

**WHATCOM COUNTY
CRITICAL AREAS ORDINANCE
TITLE 16
CHAPTER 16.16**

**Whatcom County Planning and
Development Services**

Adopted by Whatcom County Council

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TITLE 16
Chapter 16.16
CRITICAL AREAS ORDINANCE OF WHATCOM COUNTY, WASHINGTON

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CRITICAL AREAS ORDINANCE (WCC 16.16)

ARTICLE 1 PURPOSE AND INTENT

16.16.100 Purpose and Intent

- A. The purposes of this chapter are to carry out the goals of the Whatcom County comprehensive plan and the State of Washington Growth Management Act (RCW 36.70A) and its implementing rules by designating and classifying critical areas, and by protecting the functions and values of critical areas and the ecological processes that sustain them while allowing for appropriate economically beneficial or productive use of land and property. Critical areas regulated under this chapter include geologically hazardous areas, frequently flooded areas, critical aquifer recharge areas, wetlands, and fish and wildlife habitat conservation areas. This chapter seeks to maintain harmonious relationships between human activity and the natural environment.
- B. By regulating development and minimizing critical area alterations, this chapter seeks to:
1. Protect the public from harm due to landslides, earthquakes, erosion, volcanic events, flooding, and other natural hazards.
 2. Minimize unnecessary maintenance of public facilities, and costs associated with property damage, emergency rescue relief operations, and environmental degradation.
 3. Ensure there are no adverse impacts to the quality and quantity of water resources.
 4. Alert appraisers, assessors, real estate agents, owners, potential buyers or lessees, and other members of the public to natural conditions that pose a hazard or otherwise limit development.
 5. Protect wetlands, floodplains, critical aquifer recharge areas, and habitat conservation areas by applying the Best Available Science to ensure no net loss of ecological functions and values.
 6. Protect species listed as threatened or endangered and their habitats.
 7. Protect unique, fragile and/or valuable elements of the environment, including ground and surface waters, wetlands, anadromous fish species, shellfish, and other fish and wildlife and their habitats.
 8. Provide County officials with information to approve, condition, or deny project proposals.
 9. Protect property rights, while allowing for economic development including agriculture, and allowing for the development and maintenance of adequate and appropriate public services and essential public facilities.

ARTICLE 1 – PURPOSE AND INTENT

10. Prevent adverse and cumulative environmental impacts to critical areas and mitigate unavoidable impacts.
 11. Coordinate Whatcom County's critical area protection activities and programs with those of other jurisdictions.
 12. Coordinate environmental reviews and permitting of proposals with other departments and agencies to avoid duplication and delay.
 13. Allow for reasonable use of property in accordance with the provisions of WCC 16.16.270.
 14. Establish critical area protection standards and procedures that are consistent with state and federal regulations pertaining to critical areas.
- C. The goals, policies and purposes set forth in this chapter serve as a basis for exercise of the County's substantive authority under the State Environmental Policy Act (SEPA) and the County's SEPA rules.
- D. The County's enactment or enforcement of this chapter shall not be construed for the benefit of any individual person or group of persons other than the general public.
- E. Nothing in this chapter is intended to preclude or discourage beneficial actions that protect, restore, and/or maintain critical areas or minimize risks associated with critical areas.
- F. Consistent with Whatcom County's high standard of staff conduct, County staff observe all applicable Federal and Washington laws regarding entry onto privately owned property.

ARTICLE 2 ADMINISTRATIVE PROVISIONS

16.16.200 Authority

This Chapter is adopted under the authority of Chapters 36.70 and 36.70A, RCW and Article 11 of the Washington State Constitution.

16.16.205 Authorizations Required

- A. Prior to issuing a permit, the County shall determine if the proposed activity or use is permitted pursuant to this chapter. No land use development permit, construction permit, or land division approval required by County ordinance shall be granted until the County decision-maker has determined that the applicant has complied with the applicable provisions of this chapter including the mitigation standards set forth in WCC 16.16.260.
- B. Authorizations required under this chapter overlay other permit and approval requirements of the Whatcom County Code. Critical areas review pursuant to this chapter shall be conducted as part of the underlying permit or approval. Any proposed critical area alteration that does not require other County project permits or approvals, such as variances and reasonable use exceptions, must comply with the substantive and procedural requirements of this chapter and the procedural requirements of WCC 2.33.
- C. The requirements of this chapter shall apply concurrently with review conducted under the State Environmental Policy Act (SEPA) (RCW 43.21C), as locally adopted (WCC 16.08). Any conditions required pursuant to this chapter shall be coordinated with the SEPA review and threshold determination.
- D. Areas characterized by a particular critical area may also be subject to other regulations established by this chapter due to the overlap or multiple functions of some critical areas. When one critical area adjoins or overlaps another, the more restrictive standards shall apply.

16.16.210 Applicability and Severability

This chapter shall be consistently applied to any alteration or development within geographical areas of unincorporated Whatcom County that meet the definition and criteria for critical areas and critical area buffers as set forth in this chapter. No development shall be constructed, located, extended, modified, converted, or altered, or land subdivided without full compliance with this chapter. Should any section or provision of this chapter be declared invalid, such decision shall not affect the validity of this chapter as a whole.

16.16.215 Relationship to Other Jurisdictions

Permit applicants are responsible for complying with all federal, state, tribal, and local regulations that may pertain to a proposed development. Compliance with the provisions of this chapter does not necessarily constitute compliance with other regulations and permit requirements, provided that the following shall apply:

- A. In cases where other agencies have jurisdiction over critical areas and the Technical

Administrator determines that the permit conditions imposed by such agencies satisfy the requirements of this chapter, those permit conditions may be substituted as the conditions of approval for the requirements of this chapter. Such agencies may include, but are not limited to, the Lummi Nation; the Nooksack Tribe; the United States Army Corps of Engineers, the United States Environmental Protection Agency, the United States Fish and Wildlife Service; the National Marine Fisheries Service or NOAA Fisheries; and the Washington State Departments of Ecology, and Fish and Wildlife.

- B. The County shall make findings required by WCC 2.33 and WCC 16.16.250 when adopting conditions of another jurisdiction's permit. Such requirements shall be a condition of critical area approval and enforceable by the County. In the event that there is a conflict between permit requirements and the standards of this chapter, the more restrictive standards shall apply.
- C. The County shall notify the applicant in writing when this provision applies.

16.16.220 Identification and Mapping of Critical Areas

The County has identified critical areas, and areas where the conditions under which critical areas typically occur, and/or have the potential to occur. The approximate location and extent of critical areas within the County's jurisdiction are shown on maps, which shall be available at the Planning and Development Services Department for public inspection. Property owners, the Technical Administrator, and/or members of the public may use these maps as a general guide, but the maps do not provide a comprehensive accounting of areas subject to this chapter nor do they provide a definitive critical area designation. Critical area locations and boundaries shown on the County's maps are approximate and do not include buffers that may be associated with critical areas. Field investigation, analysis by a qualified professional, and/or consideration of other sources of credible scientific information may be required to confirm the presence or absence of a critical area and its boundaries and buffers. The County shall update the maps on a regular and consistent basis as new information becomes available.

16.16.225 Regulated Activities

- A. The following activities shall be subject to the provisions of this chapter when they occur within critical areas or their buffers:
 - 1. Clearing, grading, dumping, excavating, discharging, or filling with any material. This includes creating impervious surfaces.
 - 2. Constructing, reconstructing, demolishing or altering the size of any structure or infrastructure, subject to the provisions for a non-conforming structure pursuant to WCC 20.83, SMP 23.50.07 and WCC 16.16.275.
 - 3. Any other activity for which a County permit is required, excluding permits for interior remodeling.
- B. Alteration of critical areas and/or buffers is prohibited except when:
 - 1. Alteration is approved pursuant to the reasonable use or variance provisions of WCC 16.16.270; or

2. Alteration is necessary to accommodate an essential public facility or public utility where no feasible alternative location will accommodate the facility and the facility is located, designed, and constructed to minimize and, where possible, avoid critical area disturbance to the maximum extent feasible; or
3. Alteration is necessary to accommodate an approved water-oriented use and any associated development/activity and/or the development activities listed in SMP 23.90.13.B.7.a when permitted in accordance with the Whatcom County Shoreline Management Program (SMP), provided that such development is operated, located, designed and constructed to minimize and, where possible, avoid critical area disturbance to the maximum extent feasible; or
4. Alteration is part of an essential element of an activity allowed by this chapter and all feasible measures to avoid and minimize impacts have been employed. Such feasible measures shall include, but not be limited to, clustering where permitted by zoning and as appropriate to protect critical areas. The purposes of clustering shall be to minimize adverse effects of development on critical area functions and values, minimize land clearing, maintain soil stability, preserve native vegetation, maintain hydrology, and mitigate risk to life and property; or
5. Alteration is associated with an exempt activity under WCC 16.16.230, or is allowed pursuant to the notification provisions of WCC 16.16.235, or is allowed pursuant to the specific regulatory standards for each designated critical area, as enumerated in the subsequent articles of this chapter; or
6. Alteration is associated with an alternative mitigation plan or watershed-based management plan approved pursuant to 16.16.260.E.

16.16.230 Exempt Activities

The following activities as specified are exempt from the provisions of this chapter:

- A. Class I, II, III and IV-Special forest practices conducted in accordance with the applicable standards of the Washington State Forest Practices Act, WAC 222-16, except where either of the following applies:
 1. The lands have been or are proposed to be converted to a use other than commercial forest product production; or
 2. On lands which have been platted after January 1, 1960, as provided in RCW 76.09.050 and RCW 76.09.240.
- B. Maintenance of existing, lawfully established vegetation, landscaping and gardens within a regulated critical area or its buffer, including but not limited to, cutting, mowing lawns, weeding, removal of noxious and invasive species, harvesting and replanting of garden crops, pruning and planting of non-invasive ornamental vegetation or indigenous native species to maintain the general condition and extent of such areas, provided that native growth protection areas, mitigation sites, or other areas protected via conservation easements or similar restrictive covenants are not covered by this exception.

- C. Low impact activities such as hiking, canoeing, viewing, nature study, photography, hunting, fishing, education or scientific research.
- D. Activities undertaken to comply with a United States Environmental Protection Agency superfund related order, or a Washington Department of Ecology order pursuant to the Model Toxics Control Act, or a Department of Homeland Security order that specifically preempts local regulations in the findings of the order.
- E. Maintenance and/or repair of lawfully established single-family residences and appurtenant features provided that the activity does not further alter, impact, or encroach upon critical areas or buffers or further affect their functions. The maintenance activity shall not result in increased risk to life or property.
- F. The landowner may cut hazard trees within critical areas and buffers.

16.16.235 Activities Allowed With Notification

The following activities as specified are authorized within critical areas and buffers provided that the applicant provides a written notification to the Technical Administrator (see Appendix B). The notification will provide specific information describing the activity and the mitigation to be implemented to document that the activity will not result in increased risk to public health, safety and welfare, that adverse impacts to critical areas are minimized, and that disturbed areas are restored as soon as possible following the activity. Notification shall be submitted to the Technical Administrator at least ten (10) full business days prior to initiating work. Unless otherwise specified, notification shall be valid for one year per activity provided that there is no change in the scope of the project including, but not limited to, the location and/or extent of the activity allowed under the notification process. Upon receipt of the notification, the County may provide guidance on best management practices for tree and vegetation protection, construction management, erosion and sedimentation control, water quality protection, and use of chemical applications to be used in the execution of the following activities:

- A. Emergency construction or activity necessary for the immediate preservation of the public health, safety and welfare as determined by the Technical Administrator, provided that:
 - 1. An emergency is an unanticipated and imminent threat to public health, safety or the environment that requires immediate action within a time period too short to allow full compliance with this chapter.
 - 2. Emergency construction does not include development of new permanent protective structures where none previously existed. Where the Technical Administrator determines that new protective structures are the appropriate means to address an emergency situation, the project proponent shall either obtain any permits that would have been required absent an emergency, pursuant to 90.58 RCW, WAC 173-27 or this chapter, or remove the structure upon abatement of the emergency situation.
 - 3. Within the jurisdiction of the Whatcom County Shoreline Management Program (WCC Title 23) all emergency construction shall be consistent with the policies and procedural requirements of WCC Title 23 and this chapter.
 - 4. The applicant shall make a reasonable attempt to contact the Technical Administrator prior to activity. Provided that when prior notice is not feasible

notification of the action shall be submitted to the Technical Administrator as soon as the emergency is addressed and no later than fourteen (14) days following such action.

- B. Maintenance, operation and/or repair of existing infrastructure improvements, including dikes and drainage ditches, rights-of-way, trails, roads, fences, and utilities provided that the activity does not further alter, impact, or encroach upon critical areas or buffers or further affect their functions. The maintenance activity shall not result in increased risk to life or property. Maintenance shall be allowed pursuant to the provisions set forth in this chapter provided that:
1. The applicant shall submit to the Technical Administrator a written description of the maintenance activity with all of the following general information:
 - a. Type, timing, frequency and sequence of maintenance activity to be conducted;
 - b. Type of equipment to be used (hand or mechanical);
 - c. Manner in which the equipment will be used; and
 - d. Best management practices to be used.
 2. The applicant's written description shall be valid for up to five years provided that there is no significant change in the type or extent of maintenance activity.
- C. Select vegetation removal or pruning in a manner that minimizes unnecessary disturbance and prevents adverse effects on soil stability, fish or wildlife habitat, water quality, or water quantity provided that no vegetation shall be removed from a wetland, habitat conservation area, coastal or riverine erosion hazard area, or landslide hazard area or their buffers except for lawn, pasture, ornamental vegetation, and similar introduced vegetation.
- Cut vegetation shall be left within the critical area or buffer where practicable unless removal is warranted due to the presence of an established disease infestation or other hazard, or because of access or maintenance needs if the area is a utility or access right-of-way.
- D. Installation of navigation aids and boundary markers in accordance with applicable state and federal laws.
- E. Installation of mooring buoys in accordance with the Department of Fish and Wildlife design guidelines and the Whatcom County Shoreline Management Program (WCC Title 23).
- F. Routine site investigation work in wetlands, landslide hazard areas, and riverine and coastal erosion hazard areas. This includes geotechnical soil borings, groundwater monitoring wells, percolation tests, and similar or related activities necessary for land use application submittals. Land survey and shallow soil test pits dug in conjunction with wetland delineation studies do not require notification.
- G. Clearing, pruning, and re-vegetation of buffer areas, except landslide hazard areas and buffers and riverine and coastal erosion hazard areas and buffers, for view purposes provided:

1. This allowed activity shall not be conducted more than once every 10 years for any individual residential property.
2. A window or view opening is limited to the minimum necessary for view purposes and shall not exceed fifteen percent (15%) of buffer length, unless the applicant can demonstrate to the Technical Administrator's satisfaction that a larger dimension is warranted because of slope or other site considerations. Trees greater than 12 inches in diameter at breast height shall be preserved, but may be shaped, windowed/thinned or pruned.
3. Clearing shall not take place where increased risks or adverse impacts, including cumulative impacts, to critical area functions and values are likely to occur.
4. Low growing native vegetation shall be retained and/or planted in the view corridor to provide habitat, stabilize the area, and achieve dense growth.
5. This provision does not apply to open space set aside in a subdivision or other approval to which specific conditions are attached that prohibit clearing of vegetation without a written approval or permit.

View areas established under this section shall be considered lawfully established and may be maintained as provided for in 16.16.230.B.

- H. Fish, wildlife, and/or wetland restoration or enhancement activities not required as project mitigation provided that the project is approved by the U.S. Fish and Wildlife Service, the Washington State Department of Ecology, Washington State Department Fish and Wildlife, or other appropriate local, state, federal, or tribal jurisdiction.
- I. Household herbicides, pesticides, and fertilizers may be used in critical areas buffers, but not in critical areas, when applied at times and rates specified on the label in accordance with Washington State Department of Agriculture and other applicable regulations.
- J. Routine maintenance of drainage channels on agricultural lands, provided that all of the following are met:
 1. The maintenance is necessary to support ongoing agricultural operations;
 2. The maintenance activity does not expand the dimensions of the drainage channel beyond the original, lawfully established dimensions;
 3. The agricultural activities are conducted pursuant to an approved farm conservation plan prepared pursuant to WCC 16.16.290;
 4. The farm operator obtains a Hydraulic Project Approval (HPA), if required from the Washington Department of Fish and Wildlife (WDFW), prior to the maintenance activity; and
 5. The farm operator provides a copy of the HPA to the Technical Administrator as part of the written notification. No other written notification is needed.

- K. Alteration or removal of beaver built structures two years old or less, provided that:
 - 1. There is no adverse impact to wetland or river or stream functions.
 - 2. The property owner obtains an HPA from WDFW prior to the maintenance activity.
 - 3. The property owner provides a copy of the HPA to the Technical Administrator as part of the written notification.

16.16.240 Technical Administrator and Hearing Examiner Authority

The Technical Administrator is the Whatcom County Director of Planning and Development Services or his/her designee. The Hearing Examiner is appointed by the County Council. The Technical Administrator and the County Hearing Examiner shall administer and enforce the provisions of this chapter pursuant to the following:

- A. The Technical Administrator shall have the primary responsibility for reviewing development proposals for compliance with this chapter and is authorized to approve, deny, or condition permits in accordance with the standards set forth herein. The Technical Administrator shall also have the following authority:
 - 1. Authority to convene an interdisciplinary team to assist in reviewing development proposals or to solicit review from outside experts in accordance with WCC 16.16.245.
 - 2. Authority to grant, condition, or deny reasonable use permits for single-family residences proposed to be located outside of geologically hazardous areas or for other development proposals that would affect critical area buffers, but not the critical areas themselves.
 - 3. Authority to serve a stop work order pursuant to WCC 16.16.285 upon a person undertaking activity within a critical area or buffer in violation of this chapter.
 - 4. Any additional responsibility and/or authority specifically provided for in the subsequent articles of this chapter.
- B. The Technical Administrator's authority shall transfer to another County decision-maker when another decision-maker is specified for a separate project permit. In such cases, the Technical Administrator shall ensure that all procedural requirements of this chapter are met and shall make a recommendation to the designated decision maker as to how the provisions of this chapter apply to the permit action, including project permits.
- C. The Whatcom County Hearing Examiner is hereby vested with responsibility and authority to hear appeals and perform the following duties:
 - 1. Authority to grant or deny variances.
 - 2. Authority to grant, condition, or deny reasonable use permits for all non single-family developments affecting critical areas and for all developments in geologically hazardous areas.

3. Authority to decide on appeals of administrative decisions including, but not limited to, variance and reasonable use permits issued by the Technical Administrator.
 4. Authority to hold public hearings, pursuant to WCC 20.84 and 20.92.
- D. In granting, revising, or extending a permit, the Technical Administrator, or Hearing Examiner, as appropriate, may attach such conditions, modifications, or restrictions thereto regarding the location, character, and other features of the proposed development deemed necessary to assure that the development is consistent with criteria set forth in this chapter. In cases involving unusual circumstances or uncertain effects, a condition may be imposed to allow for future review or reevaluation to assure conformance with this chapter. The Technical Administrator and/or Hearing Examiner shall render a final decision in accordance with the timelines established in WCC 2.33.090 and WCC 20.92.430, as applicable. All decisions of the Technical Administrator and Hearing Examiner may be appealed pursuant to WCC 20.84.240 and 20.92.600.

16.16.245 Interdisciplinary Team

The Technical Administrator may call upon outside expertise including an interdisciplinary team if the Technical Administrator determines that additional technical assistance is required to assess a critical areas development proposal or ensure the application of Best Available Science.

- A. The interdisciplinary team shall include the applicant and/or their technical representative, local, state, or federal agency or tribal representatives with expertise in the field and/or independent qualified professionals with expertise relating to the critical area issue.
- B. The functions of the interdisciplinary team are to field check and verify critical area determinations/boundaries and assess species/habitat presence by providing written peer review of the information included with an application, identify areas of concern in the application of Best Available Science, provide professional opinions and recommendations relevant to the provisions of this chapter, and help focus the preparation of subsequent reports and environmental documentation on the most relevant issues.
- C. The Technical Administrator will coordinate this effort and seek advice from the team.
- D. In lieu of convening an interdisciplinary team, the County may require third party review by a qualified professional for any development proposal, mitigation plan, mitigation bank proposal, or other project for which additional technical expertise is needed. The cost of the third party review shall be the permit applicant's responsibility.

16.16.250 Submittal Requirements and Critical Area Review Process

- A. All applicants are encouraged to contact and/or meet with the Technical Administrator prior to submitting an application subject to this chapter. The purpose of this meeting shall be to discuss the critical area standards and procedures; to review conceptual site plans prepared by the applicant; to discuss appropriate investigative techniques and methods; and to determine reporting requirements.
- B. Review and approval of a proposed development within a critical area may be initiated through the application for any project permit in Whatcom County. If another authority does not require a project permit, application shall be made pursuant to WCC 2.33.

- C. The Technical Administrator shall be responsible, in a timely manner, to make one of the following determinations regarding critical areas review:
1. **Initial Determination.** Upon receipt of a permit application, the Technical Administrator shall use Best Available Science, including but not limited to the County's critical areas maps, his/her field investigation results, his/her own knowledge of the site, information from appropriate resource agencies, or documentation from a scientific or other credible source to determine if the project is more probably than not located within a critical area or its buffer. The Technical Administrator may request that the applicant submit a critical area identification form provided by the County to assist in the initial determination.
 2. **Determination of Compliance.** If the applicant demonstrates to the satisfaction of the Technical Administrator that the project meets the provisions of this chapter and is not likely to adversely affect critical areas or buffers, the Technical Administrator shall issue written verification that the proposal complies with the chapter. Written verification shall be included in the project review record for the underlying permit, or issued in accordance with WCC 2.33, and no further critical areas review is required.
 3. **Need for Additional Assessment.** If the proposed activity does not meet the criteria of 16.16.250.C.2 and would more probably than not affect a critical area or buffer, the Technical Administrator shall require confirmation of the presence or absence of critical areas through site inspection by a qualified professional or other appropriate means consistent with Best Available Science, and shall notify the applicant in writing of the need to prepare a critical area assessment report.
 4. **Decision to Approve, Condition or Deny.** The Technical Administrator shall review all pertinent information pertaining to the proposed development and shall approve, condition, or deny the permit based on their review. Such determinations shall be provided to the applicant in writing.
- D. The Technical Administrator may waive the requirement for critical areas review under this chapter when he/she determines that all of the following conditions are met:
1. The proposed development activity is located on a parcel that received a previous critical areas review and appropriate County permits were issued;
 2. All critical areas on the parcel have been identified and delineated and the effects of the proposed development activity have been thoroughly considered in accordance with the regulations in effect at the time;
 3. The activity is in compliance with all permit conditions including mitigating measures, as applicable, that were imposed as part of the prior review and there are no outstanding violations of conditions that were imposed as part of the previous review;
 4. The prior permit has not expired;
 5. The development activity involves a use that is equally or less intensive than the

development activity that was subject to the prior permit. Land use intensity shall be based on factors including development density, critical areas impacts, impervious surface, noise, glare, dust, hours of operation, and traffic.

- E. Upon the applicant's request, the Technical Administrator shall provide brief written findings of fact to support the decision made.

16.16.255 Critical Areas Assessment Reports

- A. When the Technical Administrator determines a proposed development is within, abutting, or is likely to adversely affect a critical area or buffer pursuant to the provisions of this chapter, he/she shall have the authority to require a critical areas assessment report. A qualified professional, as defined by this chapter, shall prepare the report consistent with Best Available Science. The intent of these provisions is to require a reasonable level of technical study and analysis sufficient to protect critical areas. The analysis shall be commensurate with the value or sensitivity of a particular critical area and relative to the scale and potential impacts of the proposed activity.
- B. The assessment report shall:
 - 1. Demonstrate that the submitted proposal is consistent with the purposes and specific standards of this chapter;
 - 2. Describe all relevant aspects of the development proposal and critical areas adversely affected by the proposal including any geological hazards and risks associated with the proposal, and assess impacts on the critical area from activities and uses proposed; and
 - 3. Identify proposed mitigation and protective measures as required by this chapter.
- C. The Technical Administrator shall review the critical areas assessment report for completeness and accuracy and shall consider the recommendations and conclusions of the critical areas assessment report to assist in making administrative decisions concerning approval, conditional approval, or denial of the subject project and to resolve issues concerning critical areas jurisdiction and appropriate mitigation and protective measures.
- D. Critical areas assessment reports shall generally be valid for a period of five (5) years. Future land use applications may require preparation of new or supplemental critical area assessment reports unless it can be demonstrated to the satisfaction of the Technical Administrator that the previously prepared report is adequate for current analysis. The Technical Administrator may also require the preparation of a new critical area assessment report or a supplemental report when new information is found demonstrating that the initial assessment is in error. If the Technical Administrator requires more information in the report, he/she shall make the request in writing to the applicant stating what additional information is needed and why.
- E. The Technical Administrator may reject or request revision of the field and literature findings and conclusions reached in a critical areas assessment report when the Technical Administrator can demonstrate that the assessment is inaccurate, incomplete, or does not fully address the critical areas impacts involved.

- F. To avoid duplication, the reporting requirements of this chapter shall be coordinated if more than one critical area assessment report is required for a site or development proposal.
- G. Applicants shall provide reports and maps to the County in an electronic format that allows site data to be incorporated into the County critical areas database, provided that the County may waive this requirement for single-family developments. Applicants are encouraged to coordinate with the Technical Administrator regarding electronic submittal guidelines. This requirement shall not be construed as a requirement to use specific computer software.
- H. At a minimum, a critical areas assessment report shall include the following information:
 - 1. A site plan showing the proposed development footprint and clearing limits, all relevant critical areas and buffers within and abutting the site, a written description of the project, an examination of project on-site design alternatives, and an explanation of why the proposed activity requires a location on, or access across, a critical area and why alternatives are not feasible;
 - 2. A written description of the critical areas and buffers on or abutting the site, including their size, type, classification or rating, condition, disturbance history, and functions and values. Projects in frequently flooded areas must comply with the reporting requirements of WCC Title 17. Projects on or adjacent to geologically hazardous areas shall identify the type of hazard and assess the associated risks posed by the development or that the development may be subject to;
 - 3. An analysis of potential adverse critical area impacts associated with the proposed activity including, but not limited to, effects related to clearing, grading, noise, light/glare, drilling, damming, draining, creating impervious surface, managing storm water, releasing hazardous materials, other alterations;
 - 4. An analysis of how critical area impacts or risks will be avoided and/or minimized, and/or an analysis of the proposed measures to prevent or minimize hazards. When impacts cannot be avoided, the report shall include a plan describing mitigation that will be provided to replace critical area functions and values altered as a result of the proposal. The mitigation plan shall be consistent with the provisions of WCC 16.16.260 and the other applicable articles of this chapter;
 - 5. The dates, names, and qualifications of the persons preparing the report and documentation of analysis methods including any fieldwork performed on the site; and
 - 6. Additional reasonable information requested by the Technical Administrator for the assessment of critical areas impacts or otherwise required by the subsequent articles of this chapter.

16.16.260 General Mitigation Requirements

Developments permitted pursuant to this chapter that adversely impact or alter a critical area or buffer shall include mitigation sufficient to minimize risks associated with geologic hazards and/or maintain, or replace critical areas functions and values. Any proposed development that cannot adequately mitigate critical area impacts as determined by the Technical Administrator shall be

denied.

A. Mitigation Sequence

1. When an alteration or impact to a critical area is proposed, the applicant shall demonstrate that all reasonable efforts have been taken to mitigate impacts in the following prioritized order:
 - a. Avoiding the adverse impact altogether by not taking a certain action or parts of an action, or moving the action.
 - b. Minimizing adverse impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology and engineering, or by taking affirmative steps to avoid or reduce adverse impacts.
 - c. Rectifying the adverse impact by repairing, rehabilitating or restoring the affected environment.
 - d. Reducing or eliminating the adverse impact over time by preservation and maintenance operations during the life of the action.
 - e. Compensating for the adverse impact by replacing, enhancing, or providing similar substitute resources or environments and monitoring the adverse impact and the mitigation project and taking appropriate corrective measures.
2. Mitigation for individual projects may include a sequenced combination of the above measures as needed to achieve the most effective protection or compensatory mitigation for critical area functions.

B. Mitigation Plan

1. Compensatory mitigation shall be provided for all unavoidable adverse alterations to a critical area or buffer. A mitigation plan shall be developed in accordance with an approved critical area assessment report and be consistent with Best Available Science. Where appropriate, the mitigation plan should be compatible with watershed and recovery planning goals for Whatcom County. The intent of these provisions is to require a level of technical study and analysis sufficient to protect critical areas and/or protect developments and occupants from critical areas involving hazards. The analysis shall be commensurate with the value or sensitivity of a particular critical area and relative to the scale and potential impacts of the proposed activity.
2. The mitigation plan shall provide for construction, maintenance, monitoring, and contingencies as required by conditions of approval and consistent with the requirements of this chapter.
3. The mitigation plan shall be prepared by a qualified professional, provided that the Technical Administrator may waive the requirement to hire a qualified professional to prepare a mitigation plan when the required mitigation involves standard planting or enhancement practices. The waiver shall not be granted for mitigation practices

involving wetland creation, rehabilitation and/or restoration.

4. The mitigation plan shall contain the following information:
 - a. A description and scaled drawings of the activities proposed to reduce risks associated with geologic hazards and/or flooding, and/or to mitigate for impacts to critical area functions and values. This shall include all clearing, grading/excavation, drainage alterations, planting, invasive weed management, installation of habitat structures, irrigation, and other site treatments associated with the development activities.
 - b. Specific information on construction of the proposed mitigation activity including timing, sequence, equipment needs, and best management practices.
 - c. A description of the functions and values that the proposed mitigation area(s) shall provide, and/or a description of the level of hazard mitigation provided.
 - d. The goals, objectives, and performance standards that the proposed mitigation action(s) shall achieve.
 - e. A description of how the mitigation area(s) will be evaluated and monitored to determine if the performance standards are being met.
 - f. A program and schedule for construction and post-construction monitoring of the mitigation project.
 - g. An evaluation of potential adverse impacts on adjacent property owners resulting from the proposed mitigation and measures to address such impacts. Mitigation projects shall not result in adverse impacts to adjacent property owners.
 - h. Identification of potential courses of action, and any corrective measures to be taken if monitoring or evaluation indicates that project performance standards are not being met.
 - i. Plan sheets showing the edge of the critical area and buffer area. The affected area shall be clearly staked, flagged, and/or fenced prior to and during any site clearing and construction to ensure protection for the critical area and buffer during construction.
 - j. A description of other permits and approvals being sought, including the need for permits from state and/or federal agencies.
 - k. Additional information as required by the subsequent articles of this chapter.

C. Mitigation Monitoring and Maintenance

1. The Technical Administrator shall have the authority to require that compensatory mitigation projects be monitored annually for at least five (5) years to establish that

performance standards have been met. Required monitoring reports shall be submitted to the County annually during the monitoring period to document milestones, successes, problems, and contingency actions of the compensatory mitigation. The Technical Administrator may reduce the monitoring timeframe to three (3) years for minor mitigation projects involving critical area or buffer re-vegetation or vegetation enhancement, but not for projects involving wetland creation, wetland restoration, stream restoration or other activities that require manipulation of soils or water. All mitigation areas shall be maintained and managed to prevent degradation and ensure protection of critical area functions and values subject to field verification by the Technical Administrator.

2. The Technical Administrator shall have the authority to extend the monitoring period, require corrective measures, and/or require additional monitoring reports beyond the initial monitoring period for any project that does not meet the performance standards identified in the mitigation plan, or does not provide adequate replacement for the functions and values of the impacted critical area.
3. Permanent protection shall be achieved through deed restriction or other protective covenant in accordance with WCC 16.16.265.

D. Mitigation Assurance

1. The applicant and his/her representatives shall demonstrate sufficient scientific expertise and capability to implement the mitigation, monitor the site, and make corrections if the project fails to meet projected goals. The Technical Administrator may require the following to ensure that the mitigation is fully functional:
 - a. The applicant shall post a mitigation surety in the amount of one hundred and twenty-five percent (125%) of the estimated cost of the uncompleted actions or the estimated cost of restoring the functions and values of the critical area that are at risk, whichever is greater. The surety shall be based on an itemized cost estimate of the mitigation activity including clearing and grading, plant materials, plant installation, irrigation, weed management, monitoring, and other costs.
 - b. The surety shall be in the form of an assignment of funds or other means approved by the Technical Administrator.
 - c. Surety authorized by this section shall remain in effect until the Technical Administrator determines, in writing, that the standards bonded for have been met. Surety shall generally be held by the County for a period of five (5) years to ensure that the required mitigation has been fully implemented and demonstrated to function, and may be held for longer periods when necessary. Surety for construction may be reduced after initial completion in an amount not to exceed the cost of monitoring plus not less than 25 percent of the construction cost.
 - d. Depletion, failure, or collection of surety funds shall not discharge the obligation of an applicant or violator to complete required mitigation, maintenance, or monitoring.

- e. Public development proposals shall be relieved from having to comply with the bonding requirements of this section if public funds have previously been committed for mitigation, maintenance, or monitoring.
- f. Any failure to satisfy critical area requirements established by law or condition including, but not limited to, the failure to provide a monitoring report within thirty (30) days after it is due or comply with other provisions of an approved mitigation plan shall constitute a default subject to the provisions of WCC 16.16.280, and the County may demand payment of any financial guarantees or require other action authorized by the County code or any other law.
- g. Any funds recovered pursuant to this section shall be used to complete the required mitigation.

E. Alternative Mitigation Approaches and Watershed-based Management Plans

- 1. The County shall facilitate review and/or approval of an alternative mitigation plan for a major development as defined by this chapter, a Planned Unit Development pursuant to WCC 20.85, and/or a development agreement pursuant to RCW 36.70B.170 - .210. The mitigation plan shall be used to satisfy the requirements of this chapter and provide relief and/or deviation as appropriate from the specific standards and requirements thereof, provided that the standards of impact avoidance and minimization shall remain as guiding principles in the application of these provisions and when it is demonstrated that all of the following circumstances exist:
 - a. The proponent(s) demonstrate the organizational and fiscal capability to carry out the purpose and intent of the plan;
 - b. The proponent(s) demonstrate that long-term management, maintenance, and monitoring will be adequately funded and effectively implemented;
 - c. There is a clear likelihood for success of the proposed plan based on supporting scientific information and demonstrated experience in implementing similar plans;
 - d. The proposed project results in equal or greater protection and conservation of critical areas than would be achieved using parcel-by parcel regulations and/or traditional mitigation approaches;
 - e. The plan is consistent with the general purpose and intent of this chapter and the Comprehensive Plan;
 - f. The plan shall contain relevant management strategies considered effective and within the scope of this chapter and shall document when, where, and how such strategies substitute for compliance with the specific standards herein; and
 - g. The plan shall contain clear and measurable standards for achieving compliance with the purposes of this chapter, a description of how such

standards will be monitored and measured over the life of the plan, and a fully funded contingency plan if any element of the plan does not meet standards for compliance.

2. The County shall facilitate review and/or approval of a watershed-based management plan sponsored by a Watershed Improvement District or other special purpose district when it meets the general purpose and intent of this chapter. Such plans may be used to satisfy the requirements of this chapter and provide relief from the specific standards and requirements thereof when it is demonstrated that all of the following circumstances exist:
 - a. The proponent(s) demonstrate the organizational and fiscal capability to carry out the purpose and intent of the plan;
 - b. The proponent(s) demonstrate that long-term management, maintenance, and monitoring of the watershed will be adequately funded and effectively implemented;
 - c. There is a clear likelihood for success of the proposed plan based on demonstrated experience in implementing similar plans or supporting scientific information;
 - d. The proposed project results in equal or greater protection and conservation of critical areas than would be achieved using parcel-by parcel regulations and/or traditional mitigation approaches;
 - e. The plan is consistent with an approved watershed plan prepared pursuant to RCW 90.82 (the state Watershed Management Act) or the plan is prepared under other local or state authority that is consistent with the goals and policies of an applicable and approved watershed plan prepared pursuant to RCW 90.82;
 - f. The plan shall contain relevant management strategies considered effective and within the scope of this chapter and shall document when, where, and how such strategies substitute for compliance with the specific standards herein; and
 - g. The plan shall contain clear and measurable standards for achieving compliance with the purposes of this chapter, a description of how such standards will be monitored and measured over the life of the plan, and a fully funded contingency plan if any element of the plan does not meet standards for compliance.
3. A watershed-based management plan and/or an alternative mitigation plan for a major development, planned unit development or developer agreement shall be allowed to substitute for the standards and requirements of this chapter when approved by the designated decision maker as per County Code. The process for approval shall be as follows:
 - a. The plan shall be reviewed by the Technical Administrator to ensure compliance with the purposes of this chapter, the Whatcom County

Shoreline Management Program (WCC Title 23) and with the Comprehensive Plan, and to ensure accuracy of the data and effectiveness of proposed management strategies. In making this determination the Technical Administrator shall consult with the State Departments of Fish and Wildlife, Ecology, Natural Resources, and/or other local, state, federal, and/or tribal agencies or experts.

- b. If the Technical Administrator finds the plan to be complete, accurate, and consistent with the purposes and intent of this chapter, the designated decision maker shall solicit comment pursuant to the public notice provisions of WCC 2.33 prior to final approval/denial of permission of the plan to substitute for the requirements and standards of this chapter.
- c. Alternative mitigation plans associated with major developments, planned unit developments, and/or developer agreements shall be reviewed concurrently with the underlying land use permit(s) and decisions to approve or deny such plans shall be made in accordance with the underlying permit process.
- d. Watershed-based management plans approved by the Whatcom County Council shall be adopted by ordinance and appended to this chapter.
- e. The designated decision maker shall not approve watershed-based management plans that conflict with RCW 90.82.

F. Mitigation Banking

- 1. The County may approve mitigation banking as a form of compensatory mitigation for wetland and habitat conservation area impacts when the provisions of this chapter require mitigation and when it is clearly demonstrated that the use of a bank will provide equivalent or greater replacement of critical area functions and values when compared to on-site mitigation, provided that all of the following criteria are met:
 - a. Banks shall only be used when they provide significant ecological benefits including long-term conservation of critical areas, important species, habitats and/or habitat linkages, and when they are consistent with the County Comprehensive Plan and create a viable alternative to the piecemeal mitigation for individual project impacts to achieve ecosystem-based conservation goals.
 - b. The bank shall be established in accordance with the Washington State Draft Mitigation Banking Rule WAC 173-700 or as revised, and RCW 90.84 and the federal mitigation banking guidelines as outlined in the Federal Register Volume 60. No 228, November 28, 1995. These guidelines establish the procedural and technical criteria that banks must meet to obtain state and federal certification.
 - c. Preference shall be given to mitigation banks that implement restoration actions that have been identified formally by an adopted Shoreline Restoration Plan, watershed planning document prepared and adopted

pursuant to RCW 90.82, a Salmonid Recovery Plan or project that has been identified on the Salmon Recovery Board Habitat Project List or by the Washington Department of Fish and Wildlife as essential for fish and wildlife habitat enhancement.

2. Mitigation banks shall require a major project permit in accordance with WCC 20.88 and shall be subject to a formal review process including public review as follows:
 - a. The bank sponsor shall submit a bank prospectus for County review. The prospectus shall identify the conceptual plan for the mitigation bank, including:
 - i. The ecological goals and objectives of the bank;
 - ii. The rationale for site selection, including a site map and legal description of the prospective bank site;
 - iii. A narrative demonstrating compliance with the Whatcom County Comprehensive Plan, associated development standards and this chapter, shoreline restoration plan, watershed planning documents prepared and adopted pursuant to RCW 90.82, and/or the Salmonid Recovery Plan;
 - iv. A description of the existing site conditions and expected changes in site conditions as a result of the banking activity, including changes on neighboring lands;
 - v. Conceptual site design;
 - vi. Description of the proposed protective mechanism such as a conservation easement; and
 - vii. Demonstration of adequate financial resources to plan, implement, maintain, and administer the project.
 - b. The Technical Administrator shall review the bank prospectus either by participating in the state's Mitigation Bank Review Team (MBRT) process and/or by hiring independent, third-party expertise to assist in the review.
 - c. If the Technical Administrator determines that the bank prospectus is complete, technically accurate, and consistent with the purpose and intent of this chapter, he/she shall forward the prospectus to the County Council for initial review. If the proposed bank involves conversion of agricultural land to non-agricultural uses, the County Council shall seek an initial recommendation from the Agricultural Advisory Committee as to whether the conversion shall be allowed. The Committee's recommendation shall be non-binding. The County Council may require mitigation for the loss of agricultural lands.
 - d. If the County Council determines, based on the initial review, that the prospectus is valid, it shall issue a notice to proceed to the bank sponsor.

Following receipt of the notice to proceed, the bank sponsor may submit application for a major project permit in accordance with WCC 20.88. The notice to proceed shall not be construed as final approval of the bank proposal, but shall indicate approval to proceed with the development of the mitigation bank instrument, which details all of the legal requirements for the bank.

- e. Upon receipt of a draft mitigation banking instrument from the bank sponsor and major project permit application, the Technical Administrator shall review the banking instrument and major project permit in consultation with the MBRT and/or other third-party expert. Following review of the mitigation banking instrument and major project permit, the Technical Administrator shall make a recommendation to certify and approve, conditionally certify and approve, or deny the bank proposal and major project permit in accordance with the procedures of WCC 20.88.
 - f. Following receipt of the recommendation, the County Council shall proceed with review in accordance with the procedures outlined in WCC 20.88. The County Council shall seek a final recommendation from the Agricultural Advisory Committee if the proposal involves conversion of agricultural land.
 - g. The bank sponsor shall be responsible for the cost of any third-party review.
3. The award of bank credits for an approved bank may be negotiated based on habitat acreage, habitat quality, and contribution to a regional conservation strategy that has been approved by the County and other appropriate regulatory agency(ies). Credit availability may vary in accordance with agreed upon performance criteria for the development of the resource value in question. Awarded bank credits, subject to the approval of the County and regulatory agency(s), may be made transferable. Whether out-of-kind mitigation credit will be allowed at a particular bank will require a fact-specific inquiry on a case-by-case basis for the project creating the impacts.

16.16.265 Critical Area Protective Measures

A. Signage

The Technical Administrator as a condition of permit approval may require that the outer boundary of a critical area or buffer be identified with signs or markers when needed to minimize potentially harmful intrusions from adjacent land uses, to alert citizens to a potential public health or safety risk associated with a critical area, or to accomplish other objectives specifically provided for elsewhere in this chapter. The Technical Administrator shall provide specifications on the type, content, and size of the signs prior to permit approval. The signs shall be posted near primary access points and approximately every two hundred (200) feet along the critical area boundary unless the Technical Administrator determines that less frequent spacing is adequate considering the size and location of the site (see also Appendix C).

B. Notice on Title

The owner of any property containing a critical area or buffer for which a development permit is about to be issued shall record a notice with the County Auditor real estate records in a format approved by the Technical Administrator and provide a copy of the filed notice to the Planning and

Development Services Department at the time the permit is issued. The notice shall state the general presence of the critical area or buffer on the property, and the fact that limitations on actions in or affecting the critical area or buffer exist. The notice shall provide that restrictions on uses within the critical area exist until such time as the Technical Administrator approves a change in restriction and such approval is filed. This notice on title shall not be required for a development proposal by a public agency or public or private utility within a right-of-way or easement for which they do not have fee-simple title.

C. Tracts

Prior to final approval of any subdivisions, short subdivisions, or binding site plans, the part of the critical area and required buffer that is located on the site shall be protected using one of the following mechanisms:

1. Placed in a separate tract or tracts owned in common by all lots within a subdivision;
2. Covered by a protective easement, or public or private land trust dedication; or
3. Preserved through an appropriate permanent protective mechanism that provides the same level of permanent protection as designation of a separate tract or tracts as determined by the County Technical Administrator or Hearing Examiner.

D. Building Setback

The County shall require buildings and other structures to be setback a minimum distance of ten (10) feet from the edge of a critical area buffer or from the critical area where no buffer is required. The following uses are allowed in the building setback:

1. Landscaping;
2. Uncovered decks;
3. Building overhangs;
4. Impervious surfaces such as driveways, parking lots, roads, and patios provided that such surfaces conform to the applicable water quality standards and that construction equipment does not enter or damage the buffer or critical area;
5. Clearing and grading;
6. Wells.

16.16.270 Reasonable Use and Variances

Permit applicants who are unable to comply with the specific standards of this chapter may seek approval pursuant to the reasonable use or variance standards and procedures provided for in this section.

A. Reasonable Use Standards

1. Nothing in this chapter is intended to preclude all reasonable economic use of property. If the application of this chapter would deny all reasonable economic use of the subject property, including agricultural use, use or development shall be allowed if it is consistent with the purposes of this chapter.
2. To qualify as a reasonable use, the Technical Administrator or Hearing Examiner, as appropriate, must find that the proposal is consistent with all of the following criteria:
 - a. There is no portion of the site where the provisions of this chapter allow reasonable economic use, including agricultural use or continuation of legal non-conforming uses;
 - b. There is no feasible alternative to the proposed activities that will provide reasonable economic use with less adverse impact on critical areas and/or buffers. Feasible alternatives may include, but are not limited to, locating the activity on a contiguous parcel that has been under the ownership or control of the applicant since the effective date of this chapter, change in use, reduction in size, change in timing of activity, and/or revision of project design;
 - c. Activities will be located as far as possible from critical areas and the project employs all reasonable methods to avoid adverse effects on critical area functions and values, including maintaining existing vegetation, topography, and hydrology. Where both critical areas and buffer areas are located on a parcel, buffer areas shall be disturbed in preference to the critical area;
 - d. The proposed activities will not result in adverse effects on endangered, or threatened species as listed by the federal government or the State of Washington, or be inconsistent with an adopted recovery plan;
 - e. Measures shall be taken to ensure the proposed activities will not cause degradation of ground water or surface water quality, or adversely affect drinking water supply;
 - f. The proposed activities comply with all state, local and federal laws, including those related to erosion and sediment control, pollution control, floodplain restrictions, and on-site wastewater disposal;
 - g. There will be no damage to nearby public or private property and no threat to the health or safety of people on or off the site;
 - h. The inability to derive reasonable economic use of the property is not the result of segregating or dividing the property and/or creating the condition of lack of use after the effective date of this chapter; and
 - i. The project includes mitigation for unavoidable critical area and buffer impacts in accordance with the mitigation requirements of this chapter.

B. Variance Standards

In cases where the reasonable use criteria of subsection A do not apply, or for variance from other standards of this chapter, the Hearing Examiner may grant a variance from the requirements in this chapter when the applicant proves by clear, cogent and convincing evidence of all of the following elements:

1. Because of special circumstances applicable to the subject property, including, but not limited to size, shape, topography, location, surroundings, and other physical conditions, the application of this chapter precludes development of the property by the property owner as otherwise allowed in WCC Title 20; and
2. The granting of the variance will not be injurious to the health or safety of the community and every reasonable effort has been made to minimize adverse effects on critical areas; and
3. The variance does not constitute a grant of special privilege, and is not based upon reasons of hardship caused by previous actions of the current property owner after July 18, 1992 and the proposed modification to a critical area will be the minimum necessary to allow reasonable and economically viable use of the property; and
4. The project includes mitigation for unavoidable critical area and buffer impacts.

C. Reasonable Use and Variance Procedures

1. Procedural requirements for variances and reasonable use permit applications shall be as follows:
 - a. Variance and reasonable use permit applications shall be subject to an open record public hearing provided that reasonable use permit applications for single-family residences proposed to be located outside of geologically hazardous areas or for other development proposals that would affect critical area buffers, but not the critical areas themselves shall be processed administratively by the Technical Administrator.
 - b. Variances and reasonable use permit applications that require an open record hearing shall be processed in accordance with WCC 2.33 and WCC 20.84.230.
 - c. Reasonable use permit applications that are subject to administrative approval by the Technical Administrator shall be processed in accordance with WCC 20.84.235.
 - d. The Hearing Examiner or Technical Administrator shall have the authority to set an expiration date for any or all variance and/or reasonable use approvals. The development proposal must be completed before the approval expires. The Hearing Examiner will render a decision pursuant to Chapter WCC 20.92.
 - e. Any party of record may appeal the Hearing Examiner decision pursuant to WCC 20.92.

- f. Any person aggrieved by the granting, denying, or rescinding of a reasonable use permit by the Technical Administrator may seek review from the Hearing Examiner pursuant to WCC 16.16.280.
 - g. Any application for a variance or reasonable use permit or approval which remains inactive for a period of 180 days shall expire and a new application and repayment of fees shall be required to reactivate the proposal; provided that, the Technical Administrator may grant a single 90 day extension for good cause. Delays such as those caused by public notice requirements, environmental (SEPA) review, litigation directly related to the proposal, or changes in government regulations shall not be considered as part of the inactive period.
- 2. All variance or reasonable use permit applications, or other approvals shall be subject to the provisions of this chapter, which are in effect at the time of application.
 - 3. Each application for a variance shall be accompanied by a fee as stated in the unified fee schedule.
 - 4. In making reasonable use or variance decisions, the Technical Administrator and/or Hearing Examiner shall have the authority to require submittal of technical reports in accordance with WCC 16.16.255 and/or 16.16.260.B.

16.16.275 Non-conforming Uses/Buildings

The following provisions shall apply to existing uses and/or buildings and/or structures that do not meet the specific standards of this chapter.

- A. The lawful use of any building, structure, land, or premises existing on the effective date of adoption or amendment of this chapter or authorized under a permit or approval issued, or otherwise vested, prior to the effective date of adoption or amendment of this chapter may be continued, subject to the provisions for a non-conforming structure in WCC 20.83, provided that agricultural activities shall conform to section WCC 16.16.290. If a non-agricultural non-conforming use is intentionally abandoned for a period of 12 months or more, then any future use of the non-conforming building, land or premises shall be consistent with the provisions of this chapter.
- B. Expansion, alteration, and/or intensification of a non-conforming use, building or structure, excluding normal maintenance is prohibited if such use will produce impacts that degrade the critical area, including but not limited to vegetation clearing; additional impervious surfaces; generation of surface water runoff; discharge, or risk of discharge of pollutants; increased noise, light or glare.
- C. Non-conforming structures that are destroyed by fire, explosion, flood, or other casualty may be restored or replaced in kind if there is no alternative that allows for compliance with the standards of this chapter, provided that the following are met:
 - 1. The reconstruction process is commenced within 18 months of the date of such damage; and

- 2. The reconstruction does not expand, enlarge, or otherwise increase the non-conformity, except as provided for in B above.
- D. Non-conforming uses in shoreline areas shall be governed by the shoreline management provisions of WCC Title 23.
- E. When a development permit is sought for a parcel containing a non-conforming building or structure that has been intentionally abandoned for a period of 12 months or more, the Technical Administrator may require removal of the non-conforming building and restoration of the critical area or buffer in accordance with this chapter as a condition of permit approval.

16.16.280 Appeals

- A. Final permit decisions made by the Technical Administrator shall be subject to appeal in accordance with the procedures of WCC 2.33 and WCC Title 20, provided that the applicant may request administrative review by the Director of Planning and Development Services prior to initiating a formal appeal process. Decisions of conditions applied to specific permits shall be subject to the appeal provisions for that permit.
- B. Any person may appeal to the Hearing Examiner a final administrative order, final requirement, final permit decision, or final determination made; provided that, such appeal shall be filed in accordance with the appeal procedure for the underlying permit. If there is no appealable permit or if the appeal is for a reasonable use permit decision issued by the Technical Administrator, the appeal shall be filed in writing within 14 calendar days of the date the written decision, order, requirement, or determination is issued and public notice provided; unless the decision is issued as part of a SEPA determination of non-significance for which a public comment period is required, in which case a 21 day appeal period shall be provided.
- C. The appeal will be upheld if the applicant proves that the decision appealed is clearly erroneous or based upon error of law.
- D. The Hearing Examiner shall have the authority to set an expiration date for any or all appeal approvals. The Hearing Examiner will render a decision pursuant to Chapter 20.92 WCC.
- E. Each application for an appeal of an administrative decision to the Hearing Examiner shall be accompanied by a fee as stated in the unified fee schedule.
- F. Pursuant to WCC 20.92.610, the applicant, any party of record or any County department may appeal any final decision of the Hearing Examiner to the County Council. The appellant shall file a written notice of appeal at the County Council office within 10 business days of the final decision of the Hearing Examiner.
- G. Any issue not raised by the time of appeal to Superior Court is waived.

16.16.285 Penalties and Enforcement

- A. Any person who violates any of the provisions of this chapter shall be guilty of a civil offense and may be fined a sum not to exceed \$1,000 for each offense. After a notice of violation has been given, each day of site work in conjunction with the notice of violation shall

constitute a separate offense.

- B. The penalty provided in subsection A shall be assessed and may be imposed by a notice in writing either by certified mail with return receipt requested or by personal service to the person incurring the same. The notice shall include the amount of the penalty imposed and shall describe the violation with reasonable particularity. In appropriate cases, corrective action shall be taken within a specific and reasonable time.
- C. Within 30 calendar days after the notice is received, the person incurring the penalty may apply in writing to the County for remission or mitigation of such penalty. Upon receipt of the application, the County may remit or mitigate the penalty upon whatever terms the County in its discretion deems proper. The County's final decision on mitigation or revision shall be reviewed by the Hearing Examiner if the aggrieved party files a written appeal therewith of said decision within 10 calendar days of its issuance.
- D. If work activity has occurred on a site in violation of this chapter, prompt corrective action, restoration or mitigation of the site will be required when appropriate. If this provision is not complied with, the County may restore or mitigate the site and charge the responsible person for the full cost of such an activity. Additionally, any and all permits or approvals issued by the County may be denied for that site for a period of up to six years.
- E. In the event any person violates any of the provisions of this chapter, the County may issue a correction notice to be delivered to the owner or operator, or to be conspicuously posted at the site. In a non-emergency situation, such notice may include notice of the intent to issue a stop work order no less than 10 calendar days following the receipt of the correction notice, and provide for an administrative predeprivation hearing within 10 calendar days of the notice. In an emergency situation where there is a significant threat to public safety or the environment, the County may issue a stop work order. The stop work order shall include, in writing, the right to request an administrative predeprivation hearing within 72 hours following receipt of the stop work order. Failure to comply with the order to stop work shall be a gross misdemeanor punishable upon conviction by a minimum fine of \$500 up to a maximum fine of \$1,000 or one year in jail, or both. Under no circumstance may the court defer or suspend any portion of the minimum \$500 fine for any conviction under this section. Each day or part thereof of noncompliance with said order to stop work shall constitute a separate offense.
- F. The County may suspend or revoke a permit if the applicant violates the conditions or limitations set forth in the permit or exceeds the scope of the work set forth in the permit.
- G. The Prosecuting Attorney may enforce compliance with this chapter by such injunctive, declaratory or other actions as deemed necessary to ensure that violations are prevented, ceased, or abated.
- H. Any person who, through an act of commission or omission, procures, aids or abets in the violation shall be considered to have committed a violation for the purposes of the civil penalty.

16.16.290 Conservation Program on Agriculture Lands (CPAL)

Ongoing agriculture activities shall be permitted within critical areas, and/or their buffers in accordance with the standards of this chapter or pursuant to an approved conservation program

established by this section. This program shall be subject to continued monitoring and adaptive management to ensure that it meets the purpose and intent of this chapter:

- A. Agricultural activities that qualify for coverage under this section include:
 - 1. Low-impact farm or livestock operation where critical areas are protected against the potential negative impacts of agricultural activities through the implementation of an approved standard farm conservation plan prepared in accordance with Appendix A - Section 1; or
 - 2. Moderate or high-impact farm or livestock operation where critical areas are protected against the potential negative impacts of agricultural activities through the implementation of an approved custom farm conservation plan prepared in accordance with Appendix A - Section 2.

- B. The following additional requirements shall apply:
 - 1. A farm conservation plan shall not authorize filling, draining, grading or clearing activities within critical areas or buffers, except on existing agricultural land where such activities are an essential part of the ongoing agricultural use and do not expand the boundaries of the existing agricultural use provided that impacts are mitigated in accordance with an approved farm conservation plan.
 - 2. The farm conservation plan shall not authorize construction of structures. New structures shall be constructed in compliance with the applicable provisions of this chapter and the landowner shall ensure that all of the following are met:
 - a. Siting of structures shall not result in surface or ground water contamination.
 - b. Dust, odor and noise concerns attendant to use of the improvement shall be mitigated.
 - c. Impermeable surfaces such as building roofs, roads, and yards shall not change the flow, volume and/or direction of runoff, or cause erosion or downstream flooding.

- C. Farm conservation plans shall be subject to County review, approval, monitoring, adaptive management, and enforcement in accordance with the following:
 - 1. The Technical Administrator shall review and approve the farm conservation plan. The following entities may provide technical assistance and recommendations regarding a farm conservation plan:
 - a. The Whatcom Conservation District, or
 - b. A Watershed Improvement District for a farm or ranch that is within its boundaries, or
 - c. A qualified Planning Advisor as defined by this chapter.

2. The Technical Administrator and/or the farm operator shall monitor plan implementation and compliance. The monitoring may include periodic site inspections, self-assessment by the farm operator, or other appropriate actions. Prior to carrying out a site inspection, the Technical Administrator shall provide reasonable notice to the owner or manager of the property as to the purpose or need for the entry.
3. Where the Planning Advisor has reason to believe that there is an imminent threat to public health or significant pollution with major consequences occurring as a result of the agricultural operations, a Planning Advisor will advise the agricultural operator of his or her concerns in writing. While the Planning Advisor may provide suggestions for resolving the issue, the responsibility for compliance and resolution of issues rests solely with the farm operator. If compliance issues are not resolved, the Planning Advisor may report such situations to the Technical Administrator for subsequent action and enforcement in accordance with WCC 16.16.285.
4. Agricultural operations shall cease to be in compliance with this section when the Technical Administrator determines that any of the following have occurred:
 - a. A farm or ranch operator fails to properly and fully implement and maintain their farm conservation plan.
 - b. When implementation of the farm conservation plan fails to protect critical areas. If so, a new or revised conservation plan shall be required to protect the values and functions of critical areas at the benchmark condition.
 - c. When substantial changes in the agricultural activities of the farm or livestock operation have occurred that render the current farm conservation plan ineffective. In such cases a new or revised conservation plan will be required to meet the purpose and intent of this section.
 - d. When a new or revised farm conservation plan is required pursuant to either (b) or (c) above, the Technical Administrator has so advised the owner in writing, and a reasonable amount of time has passed without significant progress being made to develop said plan.

Refusal or inability to provide a new plan within a reasonable period of time shall be sufficient grounds to revoke the approved conservation plan and require compliance with the standard provisions of this ordinance.
 - e. When an owner or manager denies the Technical Administrator reasonable access to the property for technical assistance, monitoring, or compliance purposes, then the Technical Administrator shall document such refusal of access and notify the owner of his/her findings. The owner shall be given an opportunity to respond in writing to the findings of the Technical Administrator, propose a prompt alternative access schedule, and to state any other issues that need to be addressed.

Refusal or inability to comply with an approved farm conservation plan within a reasonable period of time shall be sufficient grounds to revoke said plan and require compliance with the standard provisions of this ordinance.

5. Conservation plans prepared pursuant to this section will not be open to public inspection unless required by law, provided that the County will collect summary information related to the general location of a farming enterprise, the nature of the farming activity, and the specific best management practices to be implemented during the conservation plan review process. The summary information shall be provided by the farm operator or his/her designee and shall be used to document the basis for the County's approval of the plan. Plans shall also be subject to disclosure if required by a court of competent jurisdiction. Upon request, the County may provide a sample conservation plan, exclusive of site- or property-specific information, to give general guidance on the development of a conservation plan.

16.16.295 Open Space and Conservation

The following programs may be employed to achieve the purposes of this chapter and minimize the burden to individual property owners from application of the provisions of this chapter:

- A. Open Space.** Any property owner whose property contains a critical area or buffer and who meets the applicable qualifying criteria may apply for open space taxation assessment pursuant to RCW 84.34.
- B. Conservation Easement.** Any person who owns an identified critical area or its associated buffer may place a conservation easement over that portion of the property by naming the County or its qualified designee under RCW 64.04.130 as beneficiary of the conservation. This conservation easement may be in lieu of separate critical areas tracts that qualify for open space tax assessment described in subsection (A) above. The purpose of the easement shall be to preserve, protect, maintain, and limit use of the affected property. The terms of the conservation easement may include prohibitions or restrictions on access and shall be approved by the property owner and the County.
- C. Conservation Futures Fund.** The County may consider using the Conservation Futures Property Tax Fund as authorized by RCW 84.34.230 for the acquisition of properties containing significant critical areas and their associated buffers.

ARTICLE 3 GEOLOGICALLY HAZARDOUS AREAS

16.16.300 Purpose

The purposes of this article are to:

- A. Minimize risks to public health and safety and reduce the risk of property damage by regulating development on or adjacent to geologically hazardous areas.
- B. Regulate land use so as to avoid the need for construction of flood control devices or channel modifications on alluvial fans and allow for natural hydrologic processes.
- C. Protect aquatic habitats, wetlands, and fish and wildlife by avoiding or minimizing impacts that can result from landslides and erosion.
- D. Maintain natural geological processes while protecting existing and new development.
- E. Establish review procedures for development proposals in geologically hazardous areas.

16.16.310 Designation, Mapping and Classification

- A. Geologically hazardous areas are areas susceptible to erosion, landslides, earthquakes, volcanic activity and/or other geological processes and pose a significant risk to people and property. Incompatible development in these areas can adversely affect natural resources, threaten public health and safety and, put the development and surrounding developments and uses at risk.
- B. The approximate location and extent of geologically hazardous areas are shown on the County's critical area maps. The County shall update the maps as new hazard areas are identified and as new information becomes available. This chapter does not imply that land outside mapped geologically hazardous areas or uses permitted within such areas will be without risk. This chapter shall not create liability on the part of Whatcom County any officer or employee thereof for any damages that result from reliance on this chapter or any administrative decision lawfully made hereunder.
- C. For purposes of this chapter, geologically hazardous areas shall include all of the following:
 - 1. Landslide Hazard Areas - Landslide hazard areas shall include areas susceptible to landslides because of any combination of bedrock, soil, slope (gradient), slope aspect, structure, hydrology, or other physical factors. Landslide hazard areas shall be further classified as follows:
 - a. Potential landslide hazards areas. Potential landslide hazard areas exhibit one or more of the following characteristics:
 - i. Slopes between 15 and 35 percent that have a relatively permeable geologic unit overlying a relatively impermeable unit and have springs or groundwater seeps;

- ii. Slopes exceeding 35 percent with a vertical relief of ten (10) or more feet except areas composed of competent rock and properly engineered slopes designed and approved by a geotechnical engineer licensed in the State of Washington and experienced with the site;
 - iii. Potentially unstable slopes resulting from rapid river or stream incision, river or stream bank erosion, or undercutting by wave action. These include slopes exceeding 10 feet in height adjacent to streams, lakes and coastal shorelines and with more than a 35 percent gradient;
 - iv. Areas that have shown evidence of historic failure or instability, including, but not limited to, back-rotated benches on slopes; areas with structures that exhibit structural damage such as settling and racking of building foundations; and areas that have toppling, leaning, or bowed trees caused by ground surface movement;
 - v. Areas that show past sloughing or calving of bluff sediments, resulting in a vertical or steep bluff face with little or no vegetation;
 - vi. Slopes that are parallel or subparallel to planes of weakness (such as bedding planes, joint systems, and fault planes) in subsurface materials;
 - vii. Slopes having gradients steeper than eighty percent (80%) subject to rock fall during seismic shaking;
 - viii. Areas that are at risk of mass wasting due to seismic forces; or
 - ix. Areas of historical landslide movement including coastal shoreline areas mapped by the Department of Ecology Coastal Zone Atlas or the Department of Natural Resources slope stability mapping as unstable (“U” or class 3), unstable old slides (“UOS” or class 4), or unstable recent slides (“URS” or class 5).
- b. Active landslide hazard areas. Active landslide hazard areas are areas that have been identified during a geological inspection as meeting the following criterion:
- i. Areas that exhibit indicators noted in WCC 16.16.310.C.1.a that have been determined through geological assessment to be presently failing or very likely to fail in the near future.
2. Seismic Hazard Areas - Seismic hazard areas shall include areas subject to a severe risk of earthquake damage as a result of seismically induced ground shaking, differential settlement, slope failure, settlement, lateral spreading, mass wasting, surface faulting or soil liquefaction.
3. Alluvial Fan Hazard Areas - Alluvial fan hazard areas shall include those areas on alluvial fans where debris flows, debris floods, or clear water floods have the

potential to significantly damage or harm the health or welfare of the community. They include the area generally corresponding to the path of potential flooding, channel changes, sediment and debris deposition, or debris flow paths as determined by analysis of watershed hydrology and slope conditions, topography, valley bottom and channel conditions, potential for channel changes, and surface and subsurface geology.

4. Volcanic Hazard Areas - Volcanic hazard areas shall include areas subject to lava flows, pyroclastic flows, pyroclastic surges, mud flows, lahars, debris flows, debris avalanche, ash (tephra) clouds or ash (tephra) fall, lateral blast, ballistic debris, or flooding resulting from volcanic activity.
5. Erosion Hazard Areas - Erosion hazard areas shall include:
 - a. Surface erosion areas, which are slopes greater than 15 percent with soils identified by the Natural Resources Conservation Service as having a "severe," or "very severe" rill and inter-rill erosion hazard because of natural characteristics, including vegetative cover, soil texture, slope, gradient, and rainfall patterns, or human induced changes to natural characteristics; and
 - b. Coastal and riverine erosion areas, which are subject to impacts from lateral erosion related to moving water such as river channel migration and shoreline retreat. This includes the channel migration zone (CMZ) and the anticipated slope/bank failures and landward retreat resulting from erosion and erosion along other features that concentrate surface water flows, provided that channel migration zones apply only to those watercourses where detailed CMZ studies have been completed. Areas that are identified as potential channel migration hazards based on sound scientific evidence, but which are pending further study may be designated by the County Council as interim channel migration zones until such studies are complete. Additional CMZs may be regulated as erosion hazard areas as new information becomes available, accepted and adopted by Whatcom County.
6. Tsunami and Seiche Hazard Areas – Tsunami and seiche hazard areas shall include coastal areas and lake shoreline areas susceptible to flooding, inundation, debris impact, and/or mass wasting as the result of coastal or inland wave action generated by seismic events.
7. Mine Hazard Areas - Mine hazard areas shall include those lands in proximity to abandoned coal mines and associated underground mine workings where mine workings are less than 200 feet below ground level. Mine workings include adits (mine entrances), gangways (haulage tunnels), rooms and chutes (large voids), drifts (water level tunnels), pillars (coal left for support) and air shafts. Mine hazards include subsidence, which is the uneven downward movement of the ground surface caused by underground workings caving in; contamination of ground and surface water from tailings and underground workings; concentrations of lethal or noxious gases; and underground mine fires.

16.16.320 Geologically Hazardous Areas – General Standards

The following requirements shall apply to all activities in geologically hazardous areas:

- A. Alterations shall be directed toward portions of parcels or parcels under contiguous ownership that are not subject to, or at risk from, geologic hazards and/or are outside any associated buffer established by this article.
- B. Critical facilities as defined in WCC 16.16.800 shall not be constructed or located in geologically hazardous areas if there is a feasible alternative location outside geologically hazardous areas that would serve the intended service population. If allowed, the critical facility shall be designed and operated to minimize the risk and danger to public health and safety to the maximum extent feasible.
- C. Agricultural activities may be allowed within geologically hazardous areas without a farm conservation plan; except that, a farm conservation plan shall be required for agricultural activities within landslide hazard areas and associated buffers.
- D. Land that is located wholly within a landslide hazard area, riverine or coastal erosion hazard area, alluvial fan hazard area, lahar hazard area, or mine hazard area or its buffer may not be subdivided to create buildable parcels entirely within the hazardous area. Land that is located partially within a hazard area or its buffer may be divided provided that each resulting lot has sufficient buildable area outside of the hazardous area with provision for drainage, erosion control and related features that will not adversely affect the hazard area or its buffer.
- E. Allowed developments shall be engineered and/or constructed to minimize risk to health and safety, and protect the building and occupants from the hazard, and to avoid or compensate for impacts to other critical areas such as wetlands and habitat conservation areas.
- F. A qualified professional, licensed in the State of Washington, shall review projects in geologically hazardous areas to ensure that they are properly designed and constructed as provided for in WCC 16.16.255.
- G. Surface erosion hazards will be regulated under WCC 20.80.730, land clearing.

16.16.325 Standards – Landslide Hazard Areas

The following activities may be allowed in active landslide hazards areas when all reasonable measures have been taken to minimize risks and other adverse effects associated with landslide hazards, and when the amount and degree of the alteration are limited to the minimum needed to accomplish the project purpose:

- A. Developments that meet the reasonable use standards as set forth in WCC 16.16.270.
- B. Utility lines and pipes that are above-ground, properly anchored and/or designed so that they will continue to function in the event of a slope failure or movement of the underlying materials and will not increase the risk or consequences of static or seismic slope instability or result in a risk of mass wasting. Such utility lines may be permitted only when the applicant demonstrates that no other feasible alternative is available to serve the affected population.
- C. Access roads and trails that are engineered and built to standards that avoid the need for major repair or reconstruction beyond that which would be required in non-hazard areas.

Access roads and trails may be permitted only if the applicant demonstrates that no other feasible alternative exists, including through the provisions of RCW 8.24. If such access through critical areas is granted, exceptions or deviations from technical standards for width or other dimensions, and specific construction standards to minimize impacts may be specified.

- D. Storm water conveyance through a properly designed storm water pipe when no other storm water conveyance alternative is available. The pipe shall be located above-ground and be properly anchored and/or designed so that it will continue to function in the event of a slope failure or movement of the underlying materials and will not increase the risk or consequences of static or seismic slope instability or result in increased risk of mass wasting activity.

16.16.330 Standards – Landslide Hazard Management Zones

Alteration may be allowed within 300 feet of an active landslide hazard area when the Technical Administrator determines that the following standards are met:

- A. The proposed alteration includes all appropriate measures to eliminate, reduce or otherwise mitigate risks to health and safety.
- B. The proposed alteration is located outside of an active landslide hazard area and any required buffer, as set forth in WCC 16.16.335.
- C. The development will not decrease slope stability on adjacent properties. The development shall not increase the risk or frequency of landslide occurrences.
- D. The removal and disturbance of vegetation, clearing or grading shall be limited to the area of the approved development.
- E. The development is outside of the area of upslope or downslope surface movement or deposition in the event of a slope failure.
- F. The development will not increase surface water discharge or sedimentation to adjacent properties beyond pre-development conditions.
- G. The proposed alterations will not adversely impact other critical areas.
- H. Structures and improvements shall minimize alterations to the slope contour, and shall be designed to minimize impervious lot coverage unless such alterations or impervious surfaces are needed to maintain slope stability.

16.16.335 Standards – Landslide Hazard Area Buffers

The Technical Administrator shall have the authority to require buffers from the edges of any active landslide hazard area in accordance with the following:

- A. The size of the buffer shall be based on the findings of a qualified professional and shall protect critical areas and minimize the risk of property damage, death or injury resulting from landslides caused in whole or part by the development.

- B. The buffer shall include the uphill hydrologic contribution area and/or the area subject to the potential for mass movement, and the downhill area subject to potential deposition.
- C. The buffer shall include woody vegetation adequate to stabilize the soil and prevent soil movement. If the designated buffer area lacks adequate woody vegetation, the Technical Administrator shall have the authority to require vegetation or other measures to improve slope stability.
- D. Developments on sites that are directly adjacent to a wetland, marine shoreline or other habitat conservation area as defined in Article 7 of this chapter may be subject to additional buffer requirements and standards as set forth in the subsequent articles of this chapter.

16.16.340 Standards – Seismic Hazard Areas

Development may be allowed in seismic hazard areas when all of the following apply:

- A. Structures in seismic hazard areas shall conform to applicable analysis and design criteria of the International Building Code.
- B. Public roads, bridges, utilities and trails shall be allowed when there are no feasible alternative locations and geotechnical analysis and design are provided that ensure the roadway, bridge and utility structures and facilities will not be susceptible to damage from seismic induced ground deformation. Mitigation measures shall be designed in accordance with the most recent version of the American Association of State Highway and Transportation Officials (AASHTO) Manual or other appropriate document.

16.16.345 Standards – Alluvial Fan Hazard Areas

The following activities may be allowed in alluvial fan hazard areas when all reasonable measures have been taken to minimize risks and other adverse effects associated with alluvial fan hazards, and when the amount and degree of alteration are limited to the minimum needed to accomplish the project purpose:

- A. Developments that meet the reasonable use standards as set forth in WCC 16.16.270.
- B. Roads, utilities, bridges, and other infrastructure when located and designed to prevent adverse impacts on critical areas and avoid the need for channel dredging or diking or other maintenance activities that have the potential to substantially degrade river and stream functions.
- C. Permanent residential structures and commercial developments shall be allowed in alluvial fan hazard areas only if the fan has undergone a County approved study to assess potential hazards, determine risks, and identify mitigation measures and is deemed suitable for development. The Technical Administrator shall make this determination based on a detailed assessment by a qualified professional that identifies the risks associated with a 500-year return period debris flow or the maximum credible event that could impact the alluvial fan.
- D. Accessory structures not involving human occupancy shall be allowed.

16.16.350 Standards – Volcanic Hazard Areas

Development may be allowed in volcanic hazard areas provided that all reasonable measures have been taken to minimize risks and other adverse effects associated with volcanic hazards, and when the amount and degree of the alteration are limited to the minimum needed to accomplish the project purpose. For lahar inundation zones, the following activities shall be allowed as specified:

- A. Developments that meet the reasonable use or variance standards and procedures as set forth in WCC 16.16.270.
- B. Sewer collection facilities and other utilities that are located underground and not likely to cause harm to people or the environment if inundated by a lahar.
- C. Critical facilities, as defined in Article 8, “critical facilities”, subsection (a), of 50 or more persons may be permitted within lahar inundation zones subject to the conditional use permit requirements of WCC 20.84, provided that the following criteria are also met:
 - 1. The applicant demonstrates through submittal of a travel time analysis prepared by a qualified professional or local, state or federal agency the amount of time that is anticipated for a lahar to reach the proposed project and evacuation route together with a description of existing or proposed detection and notification systems to be installed and maintained by a public entity.
 - 2. The applicant has provided an emergency evacuation plan prepared by a qualified professional or local, state or federal agency showing that the proposed project is located directly adjacent to a safety zone that is within walking distance in an amount of time less than the anticipated time that it takes a lahar to reach the site after the triggering of an alarm and notification.
- D. Accessory structures not involving human occupancy shall be allowed.
- E. Single-family developments and duplexes may be permitted in lahar hazard areas subject to WCC 16.16.320.A.

16.16.355 Standards – Erosion Hazard Areas

Development shall be allowed in erosion hazard areas provided that all reasonable measures have been taken to minimize risks and other adverse effects associated with erosion hazards, and when the amount and degree of the alteration are limited to the minimum needed to accomplish the project purpose. For coastal and riverine erosion hazard areas, the following activities shall be allowed as specified:

- A. Developments that meet the reasonable use or variance standards as set forth in WCC 16.16.270.
- B. Discharge of surface water drainage into a coastal or riverine erosion hazard area provided there are no other alternatives for discharge, and the drainage is collected upland of the top of the active erosion hazard area and directed downhill in an appropriately designed storm water pipe that includes an energy dissipating device at the base of the hazard area. The pipe shall be located on the surface of the ground and be properly anchored so that it will continue to function under erosion conditions and not create or contribute to adverse

effects on downslope critical areas. The number of pipes should be minimized along the slope frontage.

- C. Storm water retention and detention systems, such as dry wells and infiltration systems utilizing buried pipe or French drains, provided they are located outside the identified channel migration zone, designed by a qualified professional and shall not affect the stability of the site.
- D. Utility lines when no feasible conveyance alternative is available. The line shall be located above ground and properly anchored and/or designed so that it will not preclude or interfere with channel migration and will continue to function under erosion conditions, provided that utility lines may be located within channel migration zones if they are buried below the scour depth for the entire width of the CMZ.
- E. Public roads, bridges, and trails when no feasible alternative alignment is available. Facilities shall be designed such that the roadway prism and/or bridge structure will not be susceptible to damage from active erosion.
- F. Access to private development sites may be allowed to provide access to portions of the site that are not critical areas, if there are no feasible alternative alignments. Alternative access shall be pursued to the maximum extent feasible, including through the provisions of RCW 8.24. Exceptions or deviations from technical standards for width or other dimensions, and specific construction standards to minimize impacts may be specified.
- G. Stream bank stabilization and shoreline protection may be permitted subject to all of the following standards:
 - 1. Shoreline protection measures located within coastal or riverine erosion areas shall use soft armoring techniques (bioengineering erosion control measures as identified by the State Department of Ecology and the Department of Fish and Wildlife guidance) unless the applicant provides a geotechnical analysis demonstrating that bioengineering approaches will not adequately protect the property.
 - 2. The armoring shall not increase erosion on adjacent properties and shall not eliminate or reduce sediment supply from feeder bluffs.
 - 3. The armoring will not adversely affect critical areas including habitat conservation areas or mitigation will be provided to compensate for adverse effects where avoidance is not feasible.
 - 4. The proposal shall comply with WCC Title 23.
 - 5. Hard bank armoring is discouraged and may occur only when the property contains an existing permanent structure(s) that is in danger from shoreline erosion caused by wave action or riverine processes and not erosion caused by upland conditions, such as the alteration of natural vegetation or drainage, and the armoring shall not increase erosion on adjacent properties and shall not eliminate or reduce sediment supply.
 - 6. The erosion is not being caused by upland conditions, such as the removal of vegetation or human alteration of existing drainage.

- 7. Nonstructural measures, such as placing or relocating the development further from the shoreline, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient.
- H. New residences shall be located outside identified channel migration hazard areas. Accessory structures not involving human occupancy with a footprint equal to or less than 2,500 square feet, shall be allowed provided that they are located at the outer edge of the migration zone as defined by this chapter and provided that the Technical Administrator may allow larger accessory structures where mitigating measures are feasible and provided for by the applicant.
- I. New public flood protection measures and expansion of existing ones may be permitted, subject to WCC Title 17, Article 4 of this chapter and a state Hydraulic Project Approval, provided that bioengineering or soft armoring techniques shall be used where feasible. Hard bank armoring may occur only in situations where soft approaches do not provide adequate protection.

16.16.360 Standards – Erosion Hazard Area Buffers

The Technical Administrator shall have the authority to require buffers from the edges of any coastal or riverine hazard erosion area in accordance with the following:

- A. The size of the buffer shall be based on the findings of a qualified professional and shall protect critical areas and processes and minimize the risk of property damage, death or injury resulting from erosion caused in whole or in part by the development or that the development may be subject to over the life of the development.
- B. The buffer shall include the uphill area subject to potential erosion, the downhill area subject to potential deposition, and any area subject to landslide as a result of erosion.
- C. The buffer shall include woody vegetation adequate to stabilize the soil and prevent soil movement. If the designated buffer area lacks adequate woody vegetation, the Technical Administrator shall have the authority to require vegetation enhancement or other measures to improve slope stability.
- D. Developments on sites that are directly adjacent to a wetland, or marine shoreline or other habitat conservation area as defined in Article 7 of this chapter may be subject to additional buffer requirements and standards as set forth in the subsequent articles of this chapter.

16.16.365 Standards – Tsunami and Seiche Hazard Areas

The standards of WCC 16.16.320 and 16.16.350 shall apply.

16.16.370 Standards – Mine Hazard Areas

The standards of WCC 16.16.320 and 16.16.350.D shall apply.

16.16.375 Review and Reporting Requirements

- A. When County critical area maps or other sources of credible information indicate that a site proposed for development or alteration is, or may be, located within an active or potential geologically hazardous area, the Technical Administrator shall have the authority to require the submittal of a geological assessment report.

- B. A geological assessment report is an investigation process to evaluate the geologic characteristics of the subject property and adjacent areas. The geological assessment shall include field investigation and may include the analysis of historical aerial photographs, review of public records and documentation, and interviews with adjacent property owners. The report shall include the following, provided that the Technical Administrator may determine that any portion of these requirements is unnecessary given the scope and/or scale of the proposed development:
 - 1. A description of which areas on the site, surrounding areas that influence or could be influenced by the site, or areas within three hundred (300) feet the site meet the criteria for geologically hazardous areas as set forth in WCC 16.16.330.

 - 2. A scaled site plan showing:
 - a. The type and extent of geologic hazard areas, any other critical areas, and buffers on, adjacent to, or that are likely to impact or influence the proposal; or be influenced by the proposal, including properties and critical areas upslope and downslope of the subject site;

 - b. The location of existing and proposed structures, fill, access roads, storage of materials, and drainage facilities, with dimensions indicating distances to the floodplain;

 - c. The existing site topography preferably accurate to within two-foot contours; and

 - d. Clearing limits.

 - 3. A description of the site features, including surface and subsurface geology, evidence of past or potential channel migration, hydrology, soils, and vegetation found in the project area and in all hazard areas addressed in the report. This may include surface exploration data such as borings, drill holes, test pits, wells, geologic reports, and other relevant reports or site investigations that may be useful in making conclusions or recommendations about the site under investigation.

 - 4. A description of the processes affecting the property or affected by development of the property including soil erosion, deposition, or accretion; evidence of past channel migration.

 - 5. A description of the vulnerability of the site to seismic and other geologic processes and a description of any potential hazards that could be created or exacerbated as a result of site development.

6. A description and analysis of the risk associated with development prohibitions and buffers associated with this chapter and the level of risk associated with alternative proposals for development within or with less setback from the area of geological hazard.
 7. A description and analysis of the risk associated with the measures proposed to mitigate the hazards, ensure public safety, and protect property and other critical areas.
 8. For projects in or affecting landslide hazard areas, the report shall also include:
 - a. Assessments and conclusions regarding slope stability for both the existing and developed conditions including the potential types of landslide failure mechanisms (e.g., debris flow, rotational slump, translational slip, etc.) that may affect the site. The stability evaluation shall also consider dynamic earthquake loading, and shall use a minimum horizontal acceleration as established by the current version of the International Building Code.
 - b. An analysis of slope recession rate shall be presented in those cases where stability is impacted or influenced by wave cutting, stream meandering, or other forces acting on the slope.
 - c. Description of the run-out hazard of landslide debris to the proposed development that starts upslope (whether part of the subject property or on a neighboring property) and/or the impacts of landslide run-out on down slope properties and critical areas.
 9. For projects in seismic hazard areas, the report shall also include a detailed engineering evaluation of expected ground displacements or other liquefaction and/or dynamic settlement effects and proposed mitigation measures to ensure an acceptable level of risk for the proposed structure type or other development facilities such as access roads and utilities.
 10. For projects in mine hazard areas, the report shall also include a description of historical data and remnant mine conditions, if available, dates of operation, years of abandonment, strength of overlying rock strata, and other information needed to assess stability of the site together with analysis of surface displacement or foundation stress from collapse of workings.
- C. A geological assessment for a specific site may be valid for a period of up to five years when the proposed land use activity and site conditions affecting the site are unchanged. However, if any surface and subsurface conditions associated with the site change during that five-year period, the applicant may be required to submit an amendment to the geological assessment.

ARTICLE 4 FREQUENTLY FLOODED AREAS

16.16.400 Purpose

The purposes of this article are to:

- A. Reduce the risk to life and safety, public facilities, and public and private property that result from floods.
- B. Avoid and minimize impacts to fish and wildlife habitats that occur within frequently flooded areas.
- C. Protect and maintain the beneficial ecological functions of frequently flooded areas including providing the necessary flow regime to form and maintain a full range of functional and accessible salmonid habitats both within and outside of frequently flooded areas.
- D. In conjunction with the provisions of WCC Title 17, establish review procedures that provide an integrated approach to managing floodplain development and maintaining the capacity of the floodplain or floodway to convey and store floodwaters.

16.16.410 Designation and Mapping – Frequently Flooded Areas

- A. Frequently flooded areas are areas located along major rivers, streams, and coastal areas where the depth, velocity, intensity and frequency of flood water during major events presents a risk to human life and property. Areas susceptible to these types of hazards are hereby designated as frequently flooded areas and subject to the provisions of this article.
- B. The approximate location and extent of frequently flooded areas are shown on the County's critical area maps. These maps are to be used as a guide and do not provide a definitive critical area designation. The County shall update the maps as new hazard areas are identified and as new information becomes available. This article does not imply that land outside mapped frequently flooded areas or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of Whatcom County, any officer or employee thereof, or the Federal Insurance and Mitigation Administration (FIMA), for any flood damages that result from reliance on this chapter or any administrative decision lawfully made hereunder.
- C. Frequently flooded areas shall include, but not be limited to:
 - 1. Areas subject to a one percent recurrence interval of flood water inundation or a 100-year base flood as mapped on the current effective Federal Emergency Management Agency's Flood Insurance Rate Maps (FIRM). This includes coastal high hazard areas as defined by this chapter and as identified and designated on the FIRM maps as Zone VE or V, provided that tsunami hazard areas are designated as geologically hazardous areas and subject to the provisions of Article 3 of this chapter.
 - 2. Other flood hazard areas identified by the County Public Works Department based on review of historical data, high water marks, photographs of past flooding, or

similar information from federal, state, county, or other valid sources when base flood elevation data from the Federal Insurance and Mitigation Administration has not been provided or is not accurate.

16.16.420 Frequently Flooded Areas – General Standards

- A. All development shall conform to the provisions of Title 17, Flood Damage Prevention of the Whatcom County Code and the applicable provisions of this chapter.
- B. Development within frequently flooded areas shall be allowed pursuant to the mitigation sequence in WCC 16.16.260. The Technical Administrator shall have the authority to require mitigation for adverse impacts to floodplain ecological functions provided that such mitigation shall be consistent and compatible with the goal of protecting health and safety and minimizing risks to property.

16.16.430 Review and Report Requirements

- A. When County critical area maps or other sources of credible information indicate that a site proposed for development is or may be located within a frequently flooded area, the County Public Works Department River and Flood Division and/or the Technical Administrator shall have the authority to require a critical area assessment report. The Public Works Department shall have primary responsibility for reviewing and approving proposed developments provided that the Technical Administrator shall review development proposals for consistency with the standards provided in this chapter.
- B. Critical areas assessment reports for frequently flooded areas shall meet the requirements of WCC 17.12.010 and WCC 16.16.255. The Technical Administrator shall have the authority to modify these requirements when he/she determines that any portion of these requirements is unnecessary given the scope and/or scale of the proposed development. The Technical Administrator also shall have the authority to require additional information that discloses and describes the effects of proposed development on floodplain functions, including, but not limited to: storing and conveying floodwater; reducing peak flows and flow velocities; reducing redd scour and displacing rearing juvenile fish; maintaining sediment quality in streams; reducing shear stress and bank erosion; improving water quality; providing wildlife habitat; maintaining fish access; and cycling nutrients or providing other hyporheic functions that link surface and groundwater systems. The reports shall also include mitigation for adverse effects on floodplain ecological functions.
- C. Critical areas assessment report requirements may be waived for single-family developments and structures accessory to agricultural uses when the Technical Administrator and the Public Works Department determine that no adverse impacts or risks to life, property, or ecological functions will occur.

ARTICLE 5 CRITICAL AQUIFER RECHARGE AREAS

16.16.500 Purpose

The purposes of this article are to:

- A. Preserve, protect, and conserve Whatcom County's ground water resources for current and future generations by protecting critical aquifer recharge areas from contamination.
- B. Prevent adverse impacts on ground water quantity by regulating development activities that could deplete aquifer storage, reduce ground water levels, and/or diminish infiltration and replenishment of ground water.
- C. Prioritize the management, protection, and conservation of groundwater recharge areas as sources of potable water supply.
- D. Establish review procedures for development activities that have the potential to adversely affect critical aquifer recharge areas.

16.16.510 Designation, Classification and Mapping – Critical Aquifer Recharge Areas

- A. Critical aquifer recharge areas play a crucial role in supplying potable water (as defined by WAC 365-190-030(2)). These recharge areas have geologic conditions that allow high infiltration rates, which contribute significantly to the replenishment of ground water. These conditions also create a high potential for ground water contamination. These areas are hereby designated as critical areas and subject to the provisions of this chapter.
- B. The approximate location and extent of critical aquifer recharge areas are shown on the County's critical area maps. These maps are to be used as a guide and do not provide a definitive critical area designation. The County shall update the maps as recharge areas are identified and as new information becomes available.
- C. Critical aquifer recharge areas shall be designated and classified as follows:
 - 1. Low, moderate, and high susceptibility aquifer recharge areas. Aquifer recharge areas susceptible to degradation or depletion because of hydrogeologic characteristics are those areas meeting the criteria established by the State Department of Ecology (*Guidance Document for the Establishment of Critical Aquifer Recharge Area Ordinances*, July 2000, Publication # 97-30, Version 4.0).
 - 2. Wellhead protection areas. The area defined by the boundaries of the ten (10) year time of ground water travel, in accordance with WAC 246-290-135. For purposes of this chapter, all wellhead protection areas shall be designated as highly susceptible critical aquifer recharge areas.
- D. If special groundwater management areas or susceptible groundwater management areas are established in Whatcom County in accordance with WAC 173-200-090 or WAC 173-100-010, respectively, then these areas shall be incorporated into the highly susceptible aquifer designation.

16.16.520 Critical Aquifer Recharge Areas – General Standards

All development in a critical aquifer recharge area shall meet the following standards:

- A. The proposed development will not cause contaminants to enter the aquifer and will not significantly adversely affect the recharging of the aquifer.
- B. The proposed development must comply with the water source protection requirements and recommendations of the Federal Environmental Protection Agency, State Department of Health, and the Whatcom County Health Department.
- C. The proposed development must be designed and constructed in accordance with the County storm water management requirements or other applicable storm water management standards (Whatcom County Development Standards Chapter 2, WCC Title 20).

16.16.525 Standards – Activity Subject to Critical Area Review

The following development activities, when proposed in moderate and high susceptibility critical aquifer recharge areas, have the potential to adversely affect groundwater quality and/or quantity and shall require submittal of a critical areas assessment report as defined in WCC 16.16.255 and WCC 16.16.535:

- A. Any development with an on-site domestic septic system at a gross density greater than one system per residence per acre.
- B. All storage tanks and storage facilities for hazardous substances and/or hazardous wastes, provided that:
 - 1. The tanks must comply with Department of Ecology regulations contained in WAC 173-360 and 173-303 as well as International Building Code requirements;
 - 2. All new underground tanks and facilities shall be designed and constructed so as to prevent releases due to corrosion or structural failure for the operational life of the tank, or have a secondary containment system to prevent the release of any stored substances;
 - 3. All new aboveground storage tanks and facilities shall be designed and constructed so as to prevent the release of a hazardous substance to the ground, ground waters, or surface waters by having primary and secondary containment.
- C. Vehicle repair, servicing and salvaging facilities, provided that the facility must be conducted over impermeable pads and within a covered structure capable of withstanding normally expected weather conditions. Chemicals used in the process of vehicle repair and servicing must be stored in a manner that protects them from weather and provides containment should leaks occur. Dry wells shall not be allowed on sites used for vehicle repair and servicing. Dry wells existing on the site prior to facility establishment must be abandoned using techniques approved by the State Department of Ecology prior to commencement of the proposed activity.

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- D. Use of reclaimed waste water must be in accordance with adopted water or sewer comprehensive plans that have been approved by the State Departments of Ecology and Health and the Whatcom County Council per 57.16 RCW, provided that:
1. Surface spreading must meet the ground water recharge criteria given in Chapter 90.46.080 RCW and Chapter 90.46.010(10).
 2. Direct injection must be in accordance with the standards developed by authority of Chapter 90.46.042 RCW.
- E. Any other development activity that the Technical Administrator determines is likely to have a significant adverse impact on ground water quality or quantity, or on the recharge of the aquifer. The determination must be made based on credible scientific information.
- F. Metals and hard rock mining and new sand and gravel mining subject to the provisions of the County's current MRL review procedures in Title 20, WCC 20.73, provided that for new MRLs such activities shall be prohibited within the 10-year travel time zone of wellhead protection areas.

16.16.530 Standards – Prohibited Uses

The following developments and uses are prohibited in critical aquifer recharge areas:

- A. New landfills, including hazardous or dangerous waste, municipal solid waste, special waste, wood waste of more than 2,000 cubic yards, and inert and demolition waste landfills.
- B. Underground injection wells. Class I, III, and IV wells and subclasses 5F01, 5D03, 5F04, 5W09, 5W10, 5W11, 5W31, 5X13, 5X14, 5X15, 5W20, 5X28, and 5N24 of Class V wells.
- C. Wood treatment facilities that allow any portion of the treatment process to occur over permeable surfaces (both natural and manmade).
- D. Facilities that store, process, or dispose of chemicals containing perchloroethylene (PCE) or methyl tertiary butyl ether (MTBE).
- E. Facilities that store, process, or dispose of radioactive substances.
- F. Other activities that the Technical Administrator determines would significantly degrade groundwater quality and/or reduce the recharge to aquifers currently or potentially used as a potable water source, or that may serve as a significant source of base flow to a regulated stream. The determination must be made based on credible scientific information.

16.16.535 Review and Report Requirements

- A. When County critical area maps or other sources of credible information indicate that the proposed development activities listed in WCC 16.16.525 occur within a critical aquifer recharge area, the Technical Administrator shall have the authority to require a critical area assessment report and to regulate developments accordingly. Critical areas assessment reports for aquifer recharge areas shall meet the requirements WCC 16.16.255, and this section. Assessment reports shall include the following site- and proposal-related

information unless the Technical Administrator determines that any portion of these requirements is unnecessary given the scope and/or scale of the proposed development:

1. Available information regarding geologic and hydrogeologic characteristics of the site, including the surface location of all critical aquifer recharge areas located on site or immediately adjacent to the site, and permeability of the unsaturated zone;
 2. Ground water depth, flow direction and gradient based on available information;
 3. Currently available data on wells and springs within 1,300 feet of the project area;
 4. The presence and approximate location of other critical areas, including surface waters, within 1,300 feet of the project area based on available data and maps;
 5. Existing and available historic water quality data for the area to be affected by the proposed activity;
 6. Proposed best management practices;
 7. The effects of the proposed project on the ground water quality and quantity, including:
 - a. Potential effects on stream flow, wetlands and/or other resources, and on ecosystem processes;
 - b. Predictive evaluation of ground water withdrawal effects on nearby wells and surface water features; and
 - c. Predictive evaluation of contaminant transport based on potential releases to ground water; and
 8. A spill plan that identifies equipment and/or structures that could fail, resulting in an impact. Spill plans shall include provisions for emergency response provisions as well as regular inspection, repair, and replacement of structures and equipment that could fail.
- B. If the applicant can demonstrate through a valid hydrogeological assessment that geologic and soil conditions underlying their property do not meet the criteria for low, moderate, or high susceptibility, the property shall not be considered a critical aquifer recharge area.

ARTICLE 6 WETLANDS

16.16.600 Purpose

The purposes of this article are to:

- A. Recognize and protect the beneficial functions performed by many wetlands, which include but are not limited to, providing food, breeding, nesting and/or rearing habitat for fish and wildlife; recharging and discharging ground water; contributing to stream flow during low flow periods; stabilizing stream banks and shorelines; storing storm and flood waters to reduce flooding and erosion; and improving water quality through biofiltration, adsorption, retention and transformation of sediments, nutrients, and toxicants.
- B. Regulate land use to avoid adverse effects on wetlands and maintain the functions and values of freshwater and estuarine wetlands throughout Whatcom County.
- C. Establish review procedures for development proposals in and adjacent to wetlands.

16.16.610 Designation, Rating, and Mapping – Wetlands

- A. Wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Swamps, fresh and saltwater marshes, bogs, and some meadows are examples of wetlands. Some riparian areas adjacent to streams are also wetlands.
- B. Wetlands shall be identified in accordance with the requirements of RCW 36.70A.175. Unless otherwise provided for in this chapter, all areas within the County meeting the criteria in the *Washington State Wetlands Identification and Delineation Manual*, (Ecology Publication 96-94) or the US Army Corps of Engineers Wetlands delineation Manual, 1987 Edition and corresponding guidance letters; regardless of any formal identification, are hereby designated critical areas and are subject to the provisions of this article.
- C. The approximate location and extent of wetlands are shown on the County's critical area maps. These maps are to be used as a guide and do not provide a definitive critical area designation. The County shall update the maps as new wetlands are identified and as new information becomes available.
- D. Wetlands shall be rated based on categories that reflect the functions and values of each wetland. Wetland categories shall be based on the criteria provided in the *Washington State Wetland Rating System for Western Washington*, revised August 2004 (Ecology Publication #04-06-025) as determined using the appropriate rating forms contained in that publication. These categories are generally defined as follows:
 - 1. Category I Wetlands. Category I wetlands are those wetlands of exceptional value in terms of protecting water quality, storing flood and storm water, and/or providing habitat for wildlife as indicated by a rating system score of 70 points or more on the Ecology rating forms. These are wetland communities of infrequent occurrence that

- often provide documented habitat for sensitive, threatened or endangered species, and/or have other attributes that are very difficult or impossible to replace if altered.
2. Category II Wetlands. Category II wetlands have significant value based on their function as indicated by a rating system score of between 51 and 69 points on the Ecology rating forms. They do not meet the criteria for Category I rating but occur infrequently and have qualities that are difficult to replace if altered.
 3. Category III Wetlands. Category III wetlands have important resource value as indicated by a rating system score of between 30 and 50 points on the Ecology rating forms. They occur commonly in Whatcom County.
 4. Category IV Wetlands. Category IV wetlands are wetlands of limited resource value as indicated by a rating system score of less than 30 points on the Ecology rating forms. They typically have vegetation of similar age and class, lack special habitat features, and/or are isolated or disconnected from other aquatic systems or high quality upland habitats.
- E. All wetlands shall be regulated regardless of size, provided that Category IV wetlands less than one-tenth (0.1) acre (4,356 square feet) shall be exempt from the requirements of this article when all of the following criteria are met:
1. The wetland does not provide significant suitable breeding habitat for native amphibian species. Suitable breeding habitat may be indicated by adequate and stable seasonal inundation, presence of thin-stemmed emergent vegetation, and clean water;
 2. The wetland does not have unique characteristics that would be difficult to replace through standard compensatory mitigation practices;
 3. The wetland is not located within a habitat conservation area as defined in WCC 16.16.710 and is not integral to the maintenance of habitat functions of a habitat conservation area;
 4. The wetland is not located within a floodplain and/or not associated with a shoreline of the state as defined by the County's Shoreline Master Program (WCC Title 23);
 5. The wetland is not part of a mosaic of wetlands and uplands. This criterion shall be determined using the guidance provided in Ecology's Wetland Rating System for Western Washington (Publication #04-06-025); and
 6. The wetland is not identified as locally significant by a local watershed plan prepared pursuant to WAC 400-12.

16.16.620 Wetlands – General Standards

The following activities may be permitted in wetlands and/or wetland buffers as specified when all reasonable measures have been taken to avoid adverse effects on wetland functions and values, compensatory mitigation is provided for all adverse impacts to wetlands that cannot be avoided, and the amount and degree of alteration are limited to the minimum needed to accomplish the project purpose:

- A. Developments that meet the reasonable use or variance standards as set forth in WCC 16.16.270.
- B. Surface water discharge into Category II, III, and IV wetlands and their buffers and/or Category I wetland buffers when no other alternatives for discharge are feasible and the discharge is designed to minimize physical, hydrologic and ecological impacts to the wetland.
- C. Utility lines in Category II, III, and IV wetlands and their buffers and/or Category I wetland buffers when no feasible conveyance alternative is available and shall be designed and constructed to minimize physical, hydrologic and ecological impacts to the wetland, and meets all of the following:
 - 1. The utility line is located as far from the wetland edge as possible and in a manner that minimizes disturbance of soils and vegetation.
 - 2. Clearing, grading, and excavation activities are limited to the minimum necessary to install the utility line and the area is restored following utility installation.
 - 3. Buried utility lines shall be constructed in a manner that prevents adverse impacts to subsurface drainage. This may include the use of trench plugs or other devices as needed to maintain hydrology.
- D. Public roads, bridges, and trails in Category II, III, and IV wetlands and their buffers and/or Category I wetland buffers when no feasible alternative alignment is available and the road, bridge or trail is designed and constructed to minimize physical, hydrologic and ecological impacts to the wetland, including placement on elevated structures as an alternative to fill, where feasible.
- E. Access to private development sites may be permitted to cross Category II, III, or IV wetlands or their buffers, provided there are no feasible alternative alignments and measures are taken to maintain preconstruction hydrologic connectivity across the access road. Alternative access shall be pursued to the maximum extent feasible, including through the provisions of RCW 8.24. Exceptions or deviations from technical standards for width or other dimensions, and specific construction standards to minimize impacts may be specified, including placement on elevated structures as an alternative to fill, if feasible.
- F. Construction of a structure that is associated with an agricultural use; or the reconstruction, remodeling, or maintenance of such structures in wetland buffers, subject to all of the following specific criteria:
 - 1. The structure is located within an existing lot of record and is an existing agricultural use.
 - 2. There is no other feasible location with less impact to critical areas.
 - 3. Clearing and grading activity and impervious surface are limited to the minimum necessary to accommodate the proposed structure and, where possible, surfaces shall be made of pervious materials.

- G. Domestic wells serving single-family developments and necessary appurtenances, including a pump and appropriately sized pump house, but not including a storage tank, in wetland buffers when all of the following conditions are met:
1. There is no viable alternative to the well site outside of the buffer and the well is located as far back from the wetland edge as is feasible; and
 2. The well is more than seventy-five (75) feet deep.
- H. Storm water management facilities, limited to detention / retention / treatment ponds, media filtration facilities, and lagoons or infiltration basins, within the outer fifty percent (50%) of a Category II, III or IV wetland buffer, provided that:
1. Construction of the storm water facility does not displace or impact a forested buffer;
 2. The width of the buffer between the storm water facility and the wetland edge is not less than the low intensity land use buffer standards in WCC 16.16.630.
 3. There is no other feasible location for the storm water facility and the facility is located, constructed, and maintained in a manner that minimizes adverse effects on the buffer and adjacent critical areas;
 4. The storm water facility is designed to mimic and resemble natural wetlands and meets applicable County or state storm water management standards and the discharge water meets state water quality standards; and
 5. Low impact development approaches have been considered and implemented to the maximum extent feasible.
- I. Storm water conveyance or discharge facilities such as dispersion trenches, level spreaders, and outfalls may be permitted within a Category II, III, or IV wetland buffer on a case by case basis when the Technical Administrator determines that all of the following are met:
1. Due to topographic or other physical constraints, there are no feasible locations for these facilities in the outer buffer area or outside the buffer.
 2. The discharge is located as far from the wetland edge as possible and in a manner that minimizes disturbance of soils and vegetation.
 3. The discharge outlet is designed to prevent erosion and promote infiltration.
- J. Passive recreation facilities that are part of a non-motorized trail system or environmental education program including walkways, wildlife viewing structures, and trails, in wetland buffers provided that all of the following criteria are met:
1. Trails shall not exceed 10 feet in width and shall be made of pervious material where feasible.
 2. The trail or facility is located in the outer fifty percent (50%) of the buffer area.

3. The trail is constructed and maintained in manner that minimizes disturbance of the buffer and associated critical areas.
- K. Existing ongoing agricultural activities subject to the following:
1. The activities are conducted in accordance with all applicable provisions of this chapter and WCC Title 17; or
 2. The agricultural activity is in compliance with the Conservation Program on Agricultural Lands (CPAL) as described in WCC 16.16.290, and Appendix A.
- L. Single-family developments may be permitted to encroach into wetland buffers subject to the Technical Administrator's approval provided that all of the criteria in WCC 16.16.270.A are met.
- M. On-site sewage disposal systems (OSS) may be permitted in wetland buffers when accessory to an approved residential structure, for which it is not feasible to connect to a public sanitary sewer system and when operated and maintained in accordance with WCC 24.05.170, provided that adverse effects on water quality are avoided.

16.16.630 Standards – Wetland Buffer Widths

The Technical Administrator shall have the authority to require buffers from the edges of all wetlands in accordance with the following:

- A. Wetland buffers shall be established to protect the integrity, functions and values of the wetland. Wetland buffers shall be measured perpendicular to the wetland edge on all sides as marked in the field. Buffers shall not include areas that are functionally and effectively disconnected from the wetland by a road or other substantial developed surface.
- B. The buffer standards required by this article presume the existence of a dense vegetation community in the buffer adequate to protect the wetland functions and values. When a buffer lacks adequate vegetation, the Technical Administrator may increase the standard buffer, require buffer planting or enhancement, and/or deny a proposal for buffer reduction or buffer averaging.
- C. The standard buffer shall be based on the intensity of the proposed land use and the functions and values provided by the wetland. The intensity of the land use shall be determined in accordance with the definitions outlined in Article 8 unless the Technical Administrator determines that a lesser level of impact is appropriate based on information provided by the applicant demonstrating that the proposed land use will have a lesser impact on the wetland than that contemplated under the buffer standard otherwise appropriate for the land use.
- D. There are three (3) possible standard buffer scenarios listed in the following tables:
 1. For wetlands that have a high level of function for wildlife habitat as indicated by a habitat function score of twenty nine (29) points or more on the wetland rating form, the buffers shall be as follows:

Wetland Category	High Intensity	Moderate Intensity	Low Intensity
Buffer Width (feet)			
Category I	300	225	150
Category II	275	150	100
Category III	150	110	75
Category IV	50	40	25
Definitions for high, moderate and low intensity land use are provided in Article 8.			

2. For wetlands that have a moderate level of function for wildlife habitat as indicated by a habitat function score of twenty to twenty eight (20-28) points on the wetland rating form, the buffers shall be as follows:

Wetland Category	High Intensity	Moderate Intensity	Low Intensity
Buffer Width (feet)			
Category I	150	110	75
Category II	150	110	75
Category III	150	100	60
Category IV	50	40	25
Definitions for high, moderate and low intensity land use are provided in Article 8.			

3. For wetlands that have a low level of function for wildlife habitat as indicated by a habitat function score of less than twenty (20) points on the wetland rating form, the buffers shall be as follows:

Wetland Category	High Intensity	Moderate Intensity	Low Intensity
Buffer Width (feet)			
Category I	100	75	50
Category II	100	75	50
Category III	80	60	50
Category IV	50	40	25
Definitions for high, moderate and low intensity land use are provided in Article 8.			

- E. Because there is a large increase in width associated with a one point increase in the habitat score, the Technical Administrator may deviate from the buffer requirements outlined in 16.16.630.D and increase the buffer widths in increments of 20 feet for every one point increase in the habitat score in accordance with guidance developed by the Department of Ecology in Wetlands in Washington State - Volume 2: Guidance for Protecting and Managing Wetlands (Publication #05-06-008).

16.16.640 Standards – Wetland Buffer Reduction

The Technical Administrator shall have the authority to reduce the standard buffer widths identified in WCC 16.16.630, provided that the general standards for avoidance and minimization per 16.16.260.A(1)(a) and (b) shall apply, and provided further that all of the following apply:

- A. The buffer reduction shall not adversely affect the functions and values of the adjacent wetlands;
- B. The buffer of a Category I or II wetland shall not be reduced to less than seventy-five (75) percent of the required buffer or fifty (50) feet, whichever is greater;
- C. The buffer of a Category III or IV wetland shall not be reduced to less than fifty (50) percent of the required buffer, or twenty five (25) feet, whichever is greater;
- D. The applicant implements all reasonable measures to reduce the adverse effects of adjacent land uses and ensure no net loss of buffer functions and values. The specific measures that shall be implemented include, but are not limited to, the following:
 - 1. Direct lights away from the wetland and buffer.
 - 2. Locate facilities that generate substantial noise (such as some manufacturing, industrial and recreational facilities) away from the wetland and buffer.
 - 3. Establish covenants limiting use of pesticides within one hundred-fifty (150) feet of wetland.
 - 4. Implement integrated pest management programs.
 - 5. Infiltrate or treat, detain and disperse runoff into buffer.
 - 6. Post signs at the outer edge of the critical area or buffer to clearly indicate the location of the critical area according to the direction of the County.
 - 7. Plant buffer with native vegetation appropriate for the region to create screens or barriers to noise, light, human intrusion and discourage domestic animal intrusion.
 - 8. Use low impact development where appropriate.
 - 9. Establish a permanent conservation easement to protect the wetland and the associated buffer.

16.16.650 Standards – Wetland Buffer Averaging

The Technical Administrator shall have the authority to average wetland buffer widths on a case-by-case basis, provided that the general standards for avoidance and minimization per 16.16.260A(1)(a) and (b) shall apply, and when all of the following criteria are met:

- A. The buffer averaging does not reduce the functions or values of the wetland;
- B. The total area contained in the buffer area after averaging is no less than that which would be contained within the standard buffer, and all increases in buffer dimension for averaging must be generally parallel to the wetland boundary to avoid creating buffer “panhandles”;
- C. The wetland contains variations in sensitivity due to existing physical characteristics or the character of the buffer varies in slope, soils, or vegetation;

- D. The minimum buffer width of a Category I or II wetland shall not be less than seventy-five (75) percent of the widths established under WCC 16.16.630; or fifty feet (50) feet, whichever is greater;
- E. The minimum buffer width of a Category III or IV wetland shall not be less than fifty (50) percent of the widths established under WCC 16.16.630; or twenty five (25) feet, whichever is greater; and
- F. The buffer has not been reduced in accordance with WCC 16.16.640. Buffer averaging is not allowed if the buffer has been reduced.

16.16.660 Standards – Wetland Buffer Increases

The Technical Administrator shall have the authority to increase the width of the standard buffer width on a case-by-case basis when there is sound evidence that a larger buffer is required by an approved habitat management plan as outlined in WCC 16.16.750, or such increase is necessary to:

- A. Protect the function and value of that wetland including, but not limited to, compensating for a poorly vegetated buffer or a buffer that has a steep slope (greater than thirty percent); or
- B. Prevent windthrow damage; or
- C. Maintain viable populations of species such as herons and other priority fish and wildlife; or
- D. Protect wetlands or other critical areas from landslides, erosion or other hazards.

16.16.670 Review and Reporting Requirements

- A. Review Process for Non Single-family Development. When County critical area maps or other sources of credible information indicate that a site proposed for development or alteration may contain or abut wetlands or wetland buffers, the Technical Administrator may require a site evaluation (field investigation) by a qualified professional to determine whether or not a regulated wetland is present and, if so, its relative location in relation to the proposed project area or site. If the Technical Administrator determines that a wetland is more likely than not present, the Technical Administrator shall require a wetland assessment report pursuant to WCC 16.16.255 and WCC 16.16.670.B. If no regulated wetlands are present, then wetland review will be considered complete.
- B. A wetland assessment report describes the characteristics of the subject property and adjacent areas. The assessment shall include determination of the wetland category and standard wetland buffers as set forth in WCC 16.16.630. The investigation shall also include field identification and delineation of wetland boundaries, and may include analysis of historical aerial photos, review of public records, and interviews with adjacent property owners. Assessment reports shall include the following site- and proposal-related information unless the Technical Administrator determines that any portion of these requirements is unnecessary given the scope and/or scale of the proposed development:
 - 1. Location information (legal description, parcel number, and address);

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2. A qualitative written assessment and accompanying maps of critical areas and buffers within three hundred (300) feet of the site and an estimate of the existing acreage for each. For on-site wetlands, the assessment shall include the dominant and subdominant plant species; soil type, color and texture; sources of hydrology (patterns of surface and subsurface water movement, precipitation, etc.); topography; and other pertinent information. The assessment of off-site wetlands shall be based on available information and shall not require accessing off-site properties;
 3. Existing wetland functions and values and a detailed description of the effects of the proposed development on wetland and buffer function and value, including the area of direct wetland disturbance; area of buffer reduction or averaging including documentation that functions and values will not be adversely affected by the reduction or averaging; effects of storm water management; proposed hydrologic alteration including changes to natural drainage or infiltration patterns; effects on fish and wildlife species and their habitats; clearing and grading impacts; temporary construction impacts; and effects of increased noise, light or human intrusion;
 4. Existing physical features of the site including buildings, fences, and other structures, roads, parking lots, utilities, water bodies, etc.;
 5. Copies of the wetland rating forms from the Ecology Wetland Rating System for Western Washington (Ecology Publication #04-06-025).
- C. Review Process for Single-family Development. The following options shall apply when development of a single-family dwelling is proposed on a site that contains wetlands or wetland buffers:
1. An assessment report shall be required when the single-family dwelling and associated features are proposed within the wetland or standard buffer of a regulated wetland. The applicant may hire a qualified professional to prepare the assessment report or may request that the County assess the regulated wetland(s) and determine the impacts associated with the project, subject to the following:
 - a. Field investigation by County staff shall be at the discretion of the Technical Administrator and subject to workload and scheduling constraints.
 - b. Fees for County staff services shall be in accordance with the unified fee schedule.
 2. When the proposed single-family dwelling and associated features are located outside the standard buffer required under WCC 16.16.630 (no encroachment), no assessment report shall be required.
 3. If a regulated wetland buffer from a neighboring property extends onto a proposed development site for which review under this chapter is required, the Technical Administrator shall have the authority to require that permanent, clearly visible, wetland buffer signs be placed at the edge of the buffer in accordance with WCC 16.16.265. The applicant shall provide written documentation that no buffer encroachment will occur. The documentation shall be in the form of a letter or similar affidavit.
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16.16.680 Standards – Wetland Mitigation

Activities that adversely affect wetlands and/or wetland buffers shall include mitigation sufficient to achieve no net loss of wetland function and values in accordance with WCC 16.16.260 and this section.

- A. In determining the extent and type of mitigation required, the Technical Administrator may consider all of the following:
1. The ecological processes that affect and influence critical area structure and function within the watershed or sub-basin;
 2. The individual and cumulative effects of the action upon the functions of the critical area and associated watershed;
 3. Observed or predicted trends regarding the gains or losses of specific wetland types in the watershed, in light of natural and human processes;
 4. The likely success of the proposed mitigation measures;
 5. Effects of the mitigation actions on neighboring properties; and
 6. Opportunities to implement restoration actions formally identified by an adopted Shoreline Restoration Plan, watershed planning document prepared and adopted pursuant to RCW 90.82, a watershed plan prepared pursuant to WAC 400-12, a Salmonid Recovery Plan or project that has been identified on the Salmon Recovery Board Habitat Project List or by the Washington Department of Fish and Wildlife as essential for fish and wildlife habitat enhancement.
- B. Type of Mitigation.
1. Wetland alterations. Compensatory mitigation projects shall restore, create, rehabilitate, enhance, and/or preserve equivalent wetland functions and values. Compensation for wetland alterations shall occur in the following order of preference:
 - a. Re-establishing (also referred to as restoring) wetlands on upland sites that were formerly wetlands.
 - b. Creating wetlands on disturbed upland sites such as those consisting primarily of nonnative, invasive plant species.
 - c. Rehabilitation of wetlands for the purposes of repairing or restoring natural and/or historic functions.
 - d. Enhancing significantly degraded wetlands.
 - e. Preserving Category I or II wetlands that are under imminent threat, provided that preservation shall only be allowed in combination with other forms of mitigation and when the Technical Administrator determines that the overall

mitigation package fully replaces the functions and values lost due to development.

2. Buffer alterations. Compensatory mitigation for buffer impacts shall include enhancement of degraded buffers by planting native species, removing structures and impervious surfaces within buffers, and other measures to achieve equivalent or greater buffer functions.

C. Mitigation Ratios.

1. Compensation for wetland buffer impacts shall occur at a minimum 1:1 ratio.
2. Compensatory mitigation for wetland alterations shall be based on the wetland category and the type of mitigation activity proposed. The replacement ratio shall be determined according to the ratios provided in the table below, provided that the replacement ratio for preservation shall be 10 times the ratio for re-establishment or creation. The created, re-established, rehabilitated, or enhanced wetland area shall at a minimum provide a level of function equivalent to the wetland being altered and shall be located in an appropriate landscape setting.

Wetland Category	Replacement Ratio*		
	Re-establishment or Creation	Rehabilitation	Enhancement Only
Category I	No alteration allowed		
Category II	3:1	6:1	12:1
Category III	2:1	4:1	8:1
Category IV	1.5:1	3:1	6:1

*Ratio is the replacement area: impact area

3. The mitigation ratios noted above shall not apply to mitigation banks as defined by this chapter. Credit and debit procedures for mitigation banks shall be determined in accordance with the mitigation banking provisions outlined in WCC 16.16.260.F.

D. Replacement wetlands established pursuant to these mitigation provisions shall have adequate buffers to ensure their protection. The buffer shall be based on the category of the re-established, created, rehabilitated, enhanced, or preserved wetland provided that the Technical Administrator shall have the authority to approve a smaller buffer when existing site constraints (such as a road) prohibit attainment of the standard buffer. Replacement wetlands shall not create buffer encumbrances on adjoining properties.

E. The Technical Administrator shall have the authority to adjust the replacement ratios when one or more of the following apply:

1. When a combination of mitigation approaches is proposed. In such cases, the area of altered wetland shall be replaced at a 1:1 ratio through re-establishment or creation, and the remainder of the area needed to meet the ratio can be replaced by enhancement at a 2:1 ratio. For example, impacts to 1 acre of a Category II wetland

requiring a 3:1 ratio for creation can be compensated by creating 1 acre and enhancing 4 acres (instead of the additional 2 acres of creation that would otherwise be required).

2. When the project proponent has a demonstrated ability, based on past performance, to successfully design, construct, monitor and maintain wetland mitigation projects/sites.
3. When meeting the required ratios would adversely affect other natural and valuable characteristics of an otherwise appropriate and suitable mitigation site.

The ratios reduced pursuant to WCC 16.16.680.E.2 and 3 above shall be at least 60 percent of the standard ratios listed in WCC 16.16.680.C.2 and shall not be less than a 1:1 ratio.

- F. Compensatory mitigation shall be provided on-site or off-site in the location that will provide the greatest ecological benefit and have the greatest likelihood of success, provided that mitigation occurs as close as possible to the impact area and within the same watershed as the permitted alteration. This provision may be waived upon demonstration through a watershed- or landscape-based analysis that mitigation within an alternative sub-basin of the same basin would have the greatest ecological benefit and the greatest likelihood of success provided that limiting functions shall not be removed from sensitive watersheds identified in WCC Title 20. Mitigation shall occur within WRIA 1 or 3.
- G. All mitigation areas shall be protected and managed to prevent degradation and ensure protection of critical area functions and values into perpetuity. Permanent protection shall be achieved through deed restriction or other protective covenant in accordance with WCC 16.16.265.
- H. Where feasible, mitigation projects shall be completed prior to activities that will disturb wetlands. In all other cases, mitigation shall be completed as quickly as possible following disturbance and prior to use or occupancy of the activity or development. Construction of mitigation projects shall be timed to reduce impacts to existing fish, wildlife and flora, provided that the Technical Administrator may adjust the timing requirements to allow grading, planting, and other activities to occur during the appropriate season(s).

16.16.690 Standards – Compensatory Wetland Mitigation Plan

- A. In addition to meeting the requirements of WCC 16.16.260.B, a compensatory mitigation plan for wetland and wetland buffer impacts shall meet the following requirements:
 1. The plan shall be based on applicable portions of the Washington State Department of Ecology's *Guidelines for Developing Freshwater Wetland Mitigation Plans and Proposals*, 2004 or other appropriate guidance document that is consistent with Best Available Science.
 2. The plan shall contain sufficient information to demonstrate that the proposed activities are logistically feasible, constructible, ecologically sustainable, and likely to succeed. Specific information to be provided in the plan shall include:
 - a. The rationale for site selection;

- b. General goals of the plan, including wetland function, value, and acreage;
 - c. Description of baseline (existing) site conditions including topography, vegetation, soils, hydrology, habitat features (i.e., snags), surrounding land use, and other pertinent information;
 - d. Field data confirming the presence of adequate hydrology (surface and/or groundwater) to support existing and compensatory wetland area(s);
 - e. Nature of mitigation activities, including area of restored, created, enhanced, rehabilitated and preserved wetland, by wetland type;
 - f. Detailed grading and planting plans showing proposed post-construction topography; general hydrologic patterns; spacing and distribution of plant species, size and type of proposed planting stock, watering or irrigation plans, and other pertinent information;
 - g. A description of site treatment measures including invasive species removal, use of mulch and fertilizer, placement of erosion and sediment control devices, and best management practices that will be used to protect existing wetlands and desirable vegetation;
 - h. A demonstration that the site will have adequate buffers sufficient to protect the wetland functions in perpetuity.
- B. All compensatory mitigation projects shall be monitored in accordance with WCC 16.16.260.C for a period necessary to establish that performance standards have been met. The Technical Administrator shall have the authority to extend the monitoring period for up to ten (10) years and require additional monitoring reports when any of the following conditions apply:
- 1. The project does not meet the performance standards identified in the mitigation plan.
 - 2. The project does not provide adequate replacement for the functions and values of the impacted critical area.
 - 3. The project involves establishment of forested plant communities, which require longer time for establishment.
- C. Reports shall be submitted annually for the first three (3) years following construction and at the completion of years 5, 7, and 10 if applicable to document milestones, successes, problems, and contingency actions of the compensatory mitigation.

ARTICLE 7 HABITAT CONSERVATION AREAS (HCAs)

16.16.700 Purpose

The purposes of this article are to:

- A. Maintain fish and wildlife populations, especially populations of anadromous fish species, by protecting and conserving valuable fish and wildlife habitat and protecting the ecological processes that sustain these resources.
- B. Protect marine shorelines, valuable terrestrial habitats, and natural rivers and streams and their associated riparian areas, and the ecosystem processes on which these areas depend.
- C. Regulate development so that isolated populations of species are not created and habitat degradation and fragmentation are avoided, especially along riparian corridors.
- D. Maintain the natural geographic distribution, connectivity, and quality of fish and wildlife habitat.

16.16.710 Designation, Mapping and Classification – Habitat Conservation Areas

- A. Habitat conservation areas are those areas identified as being of critical importance to the maintenance of certain fish, wildlife, and/or plant species. These areas are typically identified either by known point locations of specific species (such as a nest or den) or by habitat areas or both. All areas within the County meeting these criteria are hereby designated critical areas and are subject to the provisions of this article (see also Appendix D).
- B. The approximate location and extent of identified fish and wildlife habitat areas are shown on the County's critical area maps. These maps are to be used as a guide and do not provide a definitive critical area determination. The County shall update the maps as new fish and wildlife habitat areas are identified.
- C. For purposes of this chapter, habitat conservation areas shall include all of the following:
 - 1. Streams. Streams shall be designated according to the following criteria:
 - a. Shoreline streams are those streams identified and regulated as shorelines of the state as defined by WAC 173-18-410 and designated in the Whatcom County Shoreline Master Program (WCC Title 23).
 - b. Other fish bearing streams that do not meet the definition of shorelines of the state but have known or potential use by anadromous or resident fish species. The Technical Administrator shall make determinations of known or potential fish use in consultation with federal, state and tribal biologists and in accordance with Best Available Science and shall take into consideration factors such as species life cycle requirements, habitat suitability, channel gradient, presence or lack of barriers, and a reasoned evaluation of current, historic, and potential fish use by a qualified professional.

- c. Non-fish bearing streams are those streams that have no known or potential use by anadromous or resident fish.
2. Areas with which federally and/or state listed species have a primary association.
3. State priority habitats and areas associated with state priority species.
4. Commercial and recreational shellfish areas, including designated Shellfish Habitat Conservation Areas.
5. Kelp and eelgrass beds.
6. Surf smelt, Pacific herring, and Pacific sand lance spawning areas.
7. Naturally occurring ponds under 20 acres in size.
8. Naturally occurring lakes over 20 acres and other waters of the state including marine waters, and waters planted with game fish by a government or tribal entity.
9. Natural Area Preserves and natural resource conservation areas.
10. Locally important species and habitats that have recreational, cultural, and/or economic value to citizens of Whatcom County, including the following:
 - a. Species
 - i. Osprey
 - ii. Turkey vulture
 - iii. Nooksack dace
 - iv. Salish sucker
 - b. Habitats
 - i. The Marine nearshore habitat and the associated vegetated marine riparian zone. These areas support productive eelgrass beds, marine algal turf, and kelp beds that provide habitat for numerous priority fish and wildlife species including, but not limited to, forage fish, seabird and shorebird foraging and nesting sites, and harbor seal pupping and haulout sites. This designation applies to the area from the extreme low tide limit to the ordinary high water mark. Provided that reaches of the marine shoreline that were lawfully developed for commercial and industrial uses, prior to the adoption of this chapter, may be excluded from this designation, but not otherwise exempt from this chapter. See Appendix E.
 - ii. Identified elk wintering and calving grounds.
 - iii. Unique natural plant communities designated by the Washington Department of Natural Resources.
 - iv. The Chuckanut wildlife corridor, which extends east from Chuckanut Mountain including Lookout Mountain, Stewart Mountain, and the

northern portions of Anderson Mountain to Chuckanut Bay and the adjacent marine waters and represents the last remaining place in the Puget Trough where the natural land cover of the Cascades continues to the shore of Puget Sound. See Appendix E.

- D. In addition to the species, habitats, and wildlife corridors identified in WCC 16.16.710.C.10, the County may designate additional species, habitats of local importance, and/or wildlife corridors as follows:
1. In order to nominate an area, species, or corridor to the category of Locally Important, an individual or organization must:
 - a. Demonstrate a need for special consideration based on:
 - i. Declining population,
 - ii. Sensitivity to habitat manipulation,
 - iii. Commercial, recreational, cultural, or other special value, or
 - iv. Maintenance of connectivity between habitat areas.
 - b. Propose relevant management strategies considered effective and within the scope of this chapter;
 - c. Identify effects on property ownership and use; and
 - d. Provide a map showing the species or habitat location(s).
 2. Submitted proposals shall be reviewed by the County and may be forwarded to the State Departments of Fish and Wildlife, Natural Resources, and/or other local, state, federal, and/or Tribal agencies or experts for comments and recommendations regarding accuracy of data and effectiveness of proposed management strategies.
 3. If the proposal is found to be complete, accurate, and consistent with the purposes and intent of this chapter and the various goals and objectives of the Whatcom County Comprehensive Plan, and the Growth Management Act, the County Council will hold a public hearing to solicit comment. Approved nominations will become designated locally important habitats, species, or corridors and will be subject to the provisions of this chapter.

16.16.720 Habitat Conservation Areas – General Standards

The following activities may be permitted in habitat conservation areas and/or their buffers when all reasonable measures have been taken to avoid adverse effects on species and habitats, compensatory mitigation is provided for all adverse impacts that cannot be avoided, and the amount and degree of the alteration are limited to the minimum needed to accomplish the project purpose, provided that locally important species and habitats shall be subject to WCC 16.16.730:

- A. Developments that meet the reasonable use and variance standards set forth in WCC 16.16.270.
- B. Relocation of streams, or portions of streams, when there is no other feasible alternative and when the relocation will result in equal or better habitat and water quality and quantity,

and will not diminish the flow capacity of the stream or other natural stream processes, provided that the relocation meets state Hydraulic Project Approval requirements and that relocation of shoreline streams shall be prohibited unless the relocation has been identified formally by the Washington Department of Fish and Wildlife as essential for fish and wildlife habitat enhancement or identified in watershed planning documents prepared and adopted pursuant to RCW 90.82, the Salmonid Recovery Plan or the Salmon Recovery Board Habitat Project List or County Shoreline Restoration Plan.

- C. Road, trail, bridge, and right-of-way crossings provided they meet the following criteria:
1. There is no other feasible alternative route with less impact on critical areas.
 2. The crossing minimizes interruption of natural processes such as channel migration, the downstream movement of wood and gravel and the movement of all fish and wildlife. Bridges are preferred for all stream crossings and should be designed to maintain the existing stream substrate and gradient, provide adequate horizontal clearance on each side of the ordinary high water mark, and provide adequate vertical clearance above the ordinary high water mark.
 3. Culverts shall be designed according to applicable state and federal guidance criteria for fish passage as identified in *Fish Passage Design at Road Culverts*, WDFW March 1999, and/or the National Marine Fisheries Service *Guidelines for Salmonid Passage at Stream Crossings*, 2000, (and subsequent revisions) and in accordance with a state Hydraulic Project Approval. The applicant or property owner shall maintain fish passage through the bridge or culvert.
 4. The County may require that existing culverts be removed or corrected as a condition of approval if the culvert is detrimental to fish passage or water quality, and a feasible alternative exists.
 5. Crossings shall be limited to the minimum width necessary. Common crossings are the preferred approach where multiple properties can be accessed by one crossing.
 6. Access to private development sites may be permitted to cross habitat conservation areas if there are no feasible alternative alignments. Alternative access shall be pursued to the maximum extent feasible, including through the provisions of RCW 8.24. Exceptions or deviations from technical standards for width or other dimensions, and specific construction standards to minimize impacts may be specified, including placement on elevated structures as an alternative to fill, if feasible.
- D. Construction of a structure that is associated with an agricultural use; or the reconstruction, remodeling, or maintenance of such structures in a habitat conservation area buffer, subject to all of the following criteria:
1. The structure is located within an existing lot of record and is an existing agricultural use.
 2. There is no other feasible location with less impact to critical areas.
 3. Clearing and grading activity and impervious surface are limited to the minimum

necessary to accommodate the proposed structure and, where possible, surfaces shall be made of pervious materials.

4. Unavoidable adverse effects on critical areas are mitigated in accordance with this chapter.
- E. Storm water management facilities limited to detention / retention / treatment ponds, media filtration, lagoons and infiltration basins may be permitted in a stream buffer, subject to all of the following standards:
1. The facility is located in the outer fifty percent (50%) of the standard stream buffer and does not displace or impact a forested riparian community;
 2. There is no other feasible location for the storm water facility and the facility is located, constructed, and maintained in a manner that minimizes adverse effects on the buffer and adjacent critical areas;
 3. The storm water facility meets applicable County or state storm water management standards and the discharge water meets state water quality standards; and
 4. Low impact development approaches have been considered and implemented to the maximum extent feasible.
- F. Storm water conveyance or discharge facilities such as dispersion trenches, level spreaders, and outfalls may be permitted in a habitat conservation area buffer on a case-by-case basis when the Technical Administrator determines that all of the following are met:
1. Due to topographic or other physical constraints, there are no feasible locations for these facilities outside the buffer;
 2. The discharge is located as far from the ordinary high water mark as possible and in a manner that minimizes disturbance of soils and vegetation;
 3. The discharge outlet is designed to prevent erosion and promote infiltration; and
 4. The discharge meets freshwater and marine state Water Quality Standards, including total maximum daily load (TMDL) standards as appropriate at the point of discharge. Standards should include filtration through mechanical or biological means, vegetation retention, timely reseeding of disturbed areas, use of grass-lined bioswales for drainage, and other mechanisms as appropriate within approved stormwater "special districts."
- G. Clearing and grading, when allowed as part of an authorized activity or as otherwise allowed in these standards, may be permitted provided that the following shall apply:
1. Grading is allowed only during the designated dry season, which is typically regarded as May to October of each year, provided that the County may extend or shorten the designated dry season on a case-by-case basis, based on actual weather conditions.
 2. Appropriate erosion and sediment control measures shall be used at all times. The

soil duff layer shall remain undisturbed to the maximum extent possible. Where feasible, disturbed topsoil shall be redistributed to other areas of the site. Areas shall be revegetated as needed to stabilize the site.

3. The moisture-holding capacity of the topsoil layer shall be maintained by minimizing soil compaction or re-establishing natural soil structure and infiltrative capacity on all areas of the project area not covered by impervious surfaces.
- H. Stream bank stabilization and shoreline protection may be permitted subject to all of the following standards:
1. Natural shoreline processes will be maintained to the maximum extent practicable. The activity will not result in increased erosion and will not alter the size or distribution of shoreline or stream substrate, or eliminate or reduce sediment supply from feeder bluffs.
 2. Stream and shoreline protection and launching ramps on shorelines of the state shall comply with WCC Title 23 and with state Hydraulic Project Approval requirements.
 3. No adverse impact to critical fish or wildlife habitat areas or associated wetlands will occur.
 4. No alteration of juvenile fish migration corridors will occur.
 5. No net loss of intertidal or riparian habitat function will occur.
 6. Non-structural measures, such as placing or relocating the development further from the shoreline, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient.
 7. Stabilization is achieved through bioengineering or soft armoring techniques in accordance an applicable hydraulic permit issued by the Washington Department of Fish and Wildlife.
 8. Hard bank armoring is discouraged and may occur only when the property contains an existing permanent structure(s) that is in danger from shoreline erosion caused by wave action or riverine processes and not erosion caused by upland conditions, such as the alteration of natural vegetation or drainage, and the armoring shall not increase erosion on adjacent properties and shall not eliminate or reduce sediment supply.
 9. Normal sloughing, erosion of steep bluffs, or shoreline erosion itself, without a scientific or geotechnical analysis, is not a demonstration of need.
 10. The bank stabilization or shore protection will not adversely affect habitat conservation areas or mitigation will be provided to compensate for adverse effects where avoidance is not feasible.
- I. Construction of trails and roadways less than or equal to thirty (30) feet wide, may be permitted in a habitat conservation area buffer subject to all of the following standards:

1. There is no other feasible alternative route with less impact on the critical area.
 2. The road or trail minimizes erosion and sedimentation, hydrologic alteration, and disruption of natural processes such as channel migration, wood recruitment and natural wildlife movement patterns.
 3. Trails in riparian (stream) buffers shall be located in the outer fifty percent (50%) of the standard buffer, except for limited viewing platforms and crossings; shall not exceed 12 feet in width and shall be made of pervious material where feasible.
 4. The road or trail is constructed and maintained in manner that minimizes disturbance of the buffer and associated critical areas.
- J. New utility lines and facilities may be permitted when all of the following criteria are met:
1. Impacts to fish and wildlife habitat shall be avoided to the maximum extent possible.
 2. Where feasible, installation shall be accomplished by boring beneath the scour depth of the stream or water body and the width of the channel migration zone where present.
 3. The utilities shall cross streams at an angle greater than sixty (60) degrees to the centerline of the channel or perpendicular to the channel centerline whenever boring under the channel is not feasible.
 4. Crossings shall be contained within the footprint of an existing road or utility crossing where possible.
 5. The utility installation shall not increase or decrease the natural rate, extent, or opportunity of channel migration.
- K. New public flood protection measures and expansion of existing ones may be permitted, subject to WCC Title 17, Article 4 of this chapter and a state Hydraulic Project Approval; provided that, bioengineering or soft armoring techniques shall be used where feasible. Hard bank armoring may occur only in situations where soft approaches do not provide adequate protection.
- L. Instream structures, such as, but not limited to, high flow bypasses, dams, and weirs, shall be allowed only as part of a watershed restoration project as defined pursuant to SMP 23.110.W.10 or identified in watershed planning documents prepared and adopted under RCW 90.82, the Salmonid Recovery Plan or Salmon Recovery Board Habitat Project List, and the County's Shoreline Restoration Plan and upon acquisition of any required state or federal permits. The structure shall be designed to avoid adverse effects on stream flow, water quality, or other habitat functions and values.
- M. Construction, reconstruction, repair and maintenance of docks and public or private launching ramps may be permitted subject to the following:
1. The dock or ramp is located and oriented and constructed in a manner that minimizes adverse effects on navigation; wave action, water quality, movement of

- aquatic and terrestrial life; ecological processes; eelgrass beds, shellfish beds, spawning habitat, and wetlands.
2. Docks or ramps on shorelines of the state shall comply with WCC Title 23 and state Hydraulic Project Approval requirements.
 3. Natural shoreline processes will be maintained to the maximum extent practicable. The activity will not result in increased erosion and will not alter the size or distribution of shoreline or stream substrate, or eliminate or reduce sediment supply from feeder bluffs.
 4. No adverse impact to critical fish or wildlife habitat areas or associated wetlands will occur.
 5. No alteration of juvenile fish migration corridors will occur.
 6. No net loss of intertidal or riparian habitat function will occur.
- N. On-site sewage disposal systems (OSS) may be permitted when accessory to an approved residential structure, for which it is not feasible to connect to a public sanitary sewer system and when operated and maintained in accordance with WCC 24.05.170, provided that adverse effects on water quality and slope stability are avoided.
- O. Single-family developments may be permitted to encroach into stream buffers subject to the Technical Administrator's approval provided that all of the criteria in WCC 16.16.270.A are met.
- P. All other developments may be allowed in Shellfish Protection Districts outside of actual shellfish habitats, when permitted by zoning and when the requirements of WCC 16.16.720.N are met.
- Q. Alteration or removal of beaver built structures more than two years old, provided that:
1. The applicant demonstrates that non-destructive measures, such as the use of "beaver deceivers" are not feasible.
 2. Impacts to wetland, river or stream functions are minimized and mitigation is provided.
 3. The property owner obtains a HPA from WDFW prior to initiating alteration or removal of the beaver built structure.
 4. The property owner provides a copy of the HPA to the Technical Administrator.

16.16.730 Standards – Locally Important Habitats and Species

Alterations that occur within a locally important habitat area or that may affect a locally important species as defined herein shall be subject to review on a case-by-case basis. The Technical Administrator shall have the authority to require an assessment of the effects of the alteration on species or habitats and may require mitigation to ensure that adverse effects do not occur. This standard is intended to allow for flexibility and responsiveness with regard to locally important species and habitats.

16.16.740 Standards – Habitat Conservation Area Buffers

The Technical Administrator shall have the authority to require buffers from the edges of all habitat conservation areas in accordance with the following:

- A. Buffers shall be established for activities adjacent to habitat conservation areas as necessary to protect the integrity, functions and values of the resource. Buffer widths shall reflect the sensitivity of the species or habitat present and the type and intensity of the proposed adjacent human use or activity. Buffers shall not include areas that are functionally and effectively disconnected from the habitat area by a road or other substantial developed surface.
- B. Stream Buffers. The standard buffer widths required by this article are considered to be the minimum required and presume the existence of a dense vegetation community in the buffer zone adequate to protect the stream functions and values at the time of the proposed activity. When a buffer lacks adequate vegetation to protect critical area functions, the Technical Administrator may increase the standard buffer, require buffer planting or enhancement, and/or deny a proposal for buffer reduction or buffer averaging.

The standard buffer shall be measured landward horizontally on both sides of the stream from the ordinary high water mark as identified in the field, provided that for streams with identified channel migration zones, the buffer shall extend outward horizontally from the outer edge of the channel migration zone on both sides. The required buffer shall be extended to include any adjacent regulated wetland(s), landslide hazard areas and/or erosion hazard areas and required buffers, but shall not be extended across roads or other lawfully established structures or hardened surfaces. The following standard buffer width requirements are established, provided that portions of streams that flow underground may be exempt from these buffer standards at the Technical Administrator’s discretion when it can be demonstrated that no adverse effects on aquatic species will occur:

- 1. Shoreline streams - 150 feet
- 2. Fish bearing streams - 100 feet
- 3. Non-fish bearing streams - 50 feet

- C. Buffers for Other Habitat Conservation Areas. The Technical Administrator shall determine appropriate buffer widths for other habitat conservation areas based on the best available information. Buffer widths for non-stream habitat conservation areas shall be as follows:

Habitat Conservation Area	Buffer Requirement
<p>Areas with which federally listed species have a primary association</p> <p>State Priority Habitats and areas with which Priority Species have a Primary Association</p>	<p>Buffers shall be based on recommendations provided by the Washington Department of Fish and Wildlife PHS Program; provided that local and site specific factors shall be taken into consideration and the buffer width based on the best available information concerning the species/habitat(s) in question and/or the opinions and</p>

Habitat Conservation Area	Buffer Requirement
	recommendations of a qualified professional with appropriate expertise.
Commercial and recreational shellfish areas	Buffers shall extend one hundred-fifty (150) feet landward from ordinary high water mark of the marine shore. Buffers shall not be required adjacent to Shellfish Protection Districts, but only in nearshore areas where shellfish reside.
Kelp and Eelgrass Beds	Buffers shall extend one-hundred fifty (150) feet landward from ordinary high water mark of the marine shore
Surf Smelt, Pacific Herring, and Pacific Sand Lance Spawning Areas	Buffers shall extend one-hundred fifty (150) feet landward from ordinary high water mark of the marine shore
Natural Pond and Lakes	Ponds under 20 acres - buffers shall extend 50 feet from the ordinary high water mark; Lakes 20 acres and larger - buffers shall extend 100 feet from the ordinary high water mark, provided that where vegetated wetlands are associated with the shoreline, the buffer shall be based on the wetland buffer requirements in WCC 16.16.630.
Natural Area Preserves and Natural Resource Conservation Areas	Buffers shall not be required adjacent to these areas. These areas are assumed to encompass the land required for species preservation.
Locally Important Habitat Areas	<p>The buffer for marine nearshore habitats shall extent landward 150 feet from the ordinary high water mark.</p> <p>The need for and dimensions of buffers for other locally important species or habitats shall be determined on a case-by-case basis, according to the needs of the specific species or habitat area of concern. Buffers shall not be required adjacent to the Chuckanut wildlife corridor. The Technical Administrator shall coordinate with the Washington Department of Fish and Wildlife and other state, federal or Tribal experts in these instances, and may use WDFW PHS management recommendations when available.</p>

- D. The Technical Administrator shall have the authority to reduce buffer widths on a case-by-case basis, provided that the general standards for avoidance and minimization per 16.16.260.A(1)(a) and (b) shall apply, and when the applicant demonstrates to the satisfaction of the Technical Administrator that all of the following criteria are met:

1. The buffer reduction shall not adversely affect the habitat functions and values of the adjacent habitat conservation area or other critical area.
 2. The buffer shall not be reduced to less than seventy-five (75) percent of the standard buffer as defined in WCC 16.16.740.C.
 3. The slopes adjacent to the habitat conservation area within the buffer area are stable and the gradient does not exceed thirty percent (30%).
- E. The Technical Administrator shall have the authority to average buffer widths on a case-by-case basis, provided that the general standards for avoidance and minimization per 16.16.260.A(1)(a) and (b) shall apply, and when the applicant demonstrates to the satisfaction of the Technical Administrator that all the following criteria are met:
1. The total area contained in the buffer area after averaging is no less than that which would be contained within the standard buffer and all increases in buffer dimension are parallel to the habitat conservation area.
 2. The buffer averaging does not reduce the functions or values of the habitat conservation area or riparian habitat, or the buffer averaging, in conjunction with vegetation enhancement, increases the habitat function.
 3. The buffer averaging is necessary due to site constraints caused by existing physical characteristics such as slope, soils, or vegetation.
 4. The buffer width is not reduced to less than seventy-five percent (75%) of the standard width as defined in WCC 16.16.740.C.
 5. The slopes adjacent to the habitat conservation area within the buffer area are stable and the gradient does not exceed thirty percent (30%).
 6. Buffer averaging shall not be allowed if habitat conservation area buffers are reduced pursuant to subsection D above.
- F. The Technical Administrator shall have the authority to increase the width of a habitat conservation area buffer on a case-by-case basis when there is clear evidence that such increase is necessary to achieve any of the following:
1. Comply with the requirements of a habitat management plan prepared pursuant to WCC 16.16.750.
 2. Protect fish and wildlife habitat, maintain water quality, ensure adequate flow conveyance, provide adequate recruitment for large woody debris, maintain adequate stream temperatures, or maintain in-stream conditions.
 3. Compensate for degraded vegetation communities or steep slopes adjacent to the habitat conservation area.
 4. Maintain areas for channel migration.
 5. Protect adjacent or downstream areas from erosion, landslides, or other hazards.

6. Protect streams from high intensity adjacent land uses.

16.16.750 Review and Reporting Requirements

- A. When County critical area maps or other sources of credible information indicate that a site proposed for development or alteration is more likely than not to contain habitat conservation areas or buffer, or could adversely affect a habitat area or buffer, the Technical Administrator shall require a site evaluation (field investigation) by a qualified professional or other measures to determine whether or not the species or habitat is present. If no habitat conservation areas are present, then review will be considered complete. If the site evaluation determines that the species or habitat is present, the Technical Administrator shall require a critical areas assessment report or habitat management plan (HMP), provided that no report or evaluation shall be required for developments outside of buffers within the upland portions of Shellfish Conservation Areas. The Technical Administrator shall have the authority to waive the report requirement when he/she determines that the project is a single-family development that involves less than 0.5 acre of clearing and/or vegetation removal and will not directly disturb the species, or specific areas or habitat features that comprise the habitat conservation area (nest trees, breeding sites, etc.) as indicated by a site plan or scaled drawing of the proposed development.
- B. The assessment report / HMP shall describe the characteristics of the subject property and adjacent areas. The assessment shall include determination of appropriate buffers as set forth in WCC 16.16.740. The assessment shall also include field identification and/or delineation of habitat areas, analysis of historical aerial photos, review of public records, and interviews with adjacent property owners as necessary to determine potential effects of the development action on critical areas. Assessment reports shall include the following site- and proposal-related information unless the Technical Administrator determines that any portion of these requirements is unnecessary given the scope and/or scale of the proposed development:
 1. A map drawn to scale or survey showing the following information:
 - a. Topographic, hydrologic, and vegetative features.
 - b. The location and description of wildlife and habitat features, and all critical areas on or abutting the site.
 - c. Proposed development activity.
 - d. Existing physical features of the site including buildings, fences, and other structures, roads, parking lots, utilities, water bodies, etc.
 2. An analysis of how the proposed development activities will affect the fish and wildlife habitat conservation area and/or buffer, including the area of direct disturbance; effects of storm water management; proposed alteration to surface or subsurface hydrology; natural drainage or infiltration patterns; clearing and grading impact; temporary construction impacts; effects of increased noise, light or human intrusion.
 3. Provisions to reduce or eliminate adverse impacts of the proposed development

activities including, but not limited to:

- a. Buffering and clustering of development,
 - b. Retention of native vegetation,
 - c. Access limitations,
 - d. Seasonal restrictions on construction activities in accordance with the guidelines developed by the Washington Department of Fish and Wildlife, the US Army Corps of Engineers, the Salmonid Recovery Plan and/or other agency or tribe with expertise and jurisdiction over the subject species/habitat, and
 - e. Other appropriate and proven low impact development techniques.
4. Management recommendations developed by WDFW through its PHS program.
 5. When appropriate due to the type of habitat or species potentially present or the project area conditions, the Technical Administrator may also require that the report include additional information including, but not limited to, direct observations of species use or detailed surface and subsurface hydrologic features both on and adjacent to the site. The assessment of off-site conditions shall be based on available information and shall not require accessing off-site properties.
 6. Bald eagle habitats shall be protected pursuant to the Washington State Bald Eagle Protection Rules (WAC-232-12-292), the provisions of which require a cooperative Habitat Management Plan to be developed in coordination between the WDFW and landowner whenever projects that alter habitat are proposed within a nest territory or communal roost. The County shall issue development permits only after certification from the WDFW that the development is in compliance with an approved Habitat Management Plan.
- C. All habitat management plans shall be prepared in consultation with the State Department of Fish and Wildlife and/or other federal, state, local or tribal resource agencies with jurisdiction and expertise in the subject species/habitat.
- D. At the request of the applicant, the County may gather the required information in this section for applicants seeking to develop a single-family home, provided that:
1. Availability of County staff shall be at the discretion of the Technical Administrator and subject to workload and scheduling constraints.
 2. Fees for County staff services shall be in accordance with the unified fee schedule.

16.16.760 Mitigation Standards for Habitat Conservation Areas

Activities that adversely affect habitat conservation areas and/or their buffers as determined by the Technical Administrator shall include mitigation sufficient to achieve no net loss of habitat functions and values in accordance with WCC 16.16.260 and this section.

- A. In determining the extent and type of mitigation required, the Technical Administrator may consider all of the following:
1. The ecological processes that affect and influence critical area structure and function within the watershed or sub-basin;
 2. The individual and cumulative effects of the action upon the functions of the critical area and associated watershed;
 3. Observed or predicted trends regarding the gains or losses of specific habitats or species in the watershed, in light of natural and human processes;
 4. The likely success of the proposed mitigation measures;
 5. Effects of the mitigation actions on neighboring properties; and
 6. Opportunities to implement restoration actions formally identified by an adopted Shoreline Restoration Plan, watershed planning document prepared and adopted pursuant to RCW 90.82, a Salmonid Recovery Plan or project that has been identified on the Salmon Recovery Board Habitat Project List or by the Washington Department of Fish and Wildlife as essential for fish and wildlife habitat enhancement.
- B. The following additional mitigation standards shall apply:
1. Compensatory mitigation for alterations to habitat areas shall achieve equivalent or greater biologic functions, and shall provide similar functions to those that are lost or altered.
 2. Compensatory mitigation in the form of habitat restoration or enhancement is required when a habitat is altered permanently as a result of an approved project. Alterations shall not result in net loss of habitat.
 3. Where feasible, mitigation projects shall be completed prior to activities that will disturb habitat conservation areas. In all other cases, mitigation shall be completed as quickly as possible following disturbance and prior to use or occupancy of the activity or development. Construction of mitigation projects shall be timed to reduce impacts to existing fish, wildlife and flora, provided that the Technical Administrator may adjust the timing requirements to allow grading, planting, and other activities to occur during the appropriate season(s).
 4. Compensatory mitigation shall be provided on-site or off-site in the location that will provide the greatest ecological benefit to the species and/or habitats affected and have the greatest likelihood of success. Mitigation shall occur as close to the impact site as possible, within the same sub-basin, and in a similar habitat type as the permitted alteration unless the applicant demonstrates to the satisfaction of the Technical Administrator through a watershed- or landscape-based analysis that mitigation within an alternative sub-basin of the same watershed would have greater ecological benefit.

5. All mitigation sites shall have buffers consistent with the buffer requirements of this chapter, provided that the Technical Administrator shall have the authority to approve a smaller buffer when existing site constraints (such as a road) prohibit attainment of the standard buffer. Mitigation actions shall not create buffer encumbrances on adjoining properties.
6. The Technical Administrator shall have authority to require annual monitoring of mitigation activities and submittal of annual monitoring reports in accordance with WCC 16.16.260.C to ensure and document that the goals and objectives of the mitigation are met. The frequency and duration of the monitoring shall be based on the specific needs of the project as determined by the Technical Administrator.
7. All mitigation areas shall be protected and managed to prevent degradation and ensure protection of critical area functions and values into perpetuity. Permanent protection shall be achieved through deed restriction or other protective covenant in accordance with WCC 16.16.265.
8. Mitigation projects involving instream work including, but not limited to, installation of large woody debris shall be designed to ensure there are no adverse hydraulic effects on upstream or downstream properties. The County River and Flood Division shall review any such mitigation projects for compliance with this provision.

ARTICLE 8 DEFINITIONS

“Accessory structure” means a structure that is incidental and subordinate to a primary use. Barns, garages, storage sheds, and similar structures are examples.

“Active alluvial fan” means a portion or all of a fan that has experienced channel changes, erosion, or deposition. Active fans can be identified based on determination by field geomorphic and topographic evidence, and by historical accounts.

“Actively farmed” means land that has a documented history of ongoing agricultural use and that is currently used primarily for the production of crops and/or raising or keeping livestock.

“Activity” means human activity associated with the use of land or resources.

“Adaptive management” means using scientific methods to evaluate how well regulatory and non-regulatory actions protect the critical area. An adaptive management program is a formal and deliberate scientific approach to taking action and obtaining information in the face of uncertainty. Management policy may be adapted based on a periodic review of new information.

“Adequate water supply” means a water supply that meets requirements specified in the Whatcom County Drinking Water Ordinance (WCC 24.11).

“Agricultural activities” means those activities directly pertaining to the production of crops or livestock including, but not limited to, cultivation, harvest, grazing, animal waste storage and disposal, fertilization, the operation and maintenance of farm and stock ponds or drainage ditches irrigation systems, canals, and normal maintenance, repair, or operation of existing serviceable structures, facilities, or improved areas. Activities that bring an area into agricultural use are not agricultural activities.

“Agricultural land” is land primarily devoted to the commercial production of horticultural, viticultural, floricultural, dairy, apiary, or animal products, or of berries, grain, hay, straw, turf, seed, Christmas trees not subject to the excise tax imposed by RCW 84.33.100 through 84.33.140, or livestock, and/ or lands that have been designated as capable of producing food and fiber, which have not been developed for urban density housing, business, or other uses incompatible with agricultural activity.

“Alluvial fan” means a fan shaped deposit of sediment and organic debris formed where a stream flows or has flowed out of a mountainous upland onto a level plain or valley floor because of a sudden change in sediment transport capacity (e.g. significant change in slope or confinement).

“Alluvium” means a general term for clay, silt, sand, gravel, or similar other unconsolidated detrital materials, deposited during comparatively recent geologic time by a stream or other body of running water, as a sorted or semi-sorted sediment in the bed of the stream or on its floodplain or delta.

“Alteration” means any human-induced change in an existing condition of a critical area or its buffer. Alterations include, but are not limited to grading, filling, channelizing, dredging,

clearing (vegetation), draining, construction, compaction, excavation, or any other activity that changes the character of the critical area.

"Anadromous fish" means fish species that spend most of their lifecycle in salt water, but return to freshwater to reproduce.

"Animal unit" means 1,000 pounds of livestock live weight.

"Aquifer" means a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of ground water to wells or springs (Chapter 173-160 WAC).

"Aquifer susceptibility" means the ease with which contaminants can move from the land surface to the aquifer based solely on the types of surface and subsurface materials in the area. Susceptibility usually defines the rate at which a contaminant will reach an aquifer unimpeded by chemical interactions with the vadose zone media.

"Aquifer vulnerability" is the combined effect of susceptibility to contamination and the presence of potential contaminants.

"Base flood" is a flood event having a one percent (1%) chance of being equaled or exceeded in any given year, also referred to as the 100-year flood. Designations of base flood areas on flood insurance map(s) always include the letters A (zone subject to flooding during a 100-year flood, but less so than V zones) or V (zone subject to the highest flows, wave action, and erosion during a 100-year flood).

"Bedrock" means a general term for rock, typically hard, consolidated geologic material that underlies soil or other unconsolidated, superficial material or is exposed at the surface.

"Best available science" means information from research, inventory, monitoring, surveys, modeling, synthesis, expert opinion, and assessment that is used to designate, protect, or restore critical areas. As defined by WAC 365-195-900 through 925, Best Available Science is derived from a process that includes peer-reviewed literature, standard methods, logical conclusions and reasonable inferences, quantitative analysis, and documented references to produce reliable information.

"Best management practices" means conservation practices or systems of practices and management measures that:

- (a) Control soil loss and reduce water quality degradation caused by nutrients, animal waste, toxins, and sediment;
- (b) Minimize adverse impacts to surface water and ground water flow, circulation patterns, and to the chemical, physical, and biological characteristics of waters, wetlands, and other fish and wildlife habitat;
- (c) Control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw material.

"Buffer (the buffer zone)" means the area adjacent to the outer boundaries of critical areas including wetlands; habitat conservation areas such as streams and marine shorelines; and/or landslide hazard areas that separates and protects critical areas from adverse impacts associated with adjacent land uses.

"Channel migration zone" means the area along a river or stream within which the channel can reasonably be expected to migrate over time as a result of normally occurring processes. It encompasses that area of current and historic lateral stream channel movement that is subject to erosion, bank destabilization, rapid stream incision, and/or channel shifting, as well as adjacent areas that are susceptible to channel erosion. There are three components of the channel migration zone: (1) the Historical Migration Zone (HMZ)—the collective area the channel occupied in the historical record; (2) the Avulsion Hazard Zone (AHZ)—the area not included in the HMZ that is at risk of avulsion over the timeline of the CMZ; and (3) the Erosion Hazard Area (EHA)—the area not included in the HMZ or the AHZ that is at risk of bank erosion from stream flow or mass wasting over the timeline of the CMZ. The channel migration zone may not include the area behind a lawfully constructed flood protection device. Channel migration zones shall be identified in accordance with guidelines established by the Washington State Department of Ecology.

"Clearing" means the removal of vegetation or plant cover by manual, chemical, or mechanical means. Clearing includes, but is not limited to, actions such as cutting, felling, thinning, flooding, killing, poisoning, girdling, uprooting, or burning.

"Commercial fish" means those species of fish that are classified under the Washington Department of Fisheries Fish and wildlife Food Fish Classification as commercial fish (WAC 220-12-010).

"Compensatory mitigation" means a project for the purpose of mitigating, at an equivalent or greater level, unavoidable critical area and buffer impacts that remain after all appropriate and practicable avoidance and minimization measures have been implemented. Compensatory mitigation includes, but is not limited to, wetland creation, restoration, enhancement, and preservation; stream restoration and relocation, rehabilitation; and buffer enhancement.

"Conservation" means the prudent management of rivers, streams, wetlands, wildlife and other environmental resources in order to preserve and protect them. This includes the careful utilization of natural resources in order to prevent depletion or harm to the environment.

"Conservation easement" means a legal agreement that the property owner enters into to restrict uses of the land for purposes of natural resources conservation. The easement is recorded on a property deed, runs with the land, and is legally binding on all present and future owners of the property.

"Contaminant" means any chemical, physical, biological, or radiological substance that does not occur naturally in ground water, air, or soil or that occurs at concentrations greater than those in the natural levels (Chapter 172-200 WAC).

"County" means Whatcom County, Washington.

"Critical areas" The following areas as required in this chapter shall be regarded as critical areas:

- (a) Critical Aquifer Recharge Areas
- (b) Wetlands
- (c) Geologically Hazardous Areas
- (d) Frequently Flooded Areas

(e) Fish and Wildlife Habitat Conservation Areas

“Critical area report” means a report prepared by a qualified professional or qualified consultant based on Best Available Science, and the specific methods and standards for technical study required for each applicable critical area. Geotechnical reports and hydrogeological reports are critical area reports specific to geologically hazardous areas and critical aquifer recharge areas, respectively.

“Critical area tract” means land held in private ownership and retained in an open undeveloped condition (native vegetation is preserved) in perpetuity for the protection of critical areas.

“Critical aquifer recharge area” means areas designated by WAC 365-190-080(2) that are determined to have a critical recharging effect on aquifers (i.e., maintain the quality and quantity of water) used for potable water as defined by WAC 365-190-030(2).

"Critical facilities (Essential facilities)" means buildings and other structures that are intended to remain operational in the event of extreme environmental loading from flood, wind, snow or earthquakes pursuant to the International Building Code (IBC), 2003 Edition. These include, but are not limited to:

- (a) Buildings and other structures that represent a substantial hazard to human life in the event of failure including, but not limited to:
 - (i) Buildings and other structures where more than 300 people congregate in one area;
 - (ii) Buildings and other structures with elementary school, secondary school or day care facilities with an occupant load greater than 250;
 - (iii) Buildings and other structures with an occupant load greater than 500 for colleges or adult education facilities;
 - (iv) Health care facilities with an occupant load of 50 or more resident patients but not having surgery or emergency treatment facilities;
 - (v) Jails and detention facilities;
 - (vi) Any other occupancy with an occupant load greater than 5,000;
 - (vii) Power generating stations, water treatment for potable water, waste water treatment facilities and other public utility facilities not included in subsection (b);
 - (viii) Buildings and structures not included in subsection (b) containing sufficient quantities of toxic or explosive substances to be dangerous to the public if released.
- (b) Buildings and other structures designed as essential facilities including, but not limited to:
 - (i) Hospitals and other health care facilities having surgery or emergency treatment facilities;

- (ii) Fire, rescue and police stations and emergency vehicle garages;
- (iii) Designated earthquake, hurricane or other emergency shelters;
- (iv) Designated emergency preparedness, communication, and operation centers and other facilities required for emergency response;
- (v) Structures containing highly toxic materials as defined by IBC Section 307 where the quantity of the material exceeds the maximum allowable quantities of IBC Table 307.7(2);
- (vi) Aviation control towers, air traffic control centers and emergency aircraft hangars;
- (vii) Buildings and other structures having critical national defense functions;
- (viii) Water treatment facilities required to maintain water pressure for fire suppression;
- (ix) Power-generating stations and other public utility facilities required as emergency backup facilities for structures listed above.

"Critical habitat" means habitat areas with which endangered, threatened, sensitive or monitored plant, fish, or wildlife species have a primary association (e.g., feeding, breeding, rearing of young, migrating). Such areas are identified herein with reference to lists, categories, and definitions promulgated by the Washington Department of Fish and Wildlife as identified in WAC 232-12-011 or 232-12-014; in the Priority Habitat and Species (PHS) program of the Department of Fish and Wildlife; or by rules and regulations adopted by the U.S. Fish and Wildlife Service, National Marine Fisheries Service, or other agency with jurisdiction for such designations.

"Debris flow" means a moving mass of rock fragments, soil, and mud; more than half of the particles being larger than sand size; a general term that describes a mass movement of sediment mixed with water and air that flows readily on low slopes.

"Debris torrent" means a violent and rushing mass of water, logs, boulders and other debris.

"Deepwater habitats" means permanently flooded lands lying below the deepwater boundary of wetlands. Deepwater habitats include environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium in which the dominant organisms live. The boundary between wetland and deepwater habitat in the marine and estuarine systems coincides with the elevation of the extreme low water of spring tide; permanently flooded areas are considered deepwater habitats in these systems. The boundary between wetland and deepwater habitat in the riverine and lacustrine systems lies at a depth of two meters (6.6 feet) below low water; however, if emergent vegetation, shrubs, or trees grow beyond this depth at any time, their deepwater edge is the boundary.

"Delineation" means the precise determination of wetland boundaries in the field according to the application of the specific method described in the 1997 Washington State Wetland Delineation manual and/or the, Corps of Engineers Wetlands Delineation Manual 1987 Edition, as amended.

"Development" means any activity that requires federal, state, or local approval for the use or modification of land or its resource. These activities include, but are not limited to: subdivision and short subdivisions; binding site plans; planned unit developments; variances; shoreline substantial development; clearing activity; fill and grade work; activity conditionally allowed; building or construction; revocable encroachment permits; and septic approval.

"Drainage ditch" means an artificially created watercourse constructed to drain surface or ground water. Ditches are graded (man-made), channels installed to collect and convey runoff from fields and roadways. Ditches may include irrigation ditches, waste ways, drains, outfalls, operational spillways, channels, storm water runoff facilities or other wholly artificial watercourses, except those that directly result from the modification to a natural watercourse. Ditched channels that support fish are considered to be streams.

"Emergency activities" are those activities which require immediate action within a time too short to allow full compliance with this chapter due to an unanticipated and imminent threat to public health, safety or the environment. Emergency construction does not include development of new permanent protective structures where none previously existed. All emergency construction shall be consistent with the policies of 90.58 RCW and this chapter. As a general matter, flooding or other seasonal events that can be anticipated and may occur but that are not imminent are not an emergency.

"Emergent wetland" means a wetland with at least 30 percent of the surface area covered by erect, rooted, herbaceous vegetation as the uppermost vegetative strata.

"Enhancement" means actions performed within an existing degraded critical area and/or buffer to intentionally increase or augment one or more functions or values of the existing critical area or buffer. Enhancement actions include, but are not limited to, increasing plant diversity and cover, increasing wildlife habitat and structural complexity (snags, woody debris), installing environmentally compatible erosion controls, or removing non-indigenous plant or animal species.

"Erosion" means a process whereby wind, rain, water and other natural agents mobilize, and transport, and deposit soil particles.

"Erosion hazard areas" means lands or areas underlain by soils identified by the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) as having "severe" or "very severe" erosion hazards and areas subject to impacts from lateral erosion related to moving water such as river channel migration and shoreline retreat.

"Essential public facility" means those facilities that are typically difficult to site, such as airports, state education facilities, and state or regional transportation facilities, state and local correctional facilities, solid waste handling facilities, and inpatient facilities including substance abuse facilities, mental health facilities, and group homes.

"Estuarine wetland" means the zero-gradient sector of a stream where it flows into a standing body of water together with associated natural wetlands; tidal flows reverse flow in the wetland twice daily, determining its upstream limit. It is characterized by low bank channels (distributaries) branching off the main stream to form a broad, near-level delta; bank; bed and delta materials are silt and clay, banks are stable, vegetation ranges from marsh to forest, and water is usually brackish due to daily mixing and layering of fresh and salt water.

"Exotic" means any species of plants or animals that is not indigenous to the area.

"Feasible alternative" means an action, such as development, mitigation, or restoration, that meets all of the following conditions: (a) The action can be accomplished with technologies and methods that have been used in the past in similar circumstances, or studies or tests have demonstrated in similar circumstances that such approaches are currently available and likely to achieve the intended results; (b) The action provides a reasonable likelihood of achieving its intended purpose; and (c) The action does not physically preclude achieving the project's primary intended legal use. Feasibility shall take into account both short and long-term monetary and non-monetary costs and benefits.

"Farm pond" means an open water depression created from a non-wetland site in connection with agricultural activities.

"Fen" means a mineral-rich wetland formed in peat that has a neutral to alkaline pH. Fens are wholly or partly covered with water and dominated by grass-like plants, grasses, and sedges.

"Fill material" means any solid or semi-solid material, including rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mining or other excavation activities, and materials used to create any structure or infrastructure, that when placed, changes the grade or elevation of the receiving site.

"Filling" means the act of transporting or placing by any manual or mechanical means fill material from, to, or on any soil surface, including temporary stockpiling of fill material.

"Fish and wildlife habitat conservation areas" are areas important for maintaining species in suitable habitats within their natural geographic distribution so that isolated populations are not created.

"Fish habitat" means a complex of physical, chemical, and biological conditions that provide the life supporting and reproductive needs of a species or life stage of fish. Although the habitat requirements of a species depend on its age and activity, the basic components of fish habitat in rivers, streams, ponds, lakes, estuaries, marine waters, and nearshore areas include, but are not limited to, the following:

- (a) Clean water and appropriate temperatures for spawning, rearing, and holding;
- (b) Adequate water depth and velocity for migrating, spawning, rearing, and holding, including off-channel habitat;
- (c) Abundance of bank and in-stream structures to provide hiding and resting areas and stabilize stream banks and beds;
- (d) Appropriate substrates for spawning and embryonic development. For stream and lake dwelling fishes, substrates range from sands and gravel to rooted vegetation or submerged rocks and logs. Generally, substrates must be relatively stable and free of silts or fine sand;
- (e) Presence of riparian vegetation as defined in this article. Riparian vegetation creates a transition zone, which provides shade, and food sources of aquatic and terrestrial insects for fish;

- (f) Unimpeded passage (i.e. due to suitable gradient and lack of barriers) for upstream and downstream migrating juveniles and adults.

“Flood or Flooding” mean a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland waters and/or the unusual and rapid accumulation of runoff of surface waters from any source.

“Floodplain” means the total land area adjoining a river, stream, watercourse, or lake subject to inundation by the base flood.

“Floodway” means the channel of a river or other watercourse and the adjacent land area that must be reserved in order to discharge the base flood without cumulatively increasing the surface water elevation more than one (1) foot. Also known as the "zero rise floodway."

"Forested wetland" means a wetland with at least 30 percent of the surface area covered by woody vegetation greater than 20 feet in height, excluding monotypic stands of red alder or cottonwood that average eight inches in diameter at breast height or less.

“Frequently flooded areas” means lands in the floodplain subject to a one percent (1%) or greater chance of flooding in any given year and those lands that provide important flood storage, conveyance and attenuation functions, as determined by the County in accordance with WAC 365-190-080(3). Classifications of frequently flooded areas include, at a minimum, the 100-year floodplain designations of the Federal Emergency Management Agency and the National Flood Insurance Program.

“Function and value” means the beneficial roles served by critical areas and the values people derive from these roles including, but not limited to, water quality protection and enhancement, fish and wildlife habitat, food chain support, flood storage, conveyance and attenuation, ground water recharge and discharge, erosion control, wave attenuation, protection from hazards, providing historical and archaeological resources, noise and visual screening, open space, and recreation. These beneficial roles are not listed in order of priority.

“Function assessment or Functions and values assessment” mean a set of procedures, applied by a qualified consultant, to identify the ecological functions being performed in a wetland or other critical area, usually by determining the presence of certain characteristics, and determining how well the critical area is performing those functions. Function assessments can be qualitative or quantitative and may consider social values potentially provided by the wetland or other critical area. Function assessment methods must be consistent with Best Available Science.

"Functions" means the processes or attributes provided by areas of the landscape (e.g. wetlands, rivers, streams, and riparian areas) including, but not limited to, habitat diversity and food chain support for fish and wildlife, ground water recharge and discharge, high primary productivity, low flow stream water contribution, sediment stabilization and erosion control, storm and flood water attenuation and flood peak desynchronization, and water quality enhancement through biofiltration and retention of sediments, nutrients, and toxicants. These beneficial roles are not listed in order of priority.

"Game fish" means those species of fish that are classified by the Washington Department of Wildlife as game fish (WAC 232-12-019).

"Geologically hazardous areas" means areas that, because of their susceptibility to erosion, sliding, earthquake, or other geological events, pose unacceptable risks to public health and safety and may not be suited to commercial, residential, or industrial development.

"Gradient" means a degree of inclination, or a rate of ascent or descent, of an inclined part of the earth's surface with respect to the horizontal; the steepness of a slope. It is expressed as a ratio (vertical to horizontal), a fraction (such as meters/ kilometers or feet/miles), a percentage (of horizontal distance), or an angle (in degrees).

"Grading" means any excavating or filling of the earth's surface or combination thereof.

"Ground water" means all water that exists beneath the land surface or beneath the bed of any stream, lake or reservoir, or other body of surface water within the boundaries of the state, whatever may be the geological formation or structure in which such water stands or flows, percolates or otherwise moves (Chapter 90.44 RCW).

"Ground water management area" means a specific geographic area or subarea designated pursuant to Chapter 173-100 WAC for which a ground water management program is required.

"Ground water management program" means a comprehensive program designed to protect ground water quality, to assure ground water quantity, and to provide for efficient management of water resources while recognizing existing ground water rights and meeting future needs consistent with local and state objectives, policies and authorities within a designated ground water management area or subarea and developed pursuant to Chapter 173-100 WAC.

"Growing season" means the portion of the year when soil temperatures are above biologic zero (41 degrees Fahrenheit).

"Growth Management Act" means RCW 36.70A, and 36.70B, as amended.

"Hazard tree" means any tree that is susceptible to immediate fall due to its condition (damaged, diseased, or dead) or other factors, and which because of its location is at risk of damaging permanent physical improvements to property or causing personal injury.

"Hazardous substance" means any liquid, solid, gas, or sludge, including any material, substance, product, commodity, or waste, regardless of quantity, that exhibits any of the physical, chemical or biological properties described in WAC 173-303-090 or 173-303-100.

"High intensity land use" means land use that includes the following uses or activities: commercial, urban, industrial, institutional, retail sales, residential (more than 1 unit/acre), high-intensity new agriculture (dairies, nurseries, greenhouses, raising and harvesting crops requiring annual tilling, raising and maintaining animals), high-intensity recreation (golf courses, ball fields), hobby farms.

"Hydraulic Project Approval" (HPA) means a permit issued by the State Department of Fish and Wildlife for modifications to waters of the state in accordance with Chapter 75.20 RCW.

"Hydric soil" means a soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part. The presence of hydric soil shall be

determined following the methods described in the Washington State Wetland Identification and Delineation Manual (RCW 36.70A.175).

“Hydrologic soil groups” means soils grouped according to their runoff-producing characteristics under similar storm and cover conditions. Properties that influence runoff potential are depth to seasonally high water table, intake rate and permeability after prolonged wetting, and depth to a low permeable layer. Hydrologic soil groups are normally used in equations that estimate runoff from rainfall, but can be used to estimate a rate of water transmission in soil. There are four hydrologic soil groups:

- (a) Low runoff potential and a high rate of infiltration potential;
- (b) Moderate infiltration potential and a moderate rate of runoff potential;
- (c) Slow infiltration potential and a moderate to high rate of runoff potential; and
- (d) High runoff potential and very slow infiltration and water transmission rates.

“Hydrophytic vegetation” means macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

“Hyporheic zone” means the saturated zone located beneath and adjacent to streams that contain some proportion of surface water from the surface channel. The hyporheic zone serves as a filter for nutrients, as a site for macroinvertebrate production important in fish nutrition and provides other functions related to maintaining water quality.

“Impervious surface” means a hard surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development or that causes water to run off the surface in greater quantities or at an increased rate of flow compared to natural conditions prior to development. Common impervious surfaces may include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled macadam or other surfaces which similarly impede the natural infiltration of storm water. Impervious surfaces do not include surface created through proven low impact development techniques.

“Infiltration” means the downward entry of water into the immediate surface of soil.

“In-kind compensation” means to replace critical areas with substitute areas whose characteristics and functions mirror those destroyed or degraded by a regulated activity.

“Intertidal zone” means the substratum from extreme low water of spring tides to the upper limit of spray or influence from ocean derived salts. It includes areas that are sometimes submerged and sometimes exposed to air, mud and sand flats, rocky shores, salt marshes, and some terrestrial areas where salt influences are present.

“Invasive species” means a species that is 1) non-native (or alien) to Whatcom County and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Invasive species can be plants, animals, and other organisms (e.g., microbes). Human actions are the primary means of invasive species introductions.

“Lahar” means a mudflow and debris flow originating from the slopes of a volcano.

“Lahar inundation zone” means areas that have been or potentially could be inundated by lahars or other types of debris flows, according to a map showing Volcano Hazards from Mount Baker, Washington.

"Lake" means a naturally or artificially created body of deep (generally greater than 6.6 feet) open water that persists throughout the year. A lake is larger than a pond, greater than one acre in size, equal or greater than 6.6 feet in depth, and has less than 30 percent (30%) aerial coverage by trees, shrubs, or persistent emergent vegetation. A lake is bounded by the ordinary high water mark or the extension of the elevation of the lake's ordinary high water mark with the stream where the stream enters the lake.

“Landfill” means a disposal facility or part of a facility at which solid waste is permanently placed in or on land including facilities that use solid waste as a component of fill.

"Landslide" means a general term covering a wide variety of mass movement landforms and processes involving the downslope transport, under gravitational influence of soil and rock material en masse; included are debris flows, debris avalanches, earthflows, mudflows, slumps, mudslides, rock slides, and rock falls.

“Landslide hazard areas” means areas that, due to a combination of site conditions like slope inclination and relative soil permeability are susceptible to mass wasting.

“Low intensity land use” means land use that includes the following uses or activities: forestry (cutting of trees only), low-intensity open space (such as passive recreation and natural resources preservation), unpaved trails.

"Maintenance or repair" means those usual activities required to prevent a decline, lapse or cessation from a lawfully established condition or to restore the character, scope, size, and design of a serviceable area, structure, or land use to a state comparable to its previously authorized and undamaged condition. This does not include any activities that change the character, scope, or size of the original structure, facility, utility or improved area beyond the original design.

“Major development” means any project for which a major project permit is required pursuant to WCC 20.88. For the purposes of this chapter, major development shall also mean any project associated with an existing development for which a major development permit has been required or other existing legally non-conforming development for which a major development permit would otherwise be required if developed under the current land use regulations outlined in WCC Title 20.

“Mass wasting” means downslope movement of soil and rock material by gravity. This includes soil creep, erosion, and various types of landslides, not including bed load associated with natural stream sediment transport dynamics.

"Mature forested wetland" means a wetland with an overstory dominated by mature trees having a wetland indicator status of facultative (FAC), facultative-wet (FACW), or obligate (OBL). Mature trees are considered to be at least 21 inches in diameter at breast height.

"Mean annual flow" means the average flow of a river, or stream (measured in cubic feet per second) from measurements taken throughout the year. If available, flow data for the previous 10 years should be used in determining mean annual flow.

"Mitigation" means individual actions that may include a combination of the following measures, listed in order of preference:

- (a) Avoiding an impact altogether by not taking a certain action or parts of actions;
- (b) Minimizing impacts by limiting the degree or magnitude of an action and its implementation;
- (c) Rectifying impacts by repairing, rehabilitating, or restoring the affected environment;
- (d) Reducing or eliminating an impact over time by preservation and maintenance operations during the life of the action;
- (e) Compensating for an impact by replacing or providing substitute resources or environments; and
- (f) Monitoring the mitigation and taking remedial action when necessary.

"Mitigation bank" means a site where wetlands or similar habitats are restored, created, enhanced, or in exceptional circumstances, preserved, expressly for the purpose of providing compensatory mitigation in advance of authorized impacts to aquatic resources.

"Mitigation bank instrument" means the documentation of agency and bank sponsor concurrence on the objectives and administration of the bank. The "bank instrument" describes in detail the physical and legal characteristics of the bank, including the service area, and how the bank will be established and operated.

"Mitigation bank review team" or "MBRT" mean an interagency group of federal, state, tribal and local regulatory and resource agency representatives that are invited to participate in negotiations with the bank sponsor on the terms and conditions of the bank instrument.

"Mitigation bank review team process" or "MBRT Process" mean a process in which the County and other agencies strives to reach consensus with the MBRT members on the terms, conditions, and procedural elements of the bank instrument.

"Mitigation bank sponsor" means any public or private entity responsible for establishing and, in most circumstances, operating a bank.

"Mitigation plan" means a detailed plan indicating actions necessary to mitigate adverse impacts to critical areas.

"Moderate intensity land use" means land use that includes the following uses or activities: residential (1 unit/acre or less), moderate-intensity open space (parks), moderate-intensity new agriculture (orchards and hay fields), plant nurseries, paved trails, building of logging roads.

"Monitoring" means evaluating the impacts of development proposals over time on the biological, hydrological, pedological, and geological elements of ecosystem functions and processes, and/or assessing the performance of required mitigation measures through the collection and analysis of data by various methods for the purpose of understanding and documenting changes in natural ecosystems and features compared to baseline or pre-project conditions and/or reference sites.

"Native vegetation" means plant species that are indigenous to the Whatcom County and the local area.

"Nearshore habitat" means the zone that extends seaward from the marine shoreline to a water depth of approximately 20 meters (66 feet). Nearshore habitat is rich biologically, providing important habitat for a diversity of plant and animal species.

"No net loss" means the maintenance of the aggregate total of the County's critical area functions and values as achieved through a case-by-case review of development proposals. Each project shall be evaluated based on its ability to meet the no net loss goal.

"Off-site mitigation" means to replace critical areas away from the site on which a critical area has been adversely impacted by a regulated activity.

"Ongoing agriculture" means those activities conducted on lands defined in RCW 84.34.020(2), and those activities involved in the production of crops and livestock, including but not limited to, operation and maintenance of existing farm and stock ponds or drainage ditches, irrigation systems, changes between agricultural activities, and maintenance or repair of existing serviceable structures and facilities. Activities that bring an area into agricultural use are not part of an ongoing activity. An operation ceases to be ongoing when the area on which it was conducted has been converted to a non-agricultural use, or has lain idle for more than five consecutive years unless that idle land is registered in a federal or state soils conservation program. Forest practices are not included in this definition.

"Ordinary high water mark" means the mark or line on all lakes, rivers, streams and tidal water that will be found by examining the beds and banks and ascertaining where the presence and action of waters are so common and usual and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland in respect to vegetation (RCW 90.58.030(2)(b)).

"Person" means an individual, partnership, corporation, association, organization, cooperative, public or municipal corporation, state agency or local governmental unit, however, designated, or Indian Nation or tribe.

"Planned Unit Development (PUD)" means one or a group of specified uses, such as residential, resort, commercial or industrial, to be planned and constructed as a unit. Zoning or subdivision regulations with respect to lot size, building bulk, etc., may be varied to allow design innovations and special features in exchange for additional and/or superior site amenities or community benefits.

"Pond" means an open body of water, generally equal to or greater than 6.6 feet deep, that persists throughout the year and occurs in a depression of land or expanded part of a stream and has less than 30 percent (30%) aerial coverage by trees, shrubs, or persistent emergent vegetation. Ponds are generally smaller than lakes. Farm ponds are excluded from this definition. Beaver ponds that are two-years old or less are excluded from this definition.

"Potable" means water that is suitable for drinking by the public (Chapter 246-290 WAC).

"Preservation" means actions taken to ensure the permanent protection of existing, ecologically important critical areas and/or buffers that the County has deemed worthy of long-term protection.

“Primary association” means the use of a habitat area by a listed or priority species for breeding/spawning, rearing young, resting, roosting, feeding, foraging, and/or migrating on a frequent and/or regular basis during the appropriate season(s) as well as habitats that are used less frequently/regularly but which provide for essential life cycle functions such as breeding/nesting/spawning.

“Priority habitat” means a habitat type with unique or significant value to one or more species. An area classified and mapped as priority habitat must have one or more of the following attributes: Comparatively high fish or wildlife density; comparatively high fish or wildlife species diversity; fish spawning habitat; important wildlife habitat; important fish or wildlife seasonal range; important fish or wildlife movement corridor; rearing and foraging habitat; important marine mammal haul-out; refuge; limited availability; high vulnerability to habitat alteration; unique or dependent species; or shellfish bed. A priority habitat may be described by a unique vegetation type or by a dominant plant species that is of primary importance to fish and wildlife (such as oak woodlands or eelgrass meadows). A priority habitat may also be described by a successional stage (such as, old growth and mature forests). Alternatively, a priority habitat may consist of a specific habitat element (such as a consolidated marine/estuarine shoreline, talus slopes, caves, snags) of key value to fish and wildlife. A priority habitat may contain priority and/or non-priority fish and wildlife (WAC 173-26-020(24)).

“Priority species” means wildlife species of concern due to their population status and their sensitivity to habitat alteration, as defined by the Washington Department of Fish and Wildlife.

"Project" means any proposed or existing activity regulated by Whatcom County.

"Project permit or Project permit application" mean any land use or environmental permit or approval required by Whatcom County, including, but not limited to, building permits, subdivisions, binding site plan, planned unit developments, conditional uses, shoreline substantial development permits, variance, lot consolidation relief, site plan review, permits or approvals authorized by a comprehensive plan or subarea plan.

“Qualified planning advisor” means those individuals who have technical experience and training necessary to prepare farm conservation plans for agricultural lands and who have:

- (a) completed the 2 week training course delivered by the Technical Administrator and achieved a minimum of 75% on the course exam and assignments and signed the Practice and Confidentiality Agreement; or
- (b) been certified a Technical Service Provider by the USDA Natural Resources Conservation Service (See <http://techreg.usda.gov/>) and signed the Practice and Confidentiality Agreement.

“Qualified professional or qualified consultant” mean a person with experience and training with expertise appropriate for the relevant critical area subject in accordance with WAC 365-195-905(4). A qualified professional must have obtained a B.S. or B.A. or equivalent degree in biology, soil science, engineering, environmental studies, fisheries, geology, geomorphology or related field, and related work experience and meet the following criteria:

- (a) A qualified professional for wetlands must have a degree in biology, ecology, soil science, botany, or a closely related field and a minimum of three (3) years of

professional experience in wetland identification and assessment associated with wetland ecology in the Pacific Northwest or comparable systems.

- (b) A qualified professional for habitat conservation areas must have a degree in wildlife biology, ecology, fisheries, or closely related field and a minimum of three (3) years professional experience related to the subject species/habitat type.
- (c) A qualified professional for geologically hazardous areas must be a professional engineering geologist or geotechnical engineer, licensed in the state of Washington.
- (d) A qualified professional for critical aquifer recharge areas means a Washington State licensed hydrogeologist, geologist, or engineer.

“Recharge” means the process involved in the absorption and addition of water from the unsaturated zone to ground water.

“Re-establishment” means measures taken to intentionally restore an altered or damaged natural feature or process including:

- (a) Active steps taken to restore damaged wetlands, streams, protected habitat, and/or their buffers to the functioning condition that existed prior to an unauthorized alteration;
- (b) Actions performed to re-establish structural and functional characteristics of the critical area that have been lost by alteration, past management activities, or other events; and
- (c) Restoration can include restoration of wetland functions and values on a site where wetlands previous existed, but are no longer present due to lack of water or hydric soils.

“Rehabilitation” means a type of restoration action that restores a critical area to its original form or type such as restoring a wetland to its original hydro geomorphic class.

“Resident fish” means a fish species that completes all stages of its life cycle within freshwater and frequently within a local area.

“Restoration” See “re-establishment”.

“Rills” means steep-sided channels resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery. Rill erosion tends to occur on slopes, particularly steep slopes with poor vegetative cover.

“Riparian corridor or Riparian zone” mean the area adjacent to a water body (stream, lake or marine water) that contains vegetation that influences the aquatic ecosystem, nearshore area and/or and fish and wildlife habitat by providing shade, fine or large woody material, nutrients, organic debris, sediment filtration, and terrestrial insects (prey production). Riparian areas include those portions of terrestrial ecosystems that significantly influence exchanges of energy and matter with aquatic ecosystems (i.e., zone of influence). Riparian zones provide important wildlife habitat. They provide sites for foraging, breeding and nesting; cover to escape predators or weather; and corridors that connect different parts of a watershed for dispersal and migration.

"Riparian vegetation" means vegetation that tolerates and/or requires moist conditions and periodic free flowing water thus creating a transitional zone between aquatic and terrestrial habitats which provides cover, shade and food sources for aquatic and terrestrial insects for fish species. Riparian vegetation and their root systems stabilizes stream banks, attenuates high water flows, provides wildlife habitat and travel corridors, and provides a source of limbs and other woody debris to terrestrial and aquatic ecosystems, which, in turn, stabilize stream beds.

"Scrub-shrub wetland" means a wetland with at least thirty percent (30%) of its surface area covered by woody vegetation less than twenty (20) feet in height as the uppermost strata.

"Seismic hazard areas" means areas that are subject to severe risk of damage as a result of earthquake-induced ground shaking, slope failure, settlement, or soil liquefaction.

"SEPA" is a commonly used acronym for the State Environmental Policy Act.

"Shellfish" are invertebrates of the phyla Arthropoda (class Crustacea), Mollusca (class Pelecypoda) and Echinodermata.

"Shellfish habitat conservation areas" are all public and private tidelands suitable for shellfish, as identified by the Washington Department of Health classification of commercial growing areas, and those recreational harvest areas as identified by the Washington Department of Ecology are designated as Shellfish Habitat Conservation Areas pursuant to Chapter 365-190-80 WAC. Any area that is or has been designated as a Shellfish Protection District created under RCW 90.72 is also a Shellfish Habitat Conservation Area.

"Shellfish protection district" means the Drayton Harbor Shellfish Protection District (DHSPD) (Ordinance 95-036) and the Portage Bay Shellfish Protection District (PBSPD) (Ordinance 98-069), or other area formed by the County based on the Revised Code of Washington (RCW) Chapter 90, in response to State Department of Health (DOH) closures or downgrades of a commercial shellfish growing area due to a degradation of water quality as a result of pollution. These areas include the watershed draining to the shellfish beds as part of the Shellfish Habitat Conservation Area.

"Shoreline" (Shoreline Management Act) means all of the water areas of the state, including reservoirs and their associated wetlands, together with lands underlying them, except:

- (a) Shorelines on segments of streams upstream from a point where the mean annual flow is 20 cubic feet per second or less and the wetlands associated with such upstream segments; and
- (b) Shorelines on lakes less than 20 acres in size and wetlands associated with such small lakes.

"Shorelines" are all of the water areas of the state as defined in RCW 90.58.030, including reservoirs and their associated shorelands, together with the lands underlying them except:

- (a) Shorelines of statewide significance;
- (b) Shorelines on segments of streams upstream of a point where the mean annual flow is twenty cubic feet per second (20 cfs) or less and the wetlands associated with such upstream segments; and

- (c) Shorelines on lakes less than twenty (20) acres in size and wetlands associated with such small lakes.

“Shorelines of statewide significance” means those areas defined in RCW 90.58.030(2)(e).

“Shorelines of the state” means the total of all “shorelines,” as defined in RCW 90.58.030(2)(d), and “shorelines of statewide significance” within the state, as defined in RCW 90.58.030(2)(c).

“Shorelands or Shoreland areas” mean those lands extending landward for two hundred (200) feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward two hundred (200) feet from such floodways; and all wetlands and river deltas associated with the streams, lakes and tidal waters which are subject to the provisions of Chapter 90.58 RCW.

“Single-family development” means the development of a single-family residence permanently installed and served with utilities on a lot of record.

“Site” means any parcel or combination of contiguous parcels, or right-of-way or combination of contiguous rights-of way under the applicant’s ownership or control that is the subject of a development proposal or change in use.

"Slope" means:

- (a) Gradient.
- (b) The inclined surface of any part of the earth's surface, delineated by establishing its toe and top and measured by averaging the inclination over at least 10 feet of vertical relief.

"Soil" means all unconsolidated materials above bedrock described in the Soil Conservation Service Classification System or by the Unified Soils Classification System.

"Sphagnum bog" means a type of wetland dominated by mosses that form peat. Sphagnum bogs are very acidic, nutrient poor systems, fed by precipitation rather than surface inflow, with specially adapted plant communities.

"Streams" are those areas where surface waters produce a defined channel or bed. A defined channel or bed is an area that demonstrates clear evidence of the annual passage of water and includes, but is not limited to, bedrock channels, gravel beds, sand and silt beds, and defined-channel swales. The channel or bed need not contain water year-round. This definition includes drainage ditches or other artificial water courses where natural streams existed prior to human alteration, and/or the waterway is used by anadromous or resident salmonid or other fish populations or flows directly into Shellfish Habitat Conservation Areas.

“Structure” means a permanent or temporary building or edifice of any kind, or any piece of work artificially built up or composed of parts joined together in some definite matter whether installed on, above, or below the surface of the ground or water, except for vessels.

"Technical Administrator" means the Director of the Planning & Development Services Department or staff member designated by the Director to perform the review functions required in this chapter.

"Toe" means the lowest part of a slope or cliff; the downslope end of an alluvial fan, landslide, etc.

"Top" means the top of a slope; or in this chapter it may be used as the highest point of contact above a landslide hazard area.

"Unavoidable" means adverse impacts that remain after all appropriate avoidance and minimization measures have been implemented.

"Utilities" means all lines and facilities used to distribute, collect, transmit, or control electrical power, natural gas, petroleum products, information (telecommunications), water, and sewage.

"Volcanic hazard areas" means geologically hazardous areas that are subject to pyroclastic flows, lava flows, debris avalanche, or inundation by debris flows, mudflows, or related flooding resulting from volcanic activity.

"Watershed" means a geographic region within which water drains into a particular river, stream or body of water. There are approximately 122 watersheds (e.g. Bertrand, Ten Mile, Dakota, Canyon Creek, Lake Whatcom, Lake Samish) identified in WRIA 1 and WRIA 3. These are nested within approximately 14-sub basins (e.g. North Fork Nooksack, Drayton Harbor, Sumas River, Friday Creek), which are nested within 4 basins (e.g. Nooksack River, Fraser River, Samish River, Coastal).

"Watershed improvement district" means a special district established pursuant to RCW 85.38 citation.

"Well head protection area" means the area (surface and subsurface) managed to protect ground water based public water supplies.

"Wet meadow" means palustrine emergent wetlands, typically having disturbed soils, vegetation, or hydrology.

"Wet season" means the period generally between November 1 and March 30 of most years when soils are wet and prone to instability. The specific beginning and end of the wet season can vary from year to year depending on weather conditions.

"Wetland" means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, retention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. However, wetlands include those artificial wetlands intentionally created to mitigate wetland impacts.

"Wetland buffer" means a designated area contiguous or adjacent to a wetland that is required for the continued maintenance, function, and ecological stability of the wetland.

"Wetland class" means the general appearance of the wetland based on the dominant vegetative life form or the physiography and composition of the substrate. The uppermost layer of

vegetation that possesses an aerial coverage of 30 percent (30%) or greater of the wetland constitutes a wetland class. Multiple classes can exist in a single wetland. Types of wetland classes include forest, scrub/shrub, emergent, and open water.

"Wetland delineation" means the precise determination of wetland boundaries in the field according to the application of specific methodology as described in the 1997 Washington State Wetland Delineation Manual or 1987 edition, as amended, Corps of Engineers Wetlands Delineation Manual and the mapping thereof.

"Wetland edge" means the boundary of a wetland as delineated based on the definitions contained in this chapter.

"Wetland enhancement" See " mitigation."

"Wetland mitigation bank" means a site where wetlands and buffers are restored, created, enhanced, or in exceptional circumstances, preserved expressly for the purpose of providing compensatory mitigation in advance of authorized impacts to similar resources.

"Wetland Restoration" See "mitigation" and "re-establishment".

"Windthrow" means a natural process by which trees are uprooted or sustain severe trunk damage by the wind.

"Wood waste" means solid waste consisting of wood pieces or particles generated as a by-product or waste from the manufacturing of wood products, handling and storage of raw materials and trees and stumps. This includes, but is not limited to, sawdust, chips, shavings, bark, pulp, hog fuel, and log sort yard waste, but does not include wood pieces or particles containing chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenate.

ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
AFO	Animal Feeding Operation
AHZ	Avulsion Hazard Zone
CAFO	Concentrated Animal Feeding Operations
CFR	Code of Federal Regulations
CMZ	Channel Migration Zone
CPAL	Conservation Program on Agriculture Lands
DHSPD	Drayton Harbor Shellfish Protection District
DOH	Washington Department of Health
EHA	Erosion Hazard Area
ESU	Ecologically Significant Unit
FAC	Facultative
FACW	Facultative-Wet
FIMA	Federal Insurance and Mitigation Administration
FIRM	Flood Insurance Rate Maps
Fco	Federal species of concern
FE	Federal Endangered
FT	Federal Threatened
HGM	Hydrogeomorphic
HMP	Habitat Management Plan
HMZ	Historical Migration Zone
HPA	Hydraulic Project Approval
IBC	International Building Code
LWD	Large Woody Debris
MBRT	Mitigation Bank Review Team
MTBE	Methyl Tertiary Butyl Ether
MRL	Mineral Resource Lands
NGPE	Native Growth Protection Easement
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resource Conservation Service
OBL	Obligate
OSS	On-site Sewage disposal System
PBSPD	Portage Bay Shellfish Protection District
PCE	Perchloroethylene
PHS	Priority Habitat and Species
PUD	Planned Unit Development
RCT	Recreational, Commercial or Tribal importance
RCW	Revised Code of Washington
SC	State Candidate
SE	State Endangered
SEPA	State Environmental Policy Act
SM	State Monitor
SMA	Shoreline Management Act
SMP	Shoreline Management Program
SS	State Sensitive
ST	State Threatened
TMDL	Total Maximum Daily Load

U	Unstable
UOS	Unstable Old Slides
URS	Unstable Recent Slides
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
VA	Vulnerable Aggregations
WAC	Washington Administrative Code
WCC	Whatcom County Code
WDFW	Washington Department of Fish and Wildlife
WRIA	Water Resource Inventory Area

CRITICAL AREAS ORDINANCE

APPENDICES

APPENDIX A

CONSERVATION PROGRAM ON AGRICULTURE LANDS

Purpose Statement

The well-being of farms and ranches in Whatcom County depends in part on good quality soil, water, air and other natural resources. Agricultural operations that incorporate protection of the environment, including critical areas as defined by this chapter are essential to achieving this goal.

Overview

A farm conservation plan identifies the farming or ranching activities and the practice(s) necessary to avoid their potential negative impacts (resource concerns). Practice selection depends upon the types of livestock raised and crops grown. Based upon the type and intensity of operation, some generalizations can be made as to the resource concerns and remedies that apply.

Some operations present relatively low risks to critical areas because of their benign nature, timing, frequency, or location. For these operations, the resource concerns and remedies are relatively easy to identify and implement. These are described in more detail as Low-impact Agricultural Operations Subject to Standardized Farm Conservation Plans in Section 1 below.

Where the potential negative impacts to critical areas are moderate or high, solutions are more difficult to formulate and implement. In those circumstances, a more rigorous planning process is required. In such cases, a formal written plan shall provide the desired environmental protection. These types of operations are described as Agricultural Operations Requiring Custom Farm Conservation Plans in Section 2 below.

Farm conservation plans prepared pursuant to Section 1 or Section 2 shall include all reasonable measures to maintain existing critical area functions and values.

Section I. Low-impact Agricultural Operations Subject to Standardized Farm Conservation Plans

These operations present a low potential risk to critical area degradation including ground / surface water contamination because the animals kept generate fewer nutrients than can be used by the crops grown there.

1. Criteria: To qualify as a Low Impact Operation, a farm shall not exceed one animal unit per one acre of grazable pasture. One resource for guidance is "Tips on Land & Water Management for Small Farm & Livestock Owners in Western Washington". It can be obtained at: http://www.kingcd.org/pub_sma.htm or from the Whatcom Conservation District. Other guidance may also be used provided it is consistent with the Best Available Science criteria in WAC 365-195-900 through 925.
2. Benchmark System and Resource Concerns: Keeping horses and other large animals creates potential adverse impacts to critical areas:

- a. Nutrient pollution of water. Animal waste contains nutrients (nitrogen and phosphorous). With each rain, these wastes can wash off the land and into the nearest, stream, lake or wetland. In surface water, phosphorous and nitrogen fertilize aquatic plants and weeds. As the plants and weeds proliferate and decay, the dissolved oxygen that fish need to survive is depleted. Nitrogen in the form of nitrate is easily dissolved in and carried with rainfall through our permeable soils to groundwater. Nitrate concentrations exceeding the maximum contaminate level for safe drinking water are found in many wells of Whatcom County. These can present a significant human health risk, particularly to the very old and young.
 - b. Pathogen pollution of water. Manure contains bacteria and other pathogens. These can make the water unfit for drinking without treatment or shellfish unfit for human consumption. They can also make water unsafe for human contact and recreational sports such as fishing, swimming or water skiing. Both surface and groundwater are vulnerable to this type of pollution.
 - c. Sediment pollution to surface water. Regardless of the amount of supplemental feed provided, large animals will continue grazing until all palatable vegetation is gone. On especially small lots (one or two acres), the animals that are allowed free and continuous access to vegetation quickly graze-out and trample pasture grasses and forbs. These areas are then susceptible to invasion by weeds, including noxious weeds, and brush. The resulting bare ground is subject to erosion from wind and water. Lands that lack adequate vegetation are subject to erosion, and contaminated runoff from these areas can enter waterbodies and wetlands and interfere with fish and wildlife habitat.
 - d. Degradation of riparian areas. The term “riparian” is defined in Article 8 of this chapter and includes the areas adjacent to streams, lakes, marine shorelines and other waters. A healthy riparian area is essential to protecting fish and wildlife, including salmon and shellfish. Dense riparian vegetation along the water’s edge will slow and protect against flood flows; secure food and cover for fish, birds and wildlife; and keep water cooler in summer. Uncontrolled grazing removes important riparian vegetation.
3. Standard Farm Conservation Plan Requirements: Owners of Low-impact Livestock Operations have limited options to control animal waste because their operations are small. The required farm conservation plan can be prepared by the landowner and include a simple map of the property, a standard checklist designed to protect water quality, and the following additional components:
 - a. System Siting & Design. Barns, corrals, paddocks or lots are to be sited to avoid runoff directly into critical areas. Where structures exist and cannot be relocated, corrective measures must be taken to avoid runoff of pollutants and bacteria to critical areas. Where trees and shrubs are absent along a stream, lake, pond or wetland, a strip or area of herbaceous vegetation shall be established and maintained between barns, corrals, paddocks and grazing areas pursuant to the National NRCS Conservation Practice 393 “Filter Strip.” Livestock shall be excluded from the filter strips established to

protect Critical Areas pursuant to NRCS Practice 472 “Livestock Exclusion”. Where trees and shrubs exist along a stream, lake, pond, or wetland, they shall be retained and managed to preserve the existing functions of the buffer pursuant to the NRCS Conservation Practice 391 “Riparian Forest Buffer”.

- b. **Manure Collection, Storage & Use.** Manure and soiled bedding from stalls and paddocks are to be removed and are to be placed in a storage facility protected from rainfall so that runoff does not carry pollutants and bacteria to critical areas. Manure is to be used as cropland fertilizer. The rate of manure application shall not exceed crop requirements. It is to be applied in a manner to avoid runoff of nutrients and bacteria to critical areas.
- c. **Pasture Management.** Pastures are to be established and managed pursuant to “Prescribed Grazing” (NRCS Practice 528A).
- d. **Exercise or Barn Lots.** These normally bare areas must be stabilized and managed to prevent erosion and sediment movement to critical areas. A diversion terrace shall be installed, where necessary, to hinder flow to and across the lot or paddock. Runoff from the lot must be treated via the filter strip or riparian buffer as described in 3.a. above to avoid contaminants reaching critical areas.
- e. **Existing native vegetation within critical area buffers shall be retained to the extent practicable.**

Section 2. Agricultural Operations Requiring Custom Farm Conservation Plans

These operations present a potential moderate or high risk to critical area degradation including ground or surface water contamination because the nutrients applied from manure or commercial fertilizers may exceed that which can be easily used by the crops grown there without careful planning and management. The agricultural activities are also likely to be much more intense than low-impact operations posing greater potential risks to other critical areas.

1. **Moderate-impact Operations:** Examples include farms that exceed one animal unit per one acre of grazable pasture; orchards, vineyards, small fruit field and row crops; and Drainage Improvement Districts.
2. **High-impact Operations:** Examples include dairies and animal feeding operations/concentrated animal feeding operations (AFO/CAFOs). These operations are already highly regulated by state and federal governments (See RCW 90.64 et seq.; 40 CFR 122.23 and 40 CFR Part 412).
3. **Custom Farm Conservation Plan Requirements:**
 - a. **Moderate-impact Operations:** Where potential significant impacts to critical areas are identified, through a risk assessment, then plans shall be prepared to mitigate same by:
 1. A Planning Advisor, or
 2. Through the USDA Natural Resources Conservation Service, or the

3. Whatcom Conservation District, or
4. An eligible farmer or rancher, who participates in this program by:
 - Attending a County-sponsored or approved workshop, and
 - Conducting a risk assessment of their farm or ranch, alone or with a Planning Advisor's assistance, and
 - Developing a plan to mitigate any identified risks, and
 - Having the plan approved pursuant to WCC 16.16.290.
- b. High-impact Operations: Farm conservation plans meeting the criteria of these state and federal laws fulfill the requirements of this chapter. (See US EPA Final Guidance - Managing Manure Guidance for Concentrated Animal Feeding Operations (CAFOs) at: <http://epa.gov/guide/cafo/>).
4. Plan Standards: In developing the elements that an approved farm conservation plan must contain, the Technical Administrator may authorize the use of methods and technologies other than those developed by the Natural Resources Conservation Service when such alternatives have been developed by:
 - a. A land grant college, or
 - b. A professional engineer with expertise in the area of farm conservation planning.
5. Plan Performance: Implementation of the farm conservation plan must protect existing values and functions of critical areas. Benchmark conditions are to be captured and described in the plan. This may consist of photo documentation, written reports or both.
6. Treatment of Wetlands: Wetlands shall be conserved pursuant to the provisions of Title 180 - National Food Security Act Manual (See <http://www.nrcs.usda.gov/programs/wetlands/index.html>).
7. Custom farm conservation plans need not address the application, mixing and/or loading of insecticides, fungicides, rodenticides and pesticides, provided that such activities are carried out in accordance with the Washington State Department of Agriculture and all other applicable regulations including, but not limited to: the provisions of Chapter 90.48 RCW, Clean Water Act, United States Code (USC) 136 et seq. (Federal Insecticide, fungicide, and Rodenticide Act), Chapter 15.58 RCW (Pesticide control Act), Chapter 17.21 RCW (Pesticide Application Act).

APPENDIX B
NOTIFICATION EXAMPLE

Date_____

Whatcom County Planning and Development Services
Land Use Division Northwest Annex, Suite B
5280 Northwest Drive
Bellingham, WA 98226-9097

Notice of Work to be performed in or near a Critical Area - In compliance of the Whatcom County Code 16.16.235. This Notification should be submitted to the Whatcom County Planning and Development Services at least 10 working days before start .

Contractor_____ Land Owner_____ Other_____ Type of Utility_____

Contact Name_____ Phone_____

Address_____ Cell_____

Name of Property owner_____ Phone_____

Property Address and /or Tax Parcel Number_____

Proposed start date_____ Proposed finish date_____

Type of affected Critical Area_____

List equipment, specific work and / or activity to be conducted (if more space is needed attach additional information sheets)

I / We understand this work and / or activity may have adverse effects on the Critical Area, and acknowledge that special care must be taken to reduce or eliminate adverse effects. Disturbed critical areas shall be restored as near as possible to the previous condition.

Description of Restoration_____

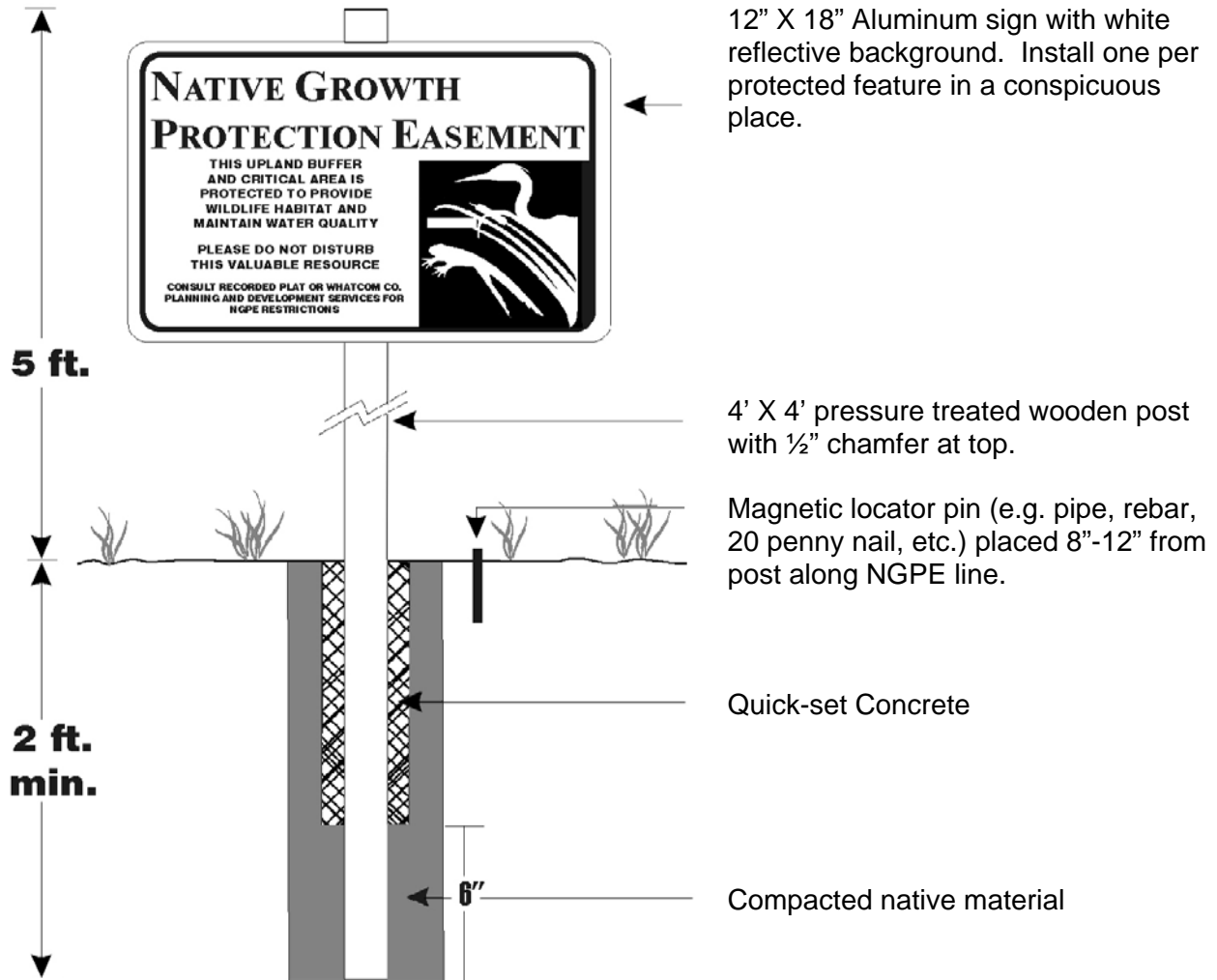
I / We the undersigned acknowledge and except the responsibility for the progress and completion of this project. Any unforeseen problems or plan changes will immediately be brought to the attention of the County Technical Administrator.

Signed_____ Date_____ Signed_____ Date_____

APPENDIX C

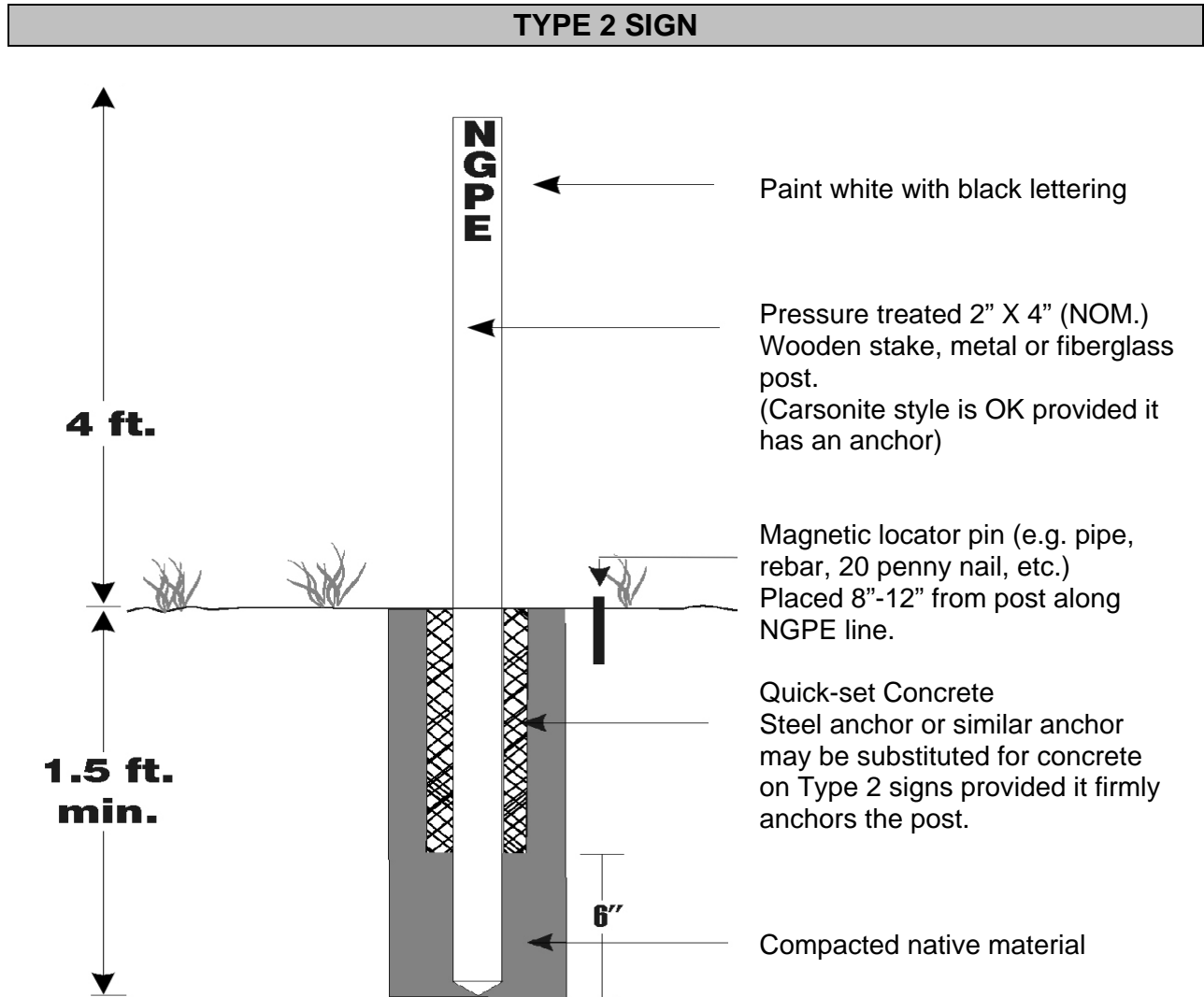
Native Growth Protection Easement
Sign Installation Guidelines

TYPE 1 SIGN



NOTES:

- 1) NGPE signs shall be placed no greater than 200 feet apart around the perimeter of the NGPE. Minimum placement shall include one Type 1 sign per wetland, and at least one Type 1 sign shall be placed in any lot that borders the NGPE unless otherwise approved by the Technical Administrator.
- 2) Sign placement shall be subject to the approval of Whatcom County. Alternative sign designs may be submitted to Whatcom County for approval.
- 3) All signs must be secure and permanent. Type 2 signs may be used in conjunction with Type 1 signs at the discretion of the Whatcom County Technical Administrator.



NOTES:

- 1) NGPE signs shall be placed no greater than 200 feet apart around the perimeter of the Native Growth Protection Easement. Minimum placement shall include one Type 1 sign per wetland, and at least one Type 1 sign shall be placed in any lot that borders the Native Growth Protection Easement unless otherwise approved by the County Critical Areas Specialist.
- 2) Sign placement shall be subject to the approval of Whatcom County. Alternative sign designs may be submitted to Whatcom County for approval.

APPENDIX D

SPECIAL STATUS FISH AND WILDLIFE SPECIES PROTECTED PURSUANT TO ARTICLE 7

Table D-1. Listed, Sensitive, and Candidate Species Known or Suspected to Occur in Whatcom County. For special status fish, please see Table D-3.

Species	Status ¹	Habitat Requirements and Distribution
Bald eagle	FT, ST	Numerous nest territories and foraging areas in major drainages and along marine shorelines of western Washington. ^{2a}
Brandt's cormorant	none, SC	Winter resident seabird of inland marine waters. Breeds on outer coast. ^{2b}
Brown pelican	FE, SE	Occasional summer sighting in marine waters. ^{2b}
Cascades frog	Fco, SM	Wetlands and small streams in between 2,000 ft and 6,2000 ft elevation in Wash. & Ore. Whatcom County population is disjunct from populations to south. ^{2c}
Columbia spotted frog	Fco, SC	Aquatic habitat, especially emergent vegetation in wetlands, ponds, and streams in the Cascade Mountains and in eastern Washington. ^{2o}
Common loon	none, SS	Nests on secluded shorelines of lakes larger than 30 acres; winters on lakes and marine waters. ^{2e} Known to occur at Lummi Bay and Lummi Flats.
Common murre	none, SC	Winter resident seabird of inland marine waters. Breeds on outer coast. ^{2p}
Fisher	Fco, SE	Very rare forest carnivore closely associated with late-successional coniferous and mixed forests of Olympic and North Cascade Mtns. ^{2a}
Golden eagle	none, SC	Uncommon western Washington raptor associated with open country. Nests on cliffs or large trees. ^{2a}
Gray whale	none, SS	Migratory marine mammal found in coastal waters in spring and summer. Often forages on or near bottom, ingesting sediment. ^{2g}
Gray wolf	FT, SE	Rare carnivore of forested and open habitat requiring adequate ungulate prey. Occasional recent records from North Cascades National Park. ^{2h}
Grizzly bear	FT, SE	Rare omnivore of wilderness areas. Occasional recent records from North Cascades National Park. ^{2h}
Killer whale (orca)	none, SE	Resident marine mammal of coastal waters, including Strait of Georgia. Salmon principal prey in Puget Sound. ^{2b}
Marbled murrelet	FT, ST	Uncommon seabird that nests in late-successional conifer forests within 50 miles of marine shoreline. Winters in nearshore marine waters. ^{2a}
Northern Abalone	none, SC	Shellfish found in subtidal rock reefs, low abundance, harvest closed. ²ⁿ
Northern goshawk	Fco, SC	Raptor that nests in relatively dense mature conifer and mixed forests. Sensitive to clear-cut timber harvest in nest and foraging stands. ^{2e}
Northern spotted owl	FT, SE	Resident in coniferous forests below 5,000 feet elevation. Closely associated with late-successional forests. ²ⁱ
Olympia oyster	none, SC	Shellfish found in intertidal gravel, locally extirpated in Whatcom Co., restoration effort in progress. ²ⁿ

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Species	Status ¹	Habitat Requirements and Distribution
Pacific harbor porpoise	none, SC	Relatively shy marine mammal of inland marine waters. ^{2b}
Peregrine falcon	Fco, SS	Year-round resident; nests in cliffs (> 150 ft in height); and feeds on birds, especially shorebirds and waterfowl. ^{2e} Occurrences at Nooksack Delta and Portage Bay.
Pileated woodpecker	none, SC	Large resident woodpecker of mature forests requiring trees > 17-inch diameter for nesting and roosting. Important primary excavator providing cavities for a number of species. ^{2e}
Purple martin	none, SC	A migratory, cavity-nesting songbird that nests over or near water. Will use artificial nest boxes. ^{2e}
Red legged frog	Fco, none	Found from sea level to 2,800 ft elevation in western Washington. Breeds in freshwater wetlands and slow-moving streams. ^{2c}
Sandhill crane	none, SE	Nests, and roosts in relatively open, large wet meadows and emergent wetlands. Highly wary and sensitive to disturbance. Will forage in upland meadows, pastures, and agricultural fields. Seen in Washington primarily during migration; a few nesting pairs in eastern Washington. ^{2e}
Steller (Northern) Sea lion	FT, ST	A sea lion that breeds in the northern Pacific and winters as far south as California. Seen on Washington's inland waters occasionally in winter. ^{2e, 2k}
Tailed frog	Fco, SM	Stream-dwelling frog of cold, rock substrate streams up to 5,250 ft elevation. ^{2c}
Townsend's big-eared bat	Fco, SC	A year-round resident that inhabits caves and abandoned mines and buildings. Extremely sensitive to human disturbance. ^{2j} Recent records from Chuckanut Mtn. ^{2l}
Vaux's swift	none, SC	A summer resident and breeder of western Washington closely associated with late-successional conifer forests. Requires hollow, large-diameter snags for nesting and roosting. ^{2e}
Western grebe	none, SC	A winter resident on inland waters, especially Samish and Bellingham Bays. ^{2b}
Western pond turtle	Fco, SE	Occur in streams, ponds, lakes, and permanent and ephemeral wetlands. In Washington, pond turtles use wetlands that have open uplands and overwinter in mud bottoms of lakes or ponds or in upland habitats adjacent to water bodies. ^{2d}
Western toad	Fco, SC	Found near emergent wetlands and small lakes from 0 to 6,530 ft elevation. ^{2c}
Willow flycatcher	Fco, none	A neotropical migrant that breeds in forested or shrub riparian habitat or forests. ^{2g}
Wolverine	Fco, SC	A wide-ranging scavenger that requires large tracts of remote boreal or montane habitat. Rare in Washington, but recent Whatcom County records. ^{2m}

¹ FE = federal endangered, FT = federal threatened, Fco = federal species of concern; SE = state endangered, ST = state threatened, SC = state candidate, SS = state sensitive, SM = state monitor (WDFW 2004a).

² Sources: ^a Rodrick and Milner 1991; ^b Angell and Balcomb 1982; ^c Leonard et al. 1993; ^d Hays et al. 1999; ^e Larsen et al. 2004; ^f PacificBio 2004; ^g Smith et al. 1997; ^h National Park Service 2004; ⁱ NPWRC 2004; ^j King County 2003; ^k AMFSC 2004; ^l WCPDS 2004; ^m Banci 1994; ⁿ Penttila 2004; ^o Nordstrom and Milner 1997; ^p Cassidy 2003.

Table D-2. Priority Species Known or Suspected to Occur in Whatcom County.¹ For Priority Fish See Table D-3.

Species/Sites	Criteria ²
Band-tailed pigeon – breeding areas, regular concentrations, occupied mineral springs	RCT
Bats – roosting concentrations of big brown bat, Myotis bats, pallid bat	VA
Blue grouse – breeding areas, regular concentrations	RCT
Brant – regular large concentrations	VA, RCT
California sea lion – haulout areas	VA
Cavity-nesting ducks (wood duck, Barrow's goldeneye, common goldeneye, bufflehead, hooded merganser) – breeding areas	RCT
Columbian black-tailed deer – regular large concentrations migration corridors	RCT
Cormorants and alcids – breeding concentrations	VA
Dall's porpoise – regular concentrations	VA
Dungeness crab – breeding areas, regular concentrations	VA, RCT
Geoduck – regular concentrations	VA, RCT
Great blue heron – breeding areas	VA
Harbor seal – haulout areas	
Harlequin duck – breeding areas, regular marine concentrations	VA, RCT
Manila clam – regular concentrations	VA, RCT
Marten –regular occurrences	RCT
Mink –regular occurrences	RCT
Moose – regular concentrations	RCT
Mountain goat – breeding areas, regular concentrations	RCT
Native littleneck clam	VA, RCT
Nonbreeding concentrations of Barrow's goldeneye, common goldeneye, bufflehead	VA, RCT
Nonbreeding concentrations of loons, grebes, cormorants, alcids	VA
Nonbreeding concentrations of plovers, sandpipers, phalaropes	VA
Pacific oyster – regular concentrations	VA, RCT
Pandalid shrimps – regular concentrations	VA, RCT
Red urchin – regular concentrations	RCT
Roosevelt elk – regular concentrations, calving areas, migration corridors	RCT
Snow geese – regular concentrations	VA, RCT
Trumpeter and tundra swans – regular concentrations	VA, RCT
Waterfowl concentrations (other than Canada geese in urban areas) – significant breeding areas and regular large wintering concentrations	VA, RCT

¹ VA = vulnerable aggregations, RCT = recreational, commercial, or tribal importance vulnerable to habitat loss or degradation (WDFW 1999b).

² Sources: Penttila 2004; Leonard et al. 1993; ^d Larsen et al. 2004; ^e PacificBio 2004; ^f Smith et al. 1997; ^g National Park Service 2004; ^h NPWRC 2004; ⁱ King County 2003; ^j AMFSC 2004; ^k WCPDS 2004; ^l Banci 1994; ^m Penttila 2004.

Table D-3. Habitat Associations and distribution of priority and listed fish species in Whatcom County (Primary sources: Smith 2002, WDFW et al. 1994, WDFW 1998, WDFW 2000, Bargmann 1998, Close et al. 1995, Anchor 2003)

Species	Federal and State Status ¹	General Location/Distribution
<p>Chinook salmon (Puget Sound ESU) <i>Oncorhynchus tshawytscha</i></p>	<p>FT, SC, Priority Species</p>	<p><i>Habitat:</i> Juveniles and adults require cold, well-oxygenated water. Spawning generally occurs in riffle areas with clean gravel and cobble substrates. Juveniles use pool habitat and instream cover such as LWD, spaces among cobbles, and undercut banks as resting areas and/or for refuge from predators. Cobble substrate and off-channel habitats such as secondary channels, backwaters, or ponds provide important refuge from flows for overwintering juveniles. After river entry, adults on spawning migration use resting pools, which provide refuge from river currents and high water temperatures that are often encountered in the summer and early autumn. Nearshore marine areas are important for feeding and refuge for juveniles after entering the ocean.</p> <p><i>Distribution:</i> Whatcom County supports both fall and spring Chinook salmon stocks. Late run (fall) Chinook spawn in portions of the mainstem, North Fork, Middle Fork, and South Fork Nooksack Rivers, and in tributaries that include Anderson, Bertrand, Fishtrap, Hutchinson, Smith, and Tenmile Creeks. Fall Chinook salmon have also been documented in the Sumas River, and in Dakota, Squalicum, and Whatcom Creeks. Two spring Chinook runs are found in Whatcom County. One stock primarily spawns in the North Fork Nooksack between RM 45 and RM 64 and in the lower Middle Fork Nooksack to a lesser extent. The other spring Chinook stock spawns in the South Fork Nooksack River and some larger tributaries such as Hutchinson, Skookum, Deer, and Plumbago Creeks.</p> <p><i>When habitats are occupied:</i> Spring Chinook adults migrate and are in streams from February to October and spawn from July to October. Fall Chinook adults migrate and are in streams from June to November and spawn from September to December. Juveniles of both stocks can be found rearing in streams year-round.</p>
<p>Coho salmon <i>Oncorhynchus kisutch</i></p>	<p>Priority Species</p>	<p><i>Habitat:</i> Similar general habitat associations as Chinook salmon (see above). Juveniles use pool habitat and instream cover such as LWD, spaces among cobbles, and undercut banks as resting areas and/or refuge. Juvenile Coho salmon overwinter in freshwater so overwinter habitat such as deep pools and off-channel habitats are of particular importance for survival, especially in coastal streams subject to high fall and winter flows.</p> <p><i>Distribution:</i> Coho salmon occur throughout all three forks of the Nooksack watershed and associated tributaries, and in many smaller independent drainages including California, Chuckanut, Colony, Dakota, Oyster, Padden, Silver, Squalicum, Terrell, and Whatcom Creeks.</p> <p><i>When habitats are occupied:</i> Coho salmon adults migrate and are in streams from July to as late as February, and spawn from October to as late as February. Juveniles can be found rearing in streams year-round.</p>
<p>Chum salmon <i>Oncorhynchus keta</i></p>	<p>Priority Species</p>	<p><i>Habitat:</i> Chum salmon rear in freshwater for only a few days to weeks before migrating downstream to saltwater, therefore juveniles have limited habitat needs in freshwater. Migrating spawning adults require cold well-oxygenated water, resting pools, and clean gravel spawning substrate. Chum salmon also often spawn in shallower, slower-running streams and side channels in low gradient lower reaches of rivers.</p> <p><i>Distribution:</i> Two stocks of chum salmon occur in the Nooksack River Basin. One spawns in the South Fork and mainstem Nooksack Rivers and tributaries, while the other spawns in the North Fork Nooksack River and below the diversion dam on the Middle Fork Nooksack River. Other populations are found in smaller</p>

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Species	Federal and State Status ¹	General Location/Distribution
		<p>independent watersheds such as the Chilliwack, Lummi, and Sumas Rives, and in Chuckanut, Colony, Oyster, Padden, Squalicum, and Whatcom Creeks.</p> <p><i>When habitats are occupied:</i> Chum salmon adults migrate and are in streams from August to February, and spawn from October to February. Fry can be found in streams from February to July, but fry migrate seaward shortly after hatching and there is no juvenile rearing in freshwater.</p>
<p>Pink salmon <i>Oncorhynchus gorbuscha</i></p>	<p>Priority Species</p>	<p><i>Habitat:</i> Similar early life history and freshwater habitat requirements as for chum salmon (see above).</p> <p><i>Distribution:</i> Two stocks of odd-year pink salmon identified in the Nooksack basin as well as small numbers of even-year pink salmon. One stock is found in the mainstem and tributaries of the Middle Fork (up to the diversion dam) and the North Fork up to Nooksack Falls (RM 65). The other stock is found in the South Fork Nooksack and spawn up to RM 25, and also in some tributaries including Deer, Cavanaugh, Hutchinson, Plumbago, and Skookum Creeks.</p> <p><i>When habitats are occupied:</i> Pink salmon adults migrate and are in streams from June to October, and spawn from August to October. Fry can be found in streams from December to June, but fry migrate seaward shortly after hatching and there is no juvenile rearing in freshwater.</p>
<p>Sockeye salmon/ Kokanee <i>Oncorhynchus nerka</i></p>	<p>Priority Species</p>	<p><i>Habitat:</i> Similar general instream habitat requirements for migration and spawning as other salmonid species. Sockeye salmon are unique in that juveniles rear in freshwater lakes for up to a year prior to migrating to the ocean. Kokanee rear and reproduce in freshwater lakes.</p> <p><i>Distribution:</i> Small numbers of sockeye salmon have been documented in the North and South Fork Nooksack Rivers and occasionally recorded in the lower reaches of the Middle Fork. A native population of kokanee reproduces in the Lake Whatcom watershed. A hatchery at the south end of the lake produces native kokanee brood stock for lakes around the world.</p> <p><i>When habitats are occupied:</i> Sockeye salmon adults migrate and are in streams from April to November, and spawn from August to November. Fry and juvenile rearing occurs year-round in freshwater lakes.</p>
<p>Bull trout <i>Salvelinus confluentus</i></p>	<p>FT, Priority Species</p>	<p><i>Habitat:</i> Similar general instream habitat requirements as other salmonids except that bull trout require much colder water temperatures than other salmonid species, and require relatively pristine habitats. Migratory forms of bull trout inhabit lower river reaches and nearshore marine habitats for migration, rearing, and feeding.</p> <p><i>Distribution:</i> Because bull trout require very cold water temperatures for certain life-history stages, the distribution of bull trout is generally restricted to upper reaches of sub-basins. Bull trout have been found in the North Fork sub-basin up to RM 65, and in Boulder, Canyon, Cornell, Glacier, Kenney Racehorse, Thompson, and Wells Creeks. In the Middle Fork Nooksack River, bull trout are found upstream of the diversion dam, and are either present or presumed to be present in Canyon Lake, Clearwater, Green, Rankin, Ridley, Sisters, and Warm Creeks. In the South Fork Nooksack sub-basin, bull trout are known to spawn in the mainstem of the South Fork and in Bells, Howard, and Wanlick Creeks. Bull trout/dolly varden are also known to spawn in the Chilliwack River system outside of the Nooksack system. However, because portions of bull trout populations have an anadromous life history strategy and may migrate upstream and downstream for foraging, spawning, and dispersal, all tributaries of the Nooksack and Fraser River watersheds are considered potentially inhabited by bull trout unless data indicates that water quality (primarily water temperature) is impaired to an extent that resident or migratory life-stages of bull trout cannot be supported. In general though, the larger lower reaches of main tributaries and the</p>

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Species	Federal and State Status ¹	General Location/Distribution
		<p>mainstem Nooksack River are primarily used as migratory corridors for bull trout.</p> <p><i>When habitats are occupied:</i> Though portions of some populations are anadromous, this behavior is not obligatory and bull trout adults and juveniles may occur in freshwater year-round.</p>
<p>Rainbow Trout/steelhead <i>Oncorhynchus mykiss</i></p>	<p>SC, Priority Species</p>	<p><i>Habitat:</i> Similar general instream habitat requirements as other salmonids. Steelhead have an extended freshwater juvenile as with Chinook and Coho salmon, but also require habitat for feeding and resting during an extended adult freshwater phase.</p> <p><i>Distribution:</i> Three winter-run and one summer-run stock are found in Whatcom County. These stocks include the Mainstem/North Fork stock, the Middle Fork stock, and the South Fork stock. A summer-run stock spawns in the upper South Fork Nooksack River. Winter steelhead also occur in Chuckanut, Dakota, Padden, Squalicum, Terrell, and Whatcom Creeks, and in the Sumas River. In addition, native resident rainbow trout are found in the upper North Fork and Middle Fork Nooksack River sub-basins as well as some South Fork Nooksack tributaries.</p> <p><i>When habitats are occupied:</i> Resident rainbow trout are found in freshwaters year-round. Summer steelhead adults are potentially found in streams year-round, but spawning occurs from February to April, with surviving adults outmigrating to the ocean shortly thereafter. Winter steelhead are found in streams from October to July, and spawning may occur from December to July. Juveniles of both life-history forms rear in freshwaters year-round prior to outmigrating to the ocean.</p>
<p>Coastal Cutthroat Trout <i>Oncorhynchus clarki</i></p>	<p>Priority Species</p>	<p><i>Habitat:</i> Cutthroat trout have similar general requirements as all salmonids and display varying degrees of migratory behavior, often moving out to nearshore marine waters and estuaries to feed in the summer and migrating freshwater streams to overwinter prior to spawning in the spring.</p> <p><i>Distribution:</i> One stock of coastal cutthroat trout is widely found throughout Whatcom County streams upstream and downstream of most migration barriers.</p> <p><i>When habitats are occupied:</i> The life-history of coastal cutthroats is highly variable. Portions of populations are anadromous, but this behavior is not obligatory and coastal cutthroat trout adults and juveniles occur in freshwaters year-round.</p>
<p>River Lamprey <i>Lampetra ayresi</i></p>	<p>SC</p>	<p><i>Habitat:</i> River lamprey are anadromous and require clean gravel substrate in streams for spawning and egg incubation. After hatching, lamprey burrow in silt and mud, often in off-channel areas, where they typically remain for a period of years. During this stage, lamprey require relatively stable habitats (Close et al 1995).</p> <p><i>Distribution:</i> Found in coastal streams from northern California to southeastern Alaska, but little information available regarding the population status of river lamprey in Washington. <i>When habitats are occupied:</i> River lamprey migrate up small freshwater streams in the fall and spawn in the winter and spring. However, the ammocoete (juvenile) stage lasts several years so river lamprey would be expected to occur year-round in streams where they are found.</p>
<p>Pacific Herring <i>Clupea pallasii</i></p>	<p>SC</p>	<p><i>Habitat:</i> Most spawning occurs in shallow sub-tidal zones from 0 to -10 ft in tidal elevation. Eggs are deposited on vegetation or other shallow water substrate.</p> <p><i>Distribution:</i> Herring are abundant throughout the northeast Pacific Ocean. Significant spawning concentrations are found in the Cherry Point, and Samish-Portage Bay areas. Puget Sound stocks spend their first year in Puget Sound. Some stocks remain entirely in Puget Sound while others migrate to other coastal</p>

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Species	Federal and State Status ¹	General Location/Distribution
		<p>areas of Washington and southern British Columbia (Bargmann 1998).</p> <p><i>When habitats are occupied:</i> Pacific herring stocks spawn from late January through early April. A notable exception is the Cherry Point stock (the largest in the state), which spawns from early April through early June.</p>
<p>Pacific sand lance <i>Ammodytes hexapterus</i></p>	<p>Priority Species</p>	<p><i>Habitat:</i> Pacific sand lance deposit their eggs in sand-gravel substrates between the mean high tide line and about +5 ft in tidal elevation. Eggs incubate in beach substrate for about one month before emerging. Larvae are a common component of the nearshore plankton. Incubating sand lance eggs occur in the same substrate with the eggs of surf smelt spawning populations, both species using the same stretches of beach for spawning at the same times of year.</p> <p><i>Distribution:</i> The Pacific sand lance is found from southern California around the north Pacific Ocean. It is common in nearshore marine waters throughout Washington state. Spawning areas are scattered along nearshore areas in Whatcom County (Bargmann 1998).</p> <p><i>When habitats are occupied:</i> Sand lance inhabit marine near-shore areas year-round, with spawning in intertidal areas occurring annually from November 1 through about February 15.</p>
<p>Surf smelt <i>Hypomesus pretiosus</i></p>	<p>Priority Species</p>	<p><i>Habitat:</i> Similar spawning and nearshore habitat requirements as the Pacific sand lance. Surf smelt have an entirely marine/estuarine life history (Bargmann 1998).</p> <p><i>Distribution:</i> The surf smelt occurs from southern California to central Alaska and are widespread in Washington. In Whatcom County, surf smelt are found in similar areas as Pacific sand lance.</p> <p><i>When habitats are occupied:</i> Surf smelt inhabit marine near-shore areas year-round, and spawning may occur year-round.</p>
<p>Longfin smelt <i>Spirinchus thaleichthys</i></p>	<p>Priority Species</p>	<p><i>Habitat:</i> Longfin smelt are anadromous and spawn in freshwater streams. Spawning substrate is sand and gravel similar to that used by surf smelt in nearshore areas.</p> <p><i>Distribution:</i> Spawning populations occur locally throughout western Washington, but the species is poorly understood or studied. Spawning is known to occur in the lower Nooksack River, but actual spawning sites have not been identified (Bargmann 1998).</p> <p><i>When habitats are occupied:</i> The longfin smelt spawning season in the lower reaches of the Nooksack River is thought to only occur from November until as late as April.</p>
<p>Numerous Rockfish species</p>	<p><i>Sebastes</i> spp.</p>	<p><i>Habitat, Distribution, and When habitats are occupied:</i> Rockfish and other groundfish species can be found in marine nearshore and offshore areas year-round. Estuaries often attract early life phases of groundfish species.</p>

¹FT = Federally Threatened, SC = State Candidate, SS = State Sensitive. Note: Candidate species are not required to be included in the definition of fish and wildlife habitat conservation areas (WAC 366-190.080)

APPENDIX E

**Locally Important Habitat Designations –
Marine Shorelines & Chuckanut Wildlife Corridor**