

City of Bremerton's Critical Area Ordinance Best Available Science References

Growth Management Act Requirements

In 1995 the Washington State Growth Management Act was amended to require the use of “*Best Available Science*” (BAS) when designating and protecting Critical Areas. The Act requires that cities and counties include best available science in developing policies and development regulations to protect the functions and values of critical areas. Five critical areas are identified by the GMA (RCW 36.70A.030 [5]):

- Wetlands;
- Critical Aquifer Recharge Areas;
- Frequently flooded areas;
- Geologically hazardous areas and;
- Fish and wildlife habitat conservation areas.

In addition, RCW 36.70A.172(1) states that special consideration must be given to “measures necessary to preserve or enhance anadromous fisheries,” which refers to those species that reproduce in fresh water and migrate to salt water for some portion of their life, returning to fresh water. The term “fisheries” commonly refers to stocks of fish that are managed for commercial, recreational, cultural, or ceremonial uses (WDFW, 1997).

In response to this legislation, the State Office of Community, Trade, and Economic Development (CTED) promulgated rules to guide cities and counties in identifying and including the best available science in their critical area policies and regulations. These rules are found under WAC 365-195-900-925.

BAS Process

The City of Bremerton heavily relied upon the existing BAS literature determined by other local, state and federal natural resource agencies to meet the BAS Criteria (WAC 365-195-905(2)). Review of BAS for local applicability to the City of Bremerton was assisted by a Technical Review Committee, convened by the City and composed of representatives from local, state and natural resource agencies, and various community stakeholder groups. Committee members were guided by a duty and purpose of assisting the city in determining what BAS is appropriate to consider” in updating the CAO.

References

When applicable the references will be separated by the critical area section however many references were used in several sections and are therefore listed as general references. While this represents an extensive list of CAO citations, it may not be all the best available science currently published on the subject.

General References

King County. 2003 BAS Review

Kitsap County, Department of Community Development. 2004. Kitsap County's Draft Critical Areas Ordinance: Review of Best Available Science.

Municipal Research and Services Center of Washington. 2004. Website. City and county codes for Washington State jurisdictions available at URL = <http://www.mrsc.org/codes.aspx>

RCW 36.70A.172 Critical Areas – Designation and Protection – Best Available Science.

WAC 365-190-080 Critical Areas.

WAC 365-195-900 Best Available Science.

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

Washington State Department of Community Trade, and Economic Development. 2002. *Model Code Recommendations for Designating and Protecting Critical Areas, First Edition, 2nd Draft*. Prepared by Berryman & Henigar Inc., Adolphson Associates Inc., and GeoEngineers, Inc. OCD, Olympia, WA.

Washington State Department of Ecology. 2001. *Focus: Riparian Areas*. Washington Department of Ecology. Available online at: <http://www.ecy.wa.gov/pubs/0010023.pdf>

Washington State Department of Ecology. *Digital Coastal Zone Atlas*. Available online at: http://www.ecy.wa.gov/programs/sea/SMA/atlas_home.html

Other Jurisdictions Critical Area Ordinances and Best Available Science Reviewed

City of Auburn, Bainbridge Island, City of Bellevue, City of Edmonds, City of Everett, City of Issaquah, City of Kent, City of Mukilteo, City of Port Townsend, City of Tacoma, City of Shoreline, City of Redmond, City of Renton, Kitsap County, Pierce County

Section 20.14.300 – Wetlands

Kitsap County Surface Water Resources Map. (includes all streams, wetlands, lakes and marine waters of the Puget Sound) URL:

http://www.kitsapgov.com/dcd/gis/maps/Environmental/Streams_and_Surface_WaterD_EC2005.pdf

Kitsap County Wetland and Hydric Soils Map:

http://www.kitsapgov.com/dcd/gis/maps/Environmental/WETLANDS_HYDRIC.pdf

Washington State Department of Ecology. 2004. Guidance on Wetland Mitigation in Washington State Part 1: Laws, Rules, Policies, and Guidance Related to Wetland & Mitigation & Part 2: Guidelines for Developing Wetland Mitigation Plans and Proposals (Ecology Publications # 04-06-013a & # 04-06-013b)

Washington State Department of Ecology. 1997. Washington State Wetlands Identification and Delineation Manual (Ecology Publication # 96-94).

Washington State Department of Ecology. 2004. Washington State Wetlands Rating System – Western Washington (Ecology Publication # 04-06-025)

Washington State Department of Ecology. 1992. Wetland Buffers: Use and Effectiveness, and Appendices (Ecology Publications # 92-10 & 92-10a)

Washington State Department of Ecology & Washington State Department of Fish and Wildlife. 2005. Wetlands in Washington State – Volume 1: A Synthesis of the Science & Volume 2: Guidance for Protecting and Managing Wetlands (Ecology Publications #05-06-006 & #05-06-008)

Section 20.14.400 – Critical Aquifer Recharge Areas

AGI Technologies Water Resource Group. 1996. Technical Memorandum #3 Conceptual Hydrogeological Model Gorst Creek Basin. Publication reference number 15842.001

Bremerton-Kitsap County Board of Health Ordinance 2-1991, Rules and Regulations for Public and Private Water Supplies.

Kitsap County Critical Aquifer Recharge Area Map. URL:

http://www.kitsapgov.com/dcd/gis/maps/environmental/Aquifer_Rechage_Areas.pdf
(Accessed 11/24/05)

Kitsap Public Utilities District. Issue Paper: *Well Construction and Decommissioning*. Volume 4 Appendix 2. May 20, 1997.

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Puget Sound Action Team. 2005 “*Low Impact Development Technical Guidance Document for Puget Sound*” URL: http://www.psat.wa.gov/Publications/LID_tech_manual05/LID_manual2005.pdf

RCW 18.104 - Water Well Construction Act (1971)

RCW 43.20. Public Water Systems – Penalties and Compliance.

RCW 70.119A. State Board of Health.

U.S. Environmental Protection Agency. 2003. “Potential sources of drinking water contamination index. URL: <http://www.epa.gov/safewater/swp/sources1.html> (Accessed Nov. 2005)

U.S. Environmental Protection Agency; Office of Ground-Water Protection; Office of Water. 1990. “Citizen’s Guide to Ground-Water Protection”

WAC 173-160 - Minimum Standards for Construction and Maintenance of Wells.

WAC 246-290 - Drinking Water Regulations - State Board of Health

Washington State Department of Ecology. 2000. Guidance document for the establishment of critical aquifer recharge area ordinances. (Ecology Publication # 05-10-028)

Washington State Department of Health. 2005. Washington’s Source Water Assessment Program. DOH publication # 331-148

Section 20.14.500 – Frequently Flooded Areas

US Department of Housing and Urban Development. 1979. Flood Boundary and Floodway Map, panel 15.

Section 20.14.600 – Geologically Hazardous Areas

Kitsap County, Department of Community Development. 2003. Kitsap County’s Draft Critical Areas Ordinance: Review of Best Available Science – Geologically Hazardous Areas. Port Orchard, WA.

Kitsap County Geologically Hazardous Areas Map. URL: http://www.kitsapgov.com/dcd/gis/maps/Environmental/Geohazards_DEC2005.pdf

Soil Survey of Kitsap County Area, Washington. United State Department of Agriculture, Soil Conservation Service in cooperation with Washington State Department of Natural Resources and Washington State University, Agricultural Research Center.

GIS Data Layer, Quaternary Geology and Stratigraphy of Kitsap County. Based on Jerald Deeter 1979 thesis (WWU).

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Dr. Ed Gilman, University of Florida. *Pruning Shade Trees In The Landscape.*

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Thurston County Best Available Science / Guidance Geologic Hazard Areas. July 2005.

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<http://www.ecy.wa.gov/programs/sea/pubs/93-30/index.html>

Washington Department of Ecology. Managing Vegetation on Coastal Slopes.

<http://www.ecy.wa.gov/programs/sea/pubs/93-31/intro.html>

USGS Seismic Hazards Investigation in Puget Sound (SHIPS). A U.S. / Canadian

Consortium to provide public information for mitigating a potential earthquake disaster in the Pacific Northwest. <http://walrus.wr.usgs.gov/ships/>

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http://www.pnsn.org/INFO_GENERAL/faq.html.

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<http://earthquake.usgs.gov/regional/qfaults/wa/sea.html>.

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Tsunami Inundation Map of the Port Townsend, Washington, Area. Washington State DNR. August, 2002.

Tsunami Hazard Map of the Elliot Bay Area, Seattle, Washington: Modeled Tsunami Inundation from a Seattle Fault Earthquake. Walsh, Titov, Venturato, Mofjeld, Gonzalez. 2003.

Section 20.14.700 – Fish and Wildlife Habitat

Bellevue Critical Areas Update. *Wildlife BAS Paper*. March 2003. URL:
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Kitsap County Fish and Wildlife Habitat Map. URL:
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