg 9
4Added in 2013 in SB 2013-041.
1Regulation #31 at 31-131(1)
The scope of this guidance is limited to the assessment of bottom deposition of sediment. It is not intended to address sediment suspended in the water column or turbidity. Turbidity and suspended sediment are aspects of sediment transport, which is a complex relationship of streamflow— and the type and size of sediment in rivers. However, it is important to understand that an increase in suspended sediment concentrations will reduce light penetration, and a sustained high concentration of suspended sediment can reduce primary production. Significantly increased suspended sediment can cause problems with water treatment, clog irrigation canals, and reduce reservoir storage capacity.

Sediment can be dichotomously classified in overlapping ways – clean or contaminated, and organic or inorganic. This guidance addresses only clean sediment, not sediment that is contaminated by toxic substances such as heavy metals. Organic matter can become abundant enough to cause water quality problems, typically below outfalls where decay can depress dissolved oxygen levels. The distinction between inorganic and organic fractions is not always made in the monitoring or study of sediment, nor is it the intent of this guidance to do so. Inorganic sediment, the product of physical weathering of geologic materials and sediment caused by human induced erosion, is the main focus of this guidance.

This guidance applies to sediment that is detrimental to beneficial uses causing stress to aquatic life through the deposition of materials. The guidance is not intended to provide a complete analysis of aquatic life use attainment; it is necessary to perform other analysis (e.g. chemical and toxicity analysis) to determine a full range of possible stressors which may be impacting aquatic life. Only human-caused discharges in amounts, concentrations, or combinations are considered in this guidance. Therefore, natural erosive processes over a variety of geologic conditions must be considered in the implementation of this guidance, in order to determine natural or background conditions.

Excessive deposition of sediment on the bottom substrate of streams and rivers is an important cause of impacts to aquatic life. These impacts usually result from the loss of critical habitat for many fish, aquatic invertebrates, and algae. These kinds of impacts have been addressed in a detailed review in by Waters (1995) and in other literature reviews. Impacts to fish can include the smothering of fish spawning gravels and cobble surfaces with fine sediment resulting in decreased intergravel oxygen and a reduction in survival and growth rates; loss of fish food sources; and loss of pool and other habitat types through changes in stream channel morphology. Impacts to aquatic invertebrates can include the smothering and infilling of the interstitial spaces normally found in clean such as gravel and cobble. This loss of habitat space can result in changes to the normal aquatic invertebrate community including changes in abundance, community structure, distribution, and in the loss of sensitive species.
One of the fundamental questions regarding sediment in streams and its effect on biota is particle size. Stream channels and floodplains are constantly adjusting to the amount of water and sediment supplied by the watershed. Four physical characteristics of a stream are in a dynamic state of equilibrium called Lane's Balance. These characteristics are streamflow, channel slope, sediment load, and particle size. If one of these characteristics changes in a stream, one or more of the other three must also change to accommodate and achieve equilibrium again. A change in sediment load is the first thing to change in response to a disturbance to restore equilibrium and it is the most sensitive measure of change. Chapman and Mcleod (1987) found that bed material size is related to habitat suitability for fish and Macroinvertebrates and that excess sediment decreased both density and diversity of aquatic insects. Specific aspects of sediment-invertebrate relationships may be described as follows: 1) invertebrate abundance is correlated with substrate particle size; 2) fine sediment reduces the abundance of original populations by reducing interstitial habitat normally available in large-particle substrate (gravel, cobbles); and 3) species type, species richness, and diversity all change as substrate particle size changes from large (gravel, cobble) to small (sand, silt, clay) (Waters, 1995).

This guidance is designed to provide a consistent approach for the Division, for other agencies, and stakeholders, to gather data to document the effects of bottom deposits on aquatic life beneficial uses with particular emphasis on aquatic life use protection. The guidance also provides a means for the Division and the Commission to consider the impacts of bottom deposits on the attainment of the aquatic life beneficial uses, especially the aquatic life use classifications in Regulation 31. In Colorado, surface waters may be assigned any of the following four aquatic life classifications: class 1 coldwater, class 1 warmwater, class 2 coldwater and class 2 warmwater. The guidance presents a procedure for determining whether a particular stream segment is attaining the narrative standard based on the concept of comparing the actual sediment conditions of a study stream with the expected conditions for the same stream. A wide variety of factors including aquatic life beneficial uses classification, geology, elevation, climate, hydrology, and land use will influence the selection of appropriate expected conditions.

For the purposes of determining the status of water quality as required in §305(b) of the federal Clean Water Act, and establishing a listing of waterbodies requiring TMDL’s under §303(d) of the Act, the standards attainment categories found in Section 4 shall be used by the Division. Classified stream segments or portions of classified segments which are determined to be not attaining the narrative sediment standard after such an analysis may be proposed by the Division for 303(d) listing. Streams which are attaining the standard should not be listed for 303(d) purposes. This guidance is intended for identifying impairment due to sediment but is not intended to address the development of TMDL’s or discharge permit conditions for sediment, and therefore does not address how to solve sediment problems or how to identify sediment sources or allocate loads.
B. Expected Condition as a Concept

The assessment approach described in this guidance is based on the combined concepts of the use of thresholds and comparing the actual conditions of a specific study stream reach or segment with the expected conditions for the same stream to determine attainment of the narrative standard. This guidance uses the term expected condition rather than the EPA terminology of reference condition. Expected condition is used in this guidance in an attempt to avoid the concern that sometimes arises when reference condition is narrowly interpreted to mean pristine or minimally impacted streams. Expected condition is intended to include a wide range of aquatic conditions that are protective of beneficial uses but can reflect more than only minimal impact, including those impacts associated with historical and dominant land and water use activities. Nevertheless, it can still serve as a reasonable and readily attainable target or goal for improvement to the Aquatic Life use in a sediment impacted waterbody.

This approach is directly patterned after the reference condition approach found in U.S. Environmental Protection Agency (“EPA”) guidance for a number of programs including water quality standards, assessment and reporting, biocriteria development, rapid bioassessment protocols (“RBP”), use attainability analysis, and §319 monitoring. The expected condition approach, and its many modifications, is widely used across the country. By adopting this guidance, Colorado can assess and report sediment conditions in a manner consistent with other states and can take advantage of the experience gained by other states in their assessments.

C. Use Attainment Concepts

In order to protect and maintain Colorado’s beneficial uses of water, it is the policy of the Commission to apply a defined method and a uniform approach to determine whether sedimentation has impaired a water body. The method and approach are based on the following tenets:

1. Comparison with Expected Condition: The Commission continues to support the use of “reference condition” or “expected condition” as the basis for characterizing use support whether bottom deposits of sediment are detrimental to the beneficial uses. It is important to note that this concept of use support embraces considerable variation in stream morphology, the biological community and geographical setting. This variability must be acknowledged in developing the attainment thresholds.

2. Impairment is a Significant Departure from Expected Condition: At this time, the Commission affirms the position taken in prior decisions made in the context of the Section 303(d) Listing Methodology -- that clear and convincing evidence is needed to show impairment, and that the status of non-attainment represents a significant departure from reference or expected condition.
3. **Statistical Methods:** Consistent with CWQCA at section 25-8-204(5), the Commission requires that statistical methodologies be based on assumptions that are compatible with the water quality data. Application of those methodologies should be transparent with respect to uncertainty and risk of mistaken conclusions.

Assessment of sediment impacts to aquatic life uses will use the methods described in Sections IV and V below. Assessment of sediment impacts to other beneficial uses will use the methods described in Section VI below.

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**C. Use Attainment Concepts**

Another important concept here is that in order for the Commission to determine impairment, there must be sediment in an amount that is both a significant departure from expected condition and harmful/detrimental to a beneficial use. For the aquatic life use, [insert general description of the method once developed]. For other uses, biological and/or physical assessments that provide clear and convincing evidence of a detrimental impact to the beneficial use will be considered. For example, the beneficial use of flood control may be diminishing due to sediment deposition in a reservoir. However, in order to determine impairment of the narrative standard, there must also be clear and convincing evidence that there is significantly more sediment deposition than the “expected condition” for the reservoir.

**D. Permit as a Shield**

The narrative standards include a provision that shields existing permittees. Section 31.11 of the Basic Standards provides the following language:

*All surface waters of the State are subject to the following basic standards; however, discharge of substances regulated by permits which are within those permit limitations shall not be a basis for enforcement proceedings under these basic standards:*

*Except where authorized by permits, BMP's, 401 Certifications, or plans of operation approved by the Division or other applicable agencies,...*

The Division’s opportunity to limit a discharges’ sediment impact is when the permit is drafted. Once it is issued the permittee is shielded...

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**IV. AQUATIC LIFE USE IMPACTS - ASSESSMENT METHODOLOGY**

The following assessment methodology applies to sediment causing stress to aquatic life through the deposition of materials. It is not intended to provide a complete analysis of aquatic life use attainment; it is necessary to perform other analysis (e.g. chemical and toxicity analysis) to determine a full range of possible stressors which may be impacting aquatic life. Only human-caused discharges of sediment in amounts, concentrations, or combinations which can settle to form bottom deposits detrimental to beneficial uses are considered in this guidance.
Therefore, natural erosive processes over a variety of geologic conditions must be considered in the implementation of this guidance, in order to determine expected conditions.

Excessive deposition of sediment on the bottom substrate of streams and rivers is an important cause of impacts to aquatic life. These impacts usually result from the loss of critical habitat for many fish, aquatic invertebrates, and algae. These kinds of impacts have been addressed in a detailed review in by Waters (1995) and in other literature reviews. Impacts to fish can include the smothering of fish spawning gravels and cobble surfaces with fine sediment resulting in decreased intergravel oxygen and a reduction in survival and growth rates; loss of fish food sources; and loss of pool and other habitat types through changes in stream channel morphology. Impacts to aquatic invertebrates can include the smothering and infilling of the interstitial spaces normally found in clean such as gravel and cobble. This loss of habitat space can result in changes to the normal aquatic invertebrate community including changes in abundance, community structure, distribution, and in the loss of sensitive species.

In order to protect and maintain Colorado’s aquatic life, it is the policy of the Commission to apply a defined method and a uniform approach to determine whether the aquatic life use is impaired due to sediment for a specific water body. The method and approach are based on the following tenets:

[to be completed after TAC completes its work]

V. AQUATIC LIFE USE IMPAIRMENT BY SEDIMENT: NUMERICAL THRESHOLDS

It is the Commission’s intent that there should be predictable, transparent, and understandable techniques for evaluating aquatic life use impairment by sediment, and that the methods for assessing attainment of the aquatic life use should be consistent with the classifications and standards system previously adopted by the Commission.

A. Use Attainment Thresholds for Streams and Small Rivers

For Colorado’s streams and rivers with... [explain the geographic limits of the tool/s].

VI. USES OTHER THAN AQUATIC LIFE: DETERMINATION OF IMPAIRMENT BY SEDIMENT

The Colorado Water Quality Control Act and the Basic Standards use both the terms “beneficial use” and “classified use.” C.R.S. § 25-8-104(2) says, “All state waters shall be presumed to be available for beneficial uses under and in accordance with the constitution and laws of the state; and a water right includes the right to divert as defined in section 37-92-103(7), C.R.S., the waters of the state for application to beneficial use.” C.R.S. § 25-8-203 says that the Commission may classify waters and “The types of classes... may be based upon or intended to indicate...
describe any relevant characteristic, such as . . . [t]he need to protect the quality of the water for beneficial uses such as domestic, agricultural, municipal, and industrial uses, the protection and propagation of fish and wildlife, recreation, drinking water, or such beneficial uses as the commission deems consistent with the policies of section 25-8-102 and the need to minimize negative impacts on water rights.” Regulation 31.5(5) says, “Beneficial uses means those uses of state waters to be protected such as those identified in the classification system.” The Introduction to the Basic Standards (Regulation 31.3) says, “This regulation presents a classification system which establishes beneficial use categories together with basic standards (section 31.11), an antidegradation rule (section 31.8) and numeric tables which define the conditions generally necessary to maintain and attain such beneficial uses. The narrative sediment standard in Regulation 31.11 prohibits discharges that “can settle to form bottom deposits detrimental to beneficial uses.”

It is the Commission’s intent that the beneficial uses of water shall be protected from impairment by sedimentation. Because of the wide range of uses and the variety of settings and site-specific circumstances that may exist, at this time the Commission is relying on the following narrative statements as principles for assessment of the effects of sediment deposition on beneficial uses other than aquatic life:

- Clear and convincing evidence is needed to show impairment, and
- Impairment represents a significant departure from reference or expected condition.

The Commission expects that the proponents of an impairment decision will provide the Commission and hearing participants with clear and convincing evidence that:

- Establishes what the representative expected condition is (in terms of sediment deposition) for the specific water body in question;
- Demonstrates that the actual observed sedimentation condition for that specific water body is significantly different than the expected condition;
- Demonstrates that the sediment is attributable to an anthropogenic source; and;
- Documents that the excess sediment deposition could be detrimental to a beneficial use.

VII. ASSOCIATION WITH OTHER POLICIES

The Commission has other Policies and Policy-like documents that have some overlap with this Sediment Guidance, namely Policy 10-1 (Aquatic Life Use Attainment: Methodology to Determine Use Attainment for Rivers and Streams) and the Section 303(d) Listing Methodology, which is prepared for each Impaired Waters Listing cycle. Each is described below.

A. The Aquatic Life Use Attainment Policy

Policy 10-1 (Aquatic Life Use Attainment: Methodology to Determine Use Attainment for Rivers and Streams) provides the Commission’s methodology for determining whether the aquatic life use is attained in rivers and streams. The procedures detailed in the guidance rely upon direct measurement of the aquatic life use rather than on comparing existing water quality to numeric standards for individual pollutants. Policy 10-1 provides the Colorado’s Multi-Metric Index (MMI) bioassessment tool which is...
designed to detect environmental stress that result in alteration of the biological community. No specific stressors are identified because the intent of the MMI is to have a generalized tool that responds to a wide range of potential stressors. The MMI tool cannot determine if the stressor is a specific pollutant, pollution or habitat limitation (including flow). The other important part of the Aquatic Life Use Attainment Policy is that it provides biological thresholds for the aquatic life use in streams with a watershed area less than 2700 m². These thresholds establish the minimum expectations for MMI scores for waters to be deemed to be in attainment of the aquatic life use.

B. Section 303(d) Listing Methodology

The Listing Methodology is intended to provide a framework for the determination of attainment or non-attainment of assigned water quality standards and uses. The Listing Methodology generally relies on previous policy decision made by the Commission but acts as a useful repository for all the guidance about attainment/non-attainment decisions. Where guidance resides in other documents, the Listing Methodology references those documents rather than repeating the guidance. For instance, for assessment of the Aquatic Life Use, the Listing Methodology refers to the protocols establish in Policy 10-1. For assessment of numeric standards, the methods are detailed in the Listing Methodology itself. The methods in this Policy (98-1) are referred to at section III.D.7.d. as the assessment methods to be used for Listing decisions.

The Listing Methodology is reviewed and revised in preparation for the biennial development of the List of Impaired Water as required by section 303(d) of the federal Clean Water Act. The Section 303(d) List identifies water where there are exceedances of water quality standards or non-attainment of uses.

C. Permitting

Policy 98-1 is not the State’s policy for establishing sediment-related effluent limitations pursuant to 40 CFR 122.44 or Regulation 61.8(2).

As narrative standards are broader in statement than the specificity of numeric standards, caution should be exercised that their application is foreseeable and not directly nor indirectly superseding, abrogating, or impairing water rights to divert water and apply water to beneficial uses as specified in CRS 25-8-104.

Accordingly, this Policy is best applied through the 303d listing process and resulting TMDL process before permit provisions are developed.

D. Association between the Policies

[to be completed when thresholds are developed]

6 In the 2012 Listing Methodology at section III.D.7.a.
7 In the 2012 Listing Methodology at section III.D.4
APPENDICES

A. Sediment Policy Q&A Frequently Asked Questions

B. Threshold Development (how did we come up with these thresholds)
   a. Relationship between sediment deposition and Aquatic life use
   b. Central concepts
   c. Chronic threshold development
   d. Acute threshold development

C. Literature Cited