Best Available Science

Streams– Review of Publicly Proposed Amendments to the ECA Regulations

Prepared for the City of Sammamish

by AMEC Environment & Infrastructure, Inc.

Introduction

AMEC (2012) included an overview of the Best Available Science (BAS) relevant to streams and fish and wildlife habitat conservation areas across the region, a review of related regulations in neighboring jurisdictions, a discussion of conditions unique to the City of Sammamish (City), and a list of potential amendments to the City's Environmentally Critical Areas (ECA) code based on BAS.

In response to AMEC (2012) as well as concerns with the existing ECA code, citizens have proposed several amendments to the code. The City has requested that AMEC review the requested amendments with respect to their consistency with BAS.

Below are listed the recommended ECA code amendments made by members of the public (in bold font) with a response framed in terms of Best Available Science following the comment.

Proposed Amendments, and Responses Framed in Best Available Science

Issue #3 (Public Comment #73). Should property owners have the option to delineate stream buffers based upon site conditions?

Property owners should have the option to delineate stream buffers. Currently buffers are established from the OHWM of a stream, and the size of the buffer is based on the type of stream feature. Buffers should be based upon site conditions surrounding the stream rather than a one-size-fits-all approach. Human-made improvements that constitute a de facto barrier to influence should define the barrier of the stream buffer (e.g., a house in the buffer should represent the edge of the buffer).

Response to Issue #3

There is no scientifically established or agency-approved method for evaluating the functions of a riparian buffer based on the unique characteristics of a given site. Unique site conditions will affect a buffer's ability to perform certain ecological functions, but the significance of this for establishing a regulatory buffer width is not always clear. For some functions (e.g., filtration of pollutants), a buffer might need to be larger rather than smaller if it is in poor condition. Other

functions (e.g., wildlife habitat) depend greatly on the quality of the buffer, so that buffers in good condition arguably should be increased because they would provide substantially greater benefit if they were even larger. The buffer recommendations made by Ecology and the required distances that are in the City's code and those of other jurisdictions are essentially compromises that balance the many different functions provided by buffers.

SMC 21A.50.330(6) already allows reductions of stream buffers in return for restoration of degraded conditions or incorporation of stormwater improvements in a development that would perform some of the functions of a buffer. SMC 21A.50.330(5) authorizes increased buffers "when necessary to protect streams" or "to offset buffer impacts." The existing ECA code therefore already goes a long way toward addressing the concern about "one size fits all" buffers. AMEC (2012) suggested amendments to these sections of the ECA code that would further consider unique site conditions. For buffer reductions, AMEC (2012) recommended that the code specify that mitigation should "achieve significant net improvement in the function(s) affected by the mitigation, given that other functions may be harmed by the reduction." For buffer increases, AMEC (2012) suggested that the code include criteria that the City must follow to justify the increase, such as "existing high-quality habitat that extends beyond the standard buffer width; steep slopes that reduce the buffer's efficiency in filtering sediments or pollution; highly erosive soils; the presence of sensitive species in buffer areas; and other factors." Given the lack of an approved method to establish buffers on a site-by-site basis, amending the existing code as suggested is a better way to adapt regulatory buffers to unique site conditions.

With regard to cases where a house or other improvement was previously built within what is now the regulated buffer of a stream, SMC21A.50.060(b) currently allows

> structural modification of, addition to, or replacement of legally created single detached residences and improvements constructed on existing associated legally created impervious surfaces in existence before November 27, 1990,... if the modification, addition, replacement, or related activity does not increase the existing total footprint of the residence and associated impervious surface lying within the above-described buffer or building setback area by more than 1,000 square feet over that existing before November 27, 1990, and no portion of the modification, addition or replacement is located closer to the critical area or, if the existing residence is in the critical area, extends farther into the critical area.

While regulation of existing development that affects critical areas relates to a variety of policy issues, science is only concerned about potential impacts on the critical area. The biggest scientific concern with the current code is its authorization of up to 1,000 square feet of additional development within the buffer. The undeveloped portions of these buffers still provide a variety of ecological functions, from filtration of pollutants to shade to wildlife habitat. If the

existing authorization is exercised without proper mitigation, further degradation can be expected, especially considering cumulative effects.

Additionally, some code amendment might be useful to clarify how the above language relates to the City's general standards for non-conforming land uses in SMC 21A.70.070. In this context, it is worth noting that the State of Washington's "Example Code" (Washington State Department of Community, Trade, and Economic Development, 2003) and the adopted codes of many other jurisdictions do not limit this sort of exemption to improvements existing before November 27, 1990. Instead, they allow it for all improvements "legally constructed" based on the laws in place at the time.

In summary, there is no method supported by BAS to establish buffers on a site-by-site basis. The City's existing code, with the suggested amendments, provides adequate flexibility to avoid "one size fits all" buffers. The partial exemption that the City's existing code provides for existing development located within regulated buffers addresses some of the policy issues raised by the "de facto barrier" that the public comment identifies for ecological functions provided by buffer areas. Undeveloped areas behind this "barrier," however, still provide some ecological functions. The provision for up to 1,000 square feet of additional development in the buffer area could lead to significant further degradation without proper mitigation.

Issue #4. (Public Comment #73). Should different stream buffers be allowed for developed and un-developed land?

Distinguish between developed and un-developed land when establishing stream buffers. Provide for reduced buffers in developed areas where human created improvements are currently located within a buffer, as opposed to un-developed areas where new development proposals are under consideration.

Response to Issue #4

See the answer to Issue #3. Again, the partial exemption that the City's existing code provides for existing development located within regulated buffers addresses some of the policy issues raised by this public comment.

Issue 5. Should the technical criteria used to define streams be modified?

Re-define streams as only those features described in WAC 173-22-030. Staff clarified with the commenter that the WAC definition was not the pertinent issue. Rather the concern focuses on better criteria for defining streams under the city code.

Response to Issue #5

In AMEC (2012), we stated the following:

> The City's definition of streams, SMC 21A.15.1240, excludes irrigation ditches, canals, storm or surface water runoff conveyance devices, or other entirely artificial watercourses, unless they are used by salmonids or are used to convey streams naturally occurring prior to construction of such watercourses. This is consistent with the State of Washington's definition, WAC 220-110-020(105), except that it explicitly includes artificial watercourses that are used by salmonids. This, in turn, is consistent with the Growth Management Act's direction to regulate critical areas based on their functions and values, giving "special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries." As noted above, for watercourses that ultimately feed into Lake Sammamish, an additional function of special concern would be delivery of phosphorus, which is a natural element in soils and therefore is affected by erosion and sedimentation. Some intermittent watercourses that flow down the steep hillside from the Sammamish Plateau may have resulted from the concentration of stormwater runoff in upland areas. Because these watercourses are not "constructed" themselves, they presumably would be regulated as streams. This is consistent with the above reasoning, since if they feed into Lake Sammamish they necessarily deliver phosphorus to the lake and they may provide salmonid use at least in lower reaches. Therefore, no change in the City's definition of streams is recommended based on BAS.

During AMEC's presentation of AMEC (2012) to the City Planning Commission, the question arose whether the City's definition of streams should include a "Type O," which could designate "all segments of aquatic areas that are not Type S, F or N waters and that are not physically connected to Type S, F or N waters by an aboveground channel system, stream, or wetland." This stream type would include intermittent seeps and springs, which can form at the base of hillsides or where hillsides cut across layers of outwash soils that lie above more impermeable soils, such as till or clay. The scientific literature recognizes these small, isolated waterbodies as important habitats for certain plants, amphibians, and other species. However, neither AMEC nor City staffs are aware of any such waterbodies in the City that do not connect to Type S, F, or N waters "by an aboveground channel system, stream, or wetland." Moreover, if such a waterbody should be discovered, it likely would be protected as a wetland or as part of an erosion or landslide hazard area.

In summary, based on BAS, state law, and our understanding of conditions within the City, AMEC does not recommend amending the City's existing definition of streams.

References

AMEC Environment and Infrastructure Inc. 2012. Best Available Science: Streams and Fish and Wildlife Habitat Conservation Areas. Prepared for the City of Sammamish. Bothell, WA.

Washington State Department of Community, Trade, and Economic Development. 2003. Critical Areas Assistance Handbook: Protecting Critical Areas Within the Framework of the Washington Growth Management Act. Olympia, WA.