

Appendix F – DEC’s Existing Uses Evaluation Procedure (November 21, 2012 – please remove date before inclusion in final draft report)

NOTE: To provide context for a description of the terms “existing uses” and “designated uses,” the Workgroup asked DEC for a brief description of DEC’s process for determining existing uses. This description was provided by DEC and was not written by the Workgroup.

Requirement: For all waters, the state’s policy under 18 AAC 70.015(a)(1) is that “*existing water uses and the level of water quality necessary to protect existing uses¹ must be maintained and protected.*” In permitting actions, for all waters including waters in which one or more pollutants does not meet water quality criteria (“Tier 1” waters), DEC must determine that existing waters uses will be maintained. For high quality waters known as Tier 2 waters where “the quality of the water exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water,” per 18 AAC 70.015(a)(2)(C) a reduction in water quality is allowed only if DEC finds that “*the resulting water quality will be adequate to fully protect existing uses of the water.*”

How does DEC make these determinations about existing uses in its permitting decisions?

There are three permitting cases, each of which has a different method of analysis or regulations that govern the determination:

1. Water quality criteria are required to be met at the “end-of-pipe,”
2. A mixing zone is authorized and water quality criteria are required to be met at and beyond the boundary of the mixing zone, or
3. A zone of deposit is allowed and water quality criteria may be exceeded in the zone of deposit.

In the first case, where water quality criteria are to be met at the end-of-pipe before the discharge enters the receiving water, existing uses are protected. This is the case because water quality criteria are designed to protect uses: Through rigorous research and analysis, water quality criteria are set at levels that assure that uses, such as growth of aquatic organisms or drinking water, are protected. As an example, the drinking water criterion for arsenic is 10 micrograms per liter, meaning that water with up to 10 micrograms per liter arsenic can be used for drinking water. Assuming that no arsenic is present in the receiving water, if the concentration of arsenic in the discharge is below 10 micrograms per liter, then the receiving water into which the discharge flows can be used for drinking water, and the existing use for drinking water is maintained and protected.

In the second case, where a mixing zone has been authorized, the mixing zone regulation at 18 AAC 70.255(b) requires that “water quality criteria must be met at the boundary of the mixing zone.” As described above in the first case, uses are protected when water quality criteria are met, since water

¹ See definitions below of “existing uses” and “designated uses” for further clarification of water uses.

quality criteria are set to protect existing uses. Figure 1 below demonstrates that uses are protected in the water at the boundary of the mixing zone and in the area beyond the boundary of the mixing zone.

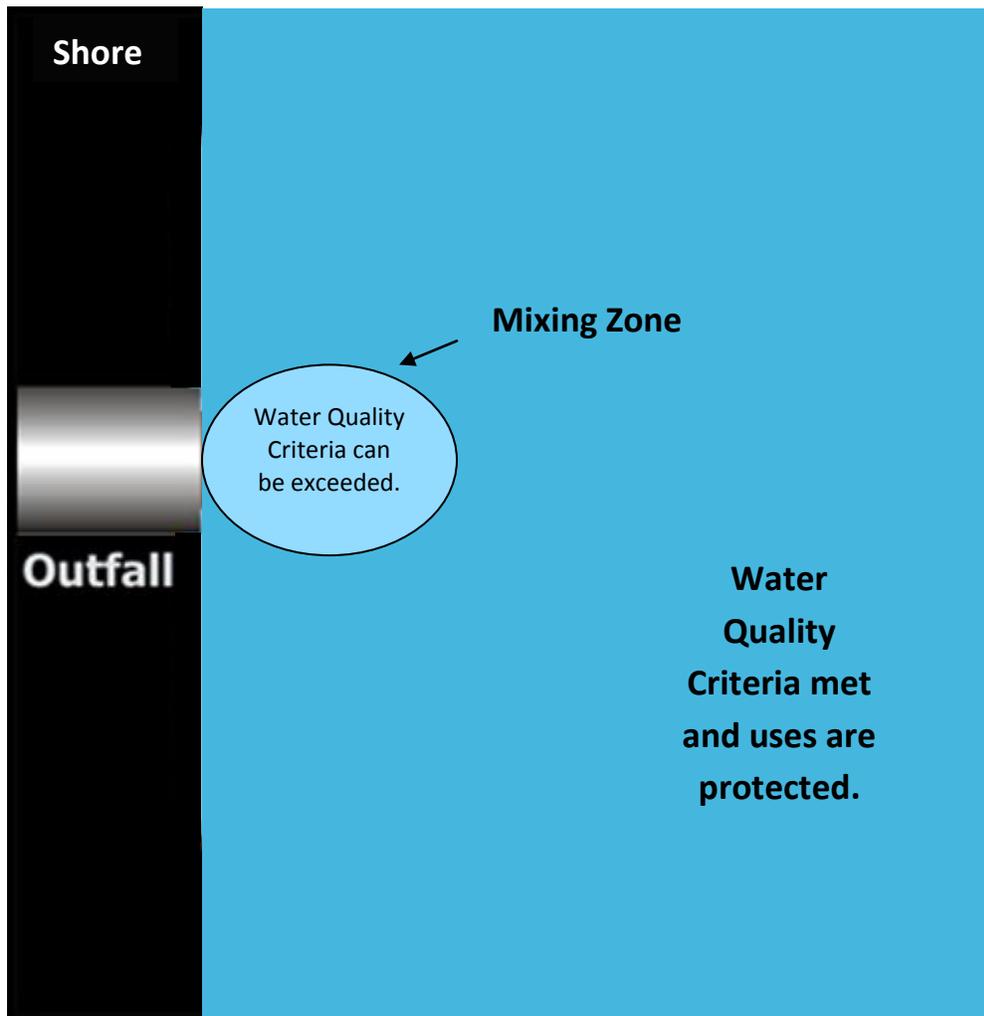


Figure 1. Water quality criteria and mixing zone.

For the water within the mixing zone, the mixing zone regulations allow water quality criteria to be exceeded. DEC uses its mixing zone analysis to determine and document that existing uses are protected inside the mixing zone. First, DEC assures that any discharge will “not impair the overall biological integrity of the waterbody” (18 AAC 70.245(a)(2)). For toxic pollutants, 18 AAC 70.255(b)(1) specifies that “a discharge may not cause or reasonably be expected to cause lethality to passing organisms in the mixing zone,” and DEC makes this determination. Finally, in DEC’s analysis of the smaller initial mixing zone surrounding the outfall, DEC demonstrates that

this smaller initial mixing zone is “sized to prevent lethality to passing organisms” (18 AAC 70.255(d)).

In its mixing zone determination, DEC examines available information on discharge volume, outfall structure and location, receiving water characteristics and other qualities related to the discharge, receiving water and biology to size the mixing zone to assure that the existing uses and biological integrity will be protected. In its fact sheet for the permitting action, DEC documents this analysis, and this analysis is then available for public review and comment during the public comment period for the permitting action.

Finally, for the third case where water quality criteria can be exceeded in a zone of deposit, the zone of deposit regulations at 18 AAC 70.210(a) state that “the antidegradation requirement of 18 AAC 70.015 may be exceeded in a zone of deposit,” so a determination that existing uses are protected is not required for the area within the zone of deposit.

Existing uses and designated uses

The discussion so far has used the term “existing uses,” but the water quality standards refer to existing uses and the related “designated uses.” Both federal and state regulations make a very similar distinction between the terms “designated use” and “existing use.” These use categories are recognized as having considerable overlap in practice, but have different purposes and rules that apply to each category.

Designated Uses

According to 40 CFR 131.3(f) and Alaska’s regulation at 18 AAC 70.990(19), **designated uses** are those specified in state water quality standards regulations for each waterbody or segment, whether or not they are being attained. 18 AAC 70.020 designates the following protected water use classes and subclasses:

Fresh water: Water supply (including drinking, culinary, and food processing; agriculture, including irrigation and stock watering; aquaculture; and industrial); water recreation (including contact recreation and secondary recreation); and growth and propagation of fish, shellfish, other aquatic life, and wildlife.

Marine water: Water supply (including aquaculture, seafood processing, and industrial); water recreation (including contact recreation and secondary recreation); growth and propagation of fish, shellfish, other aquatic life, and wildlife; and harvesting for consumption of raw mollusks or other raw aquatic life.

Water quality criteria are established for each designated use. The rigorous process for establishing water quality criteria is designed so that the use is protected when the water quality criteria are met in a given waterbody.

A designated use may be removed from a waterbody only if it is not an existing use and if appropriate justification is provided via a Use Attainability Analysis, which includes a public participation process (see 40 CFR 131.10(g) and 18 AAC 70.230).

Existing Uses

According to 40 CFR 131.3(e) and Alaska's regulation at 18 ACC 70.990(24), **existing uses** are those uses actually attained in a waterbody on or after November 28, 1975. Federal regulations require that existing uses be protected whether or not they are included in the water quality standards. With very narrow exceptions, existing uses cannot be removed (see 40 CFR 131.10(h)(1)).

Existing uses are generally a subset of **designated uses**. A use can be (and often is, in Alaska's water quality standards) designated, without that use ever actually occurring in a waterbody. In only rare instances, such as desalination of marine water for drinking water purposes, is an existing use not also a designated use.