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Critical Areas Designation and Protection

SECTION 1: GENERAL PROVISIONS

Section 1.1 Purpose

A. It is not the intent of this article to deny a reasonable use of public or private property, but to assure that land development occurs in a manner that will protect critical areas: wetlands, geologically hazardous areas, and fish and wildlife habitat conservation areas.

Section 1.2 Compliance with Critical Areas Protection

A. All public and private land uses in the City of Hoquiam shall comply with the requirements of this article as a condition to any project permit application granted under Titles 9, 10, or 11 of the Hoquiam City Code.

Section 1.3 Exempt Activities in Critical Areas

A. The following uses or activities within a critical area or critical area buffer are exempt from the requirements of this Article to the extent that they are not prohibited by other state or federal laws and do not degrade the critical area:

1. Conservation, enhancement, restoration, or preservation measures or projects;

2. Low intensity, passive recreational uses;

3. Short-term scientific studies and educational uses;

4. Repair and maintenance of existing public roads, bridges and sewer, water, and storm water facilities;

5. Walkways without structures;

6. Public parks;

7. Site investigation work necessary for land use applications; and,

8. Class 1 through 3 forest practices governed by RCW 76.09.

Section 1.4 Emergency Work in Critical Areas

The Mayor may authorize emergency work in critical areas without a permit if that official determines an imminent threat to public health or safety will occur before completion of normal permit procedures. Emergency work shall be limited to abating the emergency only and restoration of the critical area, if possible, shall follow the emergency.

Section 1.5 Technical Assessments

A. Applications for any project permit approval or threshold decision in Titles 9, 10, or 11 of the Hoquiam City Code shall indicate whether any critical area is located on or within 300 feet of the site. The Administrator or designated representative shall visit the site, and in conjunction with a review of the Comprehensive Land Use Plan, information provided by the applicant, and any other suitable information, make a determination as to whether or not sufficient information is available to evaluate the proposal. If it is determined that the information presented is not sufficient, the Administrator shall notify the applicant to provide additional assessments before the issuance of a Determination of Completeness as provided under Titles 9 and 10 of the Hoquiam City Code or a Threshold Decision as provided under Chapter 11.10 of the Hoquiam City Code.

B. It shall be the responsibility of the applicant to provide the City with appropriate technical assessments and reports prepared by a qualified expert, if necessary, to fulfill the requirements of an application for a project permit review or threshold decision under Titles 9, 10, or 11 of the Hoquiam City Code or any other city, state or federal laws. The applicant shall pay all expenses associated

with the preparation of any technical assessment required by the city. Technical assessments shall use the best science available in accordance with RCW 36.70A.172.

Section 1.6 Mitigation

A. Development activities affecting the function and value of a critical area may require mitigation. Before the city may approve such development activity, the applicant shall demonstrate through a technical assessment the inability to avoid impacts to the critical area and that the action minimizes those impacts to the greatest extent practicable. The technical assessment shall evaluate the development activity as to whether it is possible to:

1. Avoid the impact altogether by not taking a certain action or parts of an action;

2. Minimize impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;

3. Rectify the impact by repairing, rehabilitating, or restoring the affected environment;

4. Reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action;

5. Compensate for the impact by replacing, enhancing, or providing substitute resources or environments; and/or

6. Monitor the impact and take appropriate corrective measures.

Section 1.7 Sureties for Mitigation Improvements

A. The City may require the applicant to submit a surety for the construction, maintenance, and/or monitoring of any mitigation measures required under this chapter for a period not to exceed five (5) years from the date of substantial completion of work. The city may release the surety earlier than assigned if a technical assessment prepared by a qualified expert affirms that the mitigation measure is functioning in accordance with its design.

B. The value of a construction surety shall be not less than one-hundred and twenty-five percent (125%) of the contract cost for the mitigation improvement as estimated by the City Engineer. The value of a maintenance surety shall be not less than fifteen percent (15%) of the total value of the mitigation improvement as estimated by the City Engineer. The surety shall meet the approval of the City Attorney.

Section 1.8 Responsibilities for Improvements

The property owner, or his or her successors, shall be responsible for the monitoring and maintenance of any mitigation measure required under this Article.

Section 1.9 Monitoring

The city may require annual monitoring reports from the property owner or his/her designated representative pertaining to the performance of any improvements required under this Article.

Section 1.10 Reasonable Use Exceptions

A. The intent of protecting critical areas and its application within the City of Hoquiam is not to deny all reasonable use of private property. If an applicant demonstrates to the satisfaction of the hearing examiner that strict application of these standards would deny all reasonable use of a property, development may be permitted subject to appropriate conditions.

B. Any property owner requesting relief from the provision of this chapter may make application to the hearing examiner for a reasonable use exception.

C. The applicant requesting relief from the strict application of this chapter shall demonstrate to the hearing examiner that the following five conditions exist:

1. No reasonable use of the property is possible without some impact to the critical area.

2. No feasible and reasonable onsite alternative to the proposed activities is possible, including possible changes in site layout, reductions in density, and similar factors that would allow a reasonable economic use with fewer adverse impacts.

3. The proposed activities, as conditioned, will result in the minimum possible impacts to affected critical areas, considering their functions and values and/or the risks associated with proposed development.

4. The inability to derive reasonable economic use is not the result of the applicant's actions or that of a previous property owner, such as by segregating or dividing the property and creating an undevelopable condition.

5. Any alteration of a critical area approved under this section shall be subject to appropriate conditions and will require mitigation under an approved mitigation plan.

D. Approval of a reasonable use exception shall not eliminate the need for any other permit or approval otherwise required for a proposal by applicable city regulations.

Section 1.11 Variances.

A. Applications for variances from the strict application of the terms of this chapter to a specific property may be submitted to the city. The hearing examiner shall consider all variance requests pursuant to Chapter 1.55 HCC. Approval of variances by the hearing examiner from the strict application of the critical area requirements shall be consistent with the following criteria:

1. There are unique physical conditions peculiar and inherent to the affected property that makes it difficult or impractical to comply with the provisions of this chapter;

2. The variance is the minimum necessary to accommodate the building footprint and access;

3. The proposed variance would preserve the functions and values of the critical area, and/or the proposal does not create or increase a risk to the public health, safety, and general welfare, or to public or private property;

4. The proposed variance would not adversely affect properties surrounding the subject site;

5. Adverse impacts to critical areas resulting from the proposal are minimal;

6. The special circumstances or conditions affecting the property are not a result of the actions of the applicant or previous owner; and,

7. The variance shall not constitute a grant of special privilege.

SECTION 2: WETLANDS

Section 2.1 Wetland Designation and Protection

A. The City shall regulate development activities to protect the function of all wetlands, including their ability to:

1. Provide flood and storm water control;

2. Recharge the aquifer;

2. Improve surface and ground water quality by trapping sediments, removing nutrients, and providing chemical detoxification;

3. Stabilize the streambeds; and

4. Provide habitat for species of concern.

B. The City adopts by reference the following maps and best available science resources for designating wetlands in the City of Hoquiam:

1. Designating wetlands

    a. City of Hoquiam Wetland Inventory, published 1997

    b. National Wetlands Inventory Maps, US Fish and Wildlife Service

    c. Soil Survey of Grays Harbor County Area, Pacific County, and Wahkiakum County Washington, USDA, 1986

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

2. Rating wetlands

    a. Washington State Wetland Rating System for Western Washington, Washington Department of Ecology, 2004, #04-06-025

3. Mitigating wetlands

    a. Wetland Mitigation in Washington State, Parts 1 and 2, 2006, publication numbers 06-06-011a and 06-06-011b

4. Wetland buffers and general guidance

a. Wetlands in Washington State, Volumes 1 and 2, 2005, Publications #05-06-006 and 05-06-008;

5. If the location, designation, or classification of a wetland shown on any map adopted by reference under the Hoquiam City Code is in conflict with the determination of any field investigation, the latter shall prevail.

C. The City prohibits non-exempt development activities in wetlands and required buffers unless no reasonable alternative exists for locating the project elsewhere.

Section 2.2 Buffers Required

A. Wetland buffer zones shall be required for all regulated activities adjacent to regulated wetlands. Any wetland created, restored or enhanced as compensation for approved wetland alterations shall also include the standard buffer required for the category of the created, restored, or enhanced wetland.

B. The total point score from the Wetland Rating Form shall determine the width of required buffers. Buffer widths are measured perpendicularly from the wetland boundary as determined through a field survey. Buffer widths shall not include those areas functionally and effectively disconnected from the wetland, such as by a road or other structures. When a buffer lacks adequate vegetation, the city may increase the standard buffer, require buffer planting or enhancement, and/or deny a proposal for buffer reduction or buffer averaging.

C. Buffer Dimensions

1. Buffer widths to protect Category 4 Wetlands: In accordance with Table 1

Table 1. Buffer widths for Category 4 Wetlands

Wetland Characteristic	Buffer Width by Impact of Proposed Land Use	Other Measures Recommended for Protection
Score for all 3 basic functions is less than 30 points	Low: 25 feet Medium: 40 feet High: 50 feet	None

2. Buffer widths to protect Category 3 Wetlands: In accordance with Table2.

Table 2. Buffer widths for Category 3 Wetlands

Wetland Characteristic	Buffer Width by Impact of Proposed Land Use	Other Measures Recommended for Protection
Moderate level of function for habitat (score for habitat 20 - 28 points)	Low: 75 feet Medium: 110 feet High: 150 feet	None
Not meeting above characteristics	Low: 40 feet Medium: 60 feet High: 80 feet	None

3. Buffer widths to protect Category 2 Wetlands: In accordance with Table 3

Table 3. Buffer widths for Category 2 Wetlands

Wetland Characteristic	Buffer Width by Impact of Proposed Land Use	Other Measures Recommended for Protection
High level of function for habitat (score for habitat 29-36 points)	Low: 150 feet Medium: 225 feet High: 300 feet	Maintain connection to other habitat areas
Moderate level of function for habitat (score for habitat 20-28 points)	Low: 75 feet Medium: 110 feet High: 150 feet	None
High level of function for water quality improvement and low for habitat (score for water quality 24-32 points; habitat less than 20 points)	Low: 50 feet Medium: 75 feet High: 100 feet	No additional surface discharges of untreated runoff
Estuarine	Low: 75 feet Medium: 110 feet High: 150 feet	None

Wetland Characteristic	Buffer Width by Impact of Proposed Land Use	Other Measures Recommended for Protection
Not meeting above characteristics	Low: 50 feet Medium: 75 feet High: 100 feet	None

4. Buffer widths to protect Category 1 Wetlands: In accordance with Table 4.

Table 4. Buffer widths for Category 1 Wetlands

Wetland Characteristic	Buffer Width by Impact of Proposed Land Use	Other Measures Recommended for Protection
Natural Heritage Wetlands	Low: 125 feet Medium: 190 feet High: 250 feet	No additional surface discharges to wetland or its tributaries No septic systems within 300 feet of wetland Restore degraded parts of buffer
Bogs	Low: 125 feet Medium: 190 feet High: 250 feet	No additional surface discharges to wetland or its tributaries Restore degraded parts of buffer
Forested	Buffer to be based on score for habitat functions or water quality functions	If forested wetland scores high for habitat, need to maintain connections to other habitat areas Restore degraded parts of buffer
Estuarine	Low: 100 feet Medium: 150 feet High: 200 feet	None
Wetlands in Coastal lagoons	Low: 100 feet Medium: 150 feet High: 200 feet	None

Wetland Characteristic	Buffer Width by Impact of Proposed Land Use	Other Measures Recommended for Protection
High level of function for habitat (score for habitat 29-36 points)	Low: 150 feet Medium: 225 feet High: 300 feet	Maintain connection to other habitat areas Restore degraded parts of buffer
Moderate level of function for habitat (score for habitat 20-28 points)	Low: 75 feet Medium: 110 feet High: 150 feet	None
High level of function for water quality improvement and low for habitat (score for water quality 24-32 points; habitat less than 20 points)	Low: 50 feet Medium: 75 feet High: 100 feet	No additional surface discharges of untreated runoff
Not meeting above characteristics	Low: 50 feet Medium: 75 feet High: 100 feet	None

Section 2.3 Reduction of Buffer Widths

A. The administrator may reduce buffer widths for wetlands adjacent to high-intensity land uses to widths for moderate-intensity uses under the following conditions:

1. Wetlands that score moderate or high for habitat (20 points or more for the habitat functions) and meet the following criteria:

a. A relatively undisturbed, vegetated corridor at least 100-feet wide is protected between the wetland and any other Priority Habitats as defined by the Washington State Department of Fish and Wildlife ("relatively undisturbed" and "vegetated corridor" are defined in questions H 2.1 and H 2.2.1 of the *Washington State Wetland Rating System for Western Washington – Revised,* (Hruby 2004b)). Priority Habitats in western Washington include:

i. Wetlands

ii. Riparian zones

iii. Cliffs

iv. Old-growth forests

v. Estuary/estuary-like

vi. Marine/estuarine shorelines

vii. Eelgrass meadows

viii. Talus slopes

b. Application of measures to minimize the impacts of different land uses on wetlands as suggested in Table 5 below.

b. The developer protects the corridor for the entire distance between the wetland and the Priority Habitat by some type of legal protection, such as a conservation easement.

2. Wetlands that score less than 20 points for habitat functions: application of measures to minimize the impacts of different land uses on wetlands as suggested in Table 5 below.

3. Table 5 contains suggested measures to minimize impacts from proposed change in land use that have high impacts

Table 5: Examples of Mitigation Measures to Reduce Buffer Widths

Examples of Disturbance	Examples of Mitigation Measures
Lights	• Direct lights away from wetland
Noise	• Locate activity that generates noise away from wetland
Toxic runoff	• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting pesticide use within 150 feet of wetland • Apply integrated pest management
Stormwater runoff	• Retrofit stormwater detention and treatment for roads and existing adjacent development • Prevent channelized flow from lawns that directly enter the buffer
Change in water regime	• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns

Examples of Disturbance	Examples of Mitigation Measures
Pets & human disturbance	• Use privacy fencing; plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion; place wetland and its buffer in a separate tract

B. Where a legally established, non-conforming use of the buffer exists, such as a road or structure that lies within the width of a buffer recommended for that wetland, the city will allow proposed actions in the buffer as long as they do not increase the degree of nonconformity.

Section 2.4 Wetland Buffer Averaging

A. The city may allow the averaging of buffer widths if this will improve the protection of wetland functions, or if it is the only way to allow for reasonable use of a parcel. Buffer averaging may occur in the following situations:

1. Averaging to improve wetland protection when all of the following conditions are present:

i. The wetland has significant differences in characteristics that affect its habitat functions, such as a wetland with a forested component adjacent to a degraded emergent component or a "dual-rated" wetland with a Category I area adjacent to a lower rated area

ii. The buffer is increased adjacent to the higher-functioning area of habitat or more sensitive portion of the wetland and decreased adjacent to the lower functioning or less sensitive portion

iii. The total area of the buffer after averaging is equal to the area required without averaging

iv. The buffer at its narrowest point is never less than three-quarters (¾) of the required width

2. Averaging to allow reasonable use of a parcel when all of the following conditions are present:

i. There are no feasible alternatives to the site design that could be accomplished without buffer averaging

ii. The averaged buffer will not result in degradation of the wetland's functions and values as demonstrated by a report from a qualified wetland professional

iii. The total buffer area after averaging is equal to the area required without averaging

iv. The buffer at its narrowest point is never less than three-quarters (¾) of the required width

Section 2.5 Wetland Mitigation

A. If an application for development activities makes it necessary to alter or eliminate a wetland, the applicant shall compensate the loss or alteration by one or more of the following actions:

1. Restoring wetland acreage and functions to an area where those functions formerly occurred.

2. Creating new wetland area and functions in an area where they did not previously occur.

3. Enhancing functions at an existing wetland.

4. Preserving an existing high-quality wetland to protect if from future loss or degradation.

B. Altered wetlands shall require mitigation to ensure the same level of wetland function that existed at the time of the permit application. Table 6 below sets mitigation ratios for the type of action taken.

Section 2.6 Small, Isolated Wetlands

A. The administrator may approve the displacement of wetlands and associated buffers that are less than one thousand (1,000) square feet in total area if the following criteria exist:

1. The wetland is not associated with a riparian corridor.

2. The wetland is not part of a wetland mosaic

3. The wetland does not contain habitat identified as essential for local populations of priority species identified by Washington Department of Fish and Wildlife

Mitigation of impacts to displaced wetlands shall be in accordance with Section 2.6.

B. The administrator may approve the displacement of Category III and IV wetlands between one thousand (1,000) and four thousand (4,000) square feet without meeting the provisions of Section 1.6 (A)(1) through (4); provided, that the criteria in subsection A of this section are met and the wetland does not score twenty points or greater for habitat in the 2004 Western Washington Rating System.

C. Preservation of isolated wetlands with a total area of the combined wetland and buffer of ten thousand (10,000) square feet or less shall meet the following provisions, or if the said provisions cannot be demonstrated, as specified by the administrator, they may be displaced and shall be mitigated as specified in Section 2.6.

1. Depressional wetlands recharged only by precipitation, interflow or groundwater shall be assured a source of recharge to maintain its hydrologic character through stormwater infiltration, or other means.

2. Wetlands that have a potential to reduce flooding or erosion or has the potential and opportunity to maintain or improve water quality as evidenced by a score of at least ten (10) points on the applicable criteria of the wetland rating form for Western Washington shall maintain a hydraulic connection to surface water that maintains effective wetland function for flood or erosion reduction or water quality and does not substantially alter the existing hydroperiod of the wetland.

3. Wetlands that achieve a score of at least twenty points (20) on the habitat functions criteria of the wetland rating form for Western Washington shall maintain a connection to a linear corridor maintained as a stream buffer, a buffer associated with a geological hazard or other designated open space buffer sufficient to allow movement of terrestrial wildlife to and from the wetland and buffer complex without interruption by roads, paved areas or buildings within fifty feet.

Section 2.7 Wetland Technical Reports

A qualified wetlands expert shall prepare any technical assessment required by the City. The assessment shall follow the format described in Appendix H of the Washington State Department of Ecology publication Wetland Mitigation in

Washington State, Part 2: Developing Mitigation Plans, 2006, publication number 06-06-011b. In addition, the report will include the following analysis:

1. A written assessment and accompanying maps of the wetlands and buffers within three hundred (300) feet of the project area, including the following information at a minimum:

    a. Wetland delineation and required buffers;

    b. Existing wetland acreage;

    c. Wetland category;

    d. Vegetative, faunal, and hydrologic characteristics;

    e. Soil and substrate conditions;

    f. Topographic elevations, at two-foot contours, and

    g. A discussion of the water sources supplying the wetland and documentation of hydrologic regime (locations of inlet and outlet features, water depths throughout the wetland, evidence of recharge or discharge, evidence of water depths throughout the year – drift lines, algal layers, moss lines, and sediment deposits).

2. A discussion of measures, including avoidance, minimization, and mitigation, proposed to preserve existing wetlands and restore any wetlands that were degraded prior to the current proposed land use activity.

3. A habitat and native vegetation conservation strategy that addresses methods to protect and enhance on-site habitat and wetland functions.

4. Functional evaluation for the wetland and adjacent buffer using a local or state agency staff-recognized method and including the reference of the method and all data sheets.

5. Proposed mitigation, if needed, including a written assessment and accompanying maps of the mitigation area, including the following information at a minimum:

    a. Existing and proposed wetland acreage;

    b. Vegetative and faunal conditions;

c. Surface and subsurface hydrologic conditions including an analysis of existing and future hydrologic regime and proposed hydrologic regime for enhanced, created, or restored mitigation areas;

d. Relationship within watershed and to existing waterbodies;

e. Soil and substrate conditions, topographic elevations;

f. Existing and proposed adjacent site conditions;

g. Required wetland buffers (including any buffer reduction and mitigation proposed to increase the plant densities, remove weedy vegetation, and replant the buffers);

h. Property ownership; and

i. Associated wetlands and related wetlands that may be greater than three hundred (300) feet from the subject project.

6. A scale map of the development proposal site and adjacent area. A discussion of ongoing management practices that will protect wetlands after the project site has been developed; including proposed monitoring and maintenance programs.

7. A bond estimate for the installation (including site preparation, plant materials and installation, fertilizers, mulch, stakes) and the proposed monitoring and maintenance work for the required number of years.

8. Title Notification. All activity in critical area protection areas shall be accompanied by a title.

SECTION 3: GEOLOGICALLY HAZARDOUS AREAS

Section 3.1 Geologically Hazardous Areas Designation

A. The City shall regulate development activities in geologically hazardous area to protect the public's health, safety, and welfare. Development activities in geologically hazardous areas shall:

1. Minimize erosion and movement of sediment;

2. Preserve or replace vegetation in erosion hazard areas;

3. Prevent increased surface water discharge to adjacent properties;

4. Prevent decreased slope stability on adjacent properties; and,

5. Design or mitigate projects in geologically hazardous areas to eliminate unsafe conditions to on- and off-site property owners.

B. The City adopts by reference the following maps and best available science resources for geologically hazardous areas:

1. Designating geologically hazardous areas

   a. Soil Survey of Grays Harbor County Area, Pacific County, and Wahkiakum County Washington, USDA, 1986

   b. Geologic Map of the South Half of the Shelton and South Half of the Copalis Beach Quadrangles, Washington, Washington Division of Geology and Earth Resources, 1987; and,

2. If the location, designation, or classification of a geologically hazardous area shown on any map adopted by reference under the Hoquiam City Code is in conflict with the determination of any field investigation, the latter shall prevail.

C. Designated geologically hazardous areas are areas susceptible to erosion, sliding, earthquake, or other geological events. They pose a threat to the health and safety of citizens when incompatible commercial, residential, or industrial development occurs in areas of significant hazard. Geologically hazardous areas with significant hazard include:

1. Areas that are susceptible to one or more of the following types of hazards shall be classified as a geologically hazardous area:

   a. Erosion hazard;

   b. Landslide hazard;

   c. Seismic hazard; or

   d. Areas subject to other geological events such as coal mine hazards and volcanic hazards including: Mass wasting, debris flows, rockfalls, and differential settlement.

2. Erosion hazard areas identified by the United States Department of Agriculture Soil Conservation Service as having a "severe" rill and inter-rill erosion hazard.

3. Landslide hazard areas potentially subject to landslides based on a combination of geologic, topographic, and hydrologic factors. They include any areas susceptible because of any combination of bedrock, soil, slope (gradient), slope aspect, structure, hydrology, or other factors. Example of these may include, but are not limited to the following:

    a. Areas of historic failures, such as:

        i. Those areas delineated by the United States Department of Agriculture Soil Conservation Service as having a "severe" limitation for building site development;

        ii. Those areas mapped as class u (unstable), uos (unstable old slides), and urs (unstable recent slides) in the Department of Ecology Coastal Zone Atlas; or

        iii. Areas designated as quaternary slumps, earthflows, mudflows, lahars, or landslides on maps published as the United States Geological Survey or Department of Natural Resources Division of Geology and Earth Resources.

    b. Areas with all three of the following characteristics:

        i. Slopes steeper than fifteen percent; and

        ii. Hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and

        iii. Springs or ground water seepage;

    c. Areas that have shown movement during the Holocene Epoch (from ten thousand years ago to the present) or which are underlain or covered by mass wastage debris of that epoch;

    d. Slopes that are parallel or subparallel to planes of weakness (such as bedding planes, joint systems, and fault planes) in subsurface materials;

e. Slopes having gradients steeper than eighty percent (80%) subject to rockfall during seismic shaking;

f. Areas potentially unstable as a result of rapid stream incision, stream bank erosion, and undercutting by wave action;

g. Areas that show evidence of, or are at risk from snow avalanches;

h. Areas located in a canyon or on an active alluvial fan, presently or potentially subject to inundation by debris flows or catastrophic flooding;

i. Any area with a slope of forty percent (40%) or steeper and with a vertical relief of ten (10) or more feet except areas composed of consolidated rock. A slope is delineated by establishing its toe and top and measured by averaging the inclination over at least ten (10) feet of vertical relief.

4. Seismic hazard areas subject to severe risk of damage because of earthquake-induced ground shaking, slope failure, settlement, soil liquefaction, or surface faulting. One indicator of potential for future earthquake damage is a record of earthquake damage in the past. Ground shaking is the primary cause of earthquake damage in Washington. The strength of ground shaking is primarily affected by:

a. The magnitude of an earthquake;

b. The distance from the source of an earthquake;

c. The type of thickness of geologic materials at the surface; and

d. The type of subsurface geologic structure.

Settlement and soil liquefaction conditions occur in areas underlain by cohesionless soils of low density, typically in association with a shallow ground water table.

Section 3.2 Technical Reports

A. The city may require a technical assessment prepared by a qualified expert for any non-exempt development activities proposed in a geologically hazardous area. The report shall:

1. Determine the exact boundaries of all geologically hazardous areas affecting the site and the impact of the proposed development on the standards set forth under Section 3.1; and,

2. Recommend mitigation measures to ensure or, if mitigation is not possible, recommendations for adequate buffers from the hazard or hazards to protect public health, safety, and welfare.

Section 3.3 Mitigation in Geologically Hazardous Areas

A. Engineering, design, or modified construction or mining practices can reduce or mitigate some geological hazards so that risks to health and safety are acceptable. However, when technology cannot reduce risks to acceptable levels, building in geologically hazardous areas is prohibited.

SECTION 4: FISH AND WILDLIFE HABITAT CONSERVATION AREAS

Section 4.1 Fish and Wildlife Habitat Conservation Areas Designation

A. Designated fish and wildlife habitat conservation areas include:

1. Areas with which endangered, threatened, and sensitive species have a primary association;

2. Habitats and species of local importance;

3. Commercial and recreational shellfish areas;

4. Kelp and eelgrass beds; herring and smelt spawning areas;

5. Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish or wildlife habitat;

6. Waters of the State and their associated riparian areas; and

7. State natural area preserves and natural resource conservation areas.

B. The city adopts by reference the following maps and best available science resources for fish and wildlife habitat conservation areas:

1. Designation and protection

a. Priority Habitat Maps, Washington Department of Fish and Wildlife

b. Salmon and Steelhead Habitat Limiting Factors, Water Resource Inventory Areas 22 and 23, by Carol Smith PhD. and Mark Wenger

c. The Chehalis Basin Salmon Habitat Restoration and Preservation Work Plan for WRIAs 22 and 23, Chehalis Basin Partnership

d. Management Recommendations for Washington's Priority Species, Volumes I through V, Washington Department of Fish and Wildlife.

Section 4.2 Standards for Protection of Fish and Wildlife Habitat Conservation Areas

A. Development activities occurring on lands and waters containing documented habitats for plant and animal species in fish and wildlife habitat conservation areas shall result in no net loss of existing function.

B. Development activities allowed in fish and wildlife habitat conservation areas shall be consistent with the species located there and shall be regulated additionally by restrictions defined in applicable federal, state and local regulations regarding the species.

C. Habitat conservation areas may overlap with other identified critical areas. Likely areas of overlap include critical drainage corridors, geologically hazardous areas and wetlands. When habitat areas overlap with other critical areas, all the performance standards established for the overlaying critical area(s) shall apply. If multiple critical areas overlap in an area, the most restrictive conditions shall apply.

Section 4.3 Technical Reports – Habitat Management Plan

A. The city shall require a technical assessment prepared by a qualified expert for any non-exempt development activities proposed in or adjacent to a habitat conservation area.

B. Applications for development activities shall provide a technical assessment consisting of a habitat management plan recommending appropriate protections based on the Washington Department of Fish and Wildlife Species and Habitat Recommendations.

C. The technical assessment shall at a minimum provide:

1. Detailed description of vegetation on and adjacent to the project area and its associated buffer;

2. Identification of any species of local importance, priority species, or endangered, threatened, sensitive, or candidate species that have a primary association with habitat on or adjacent to the project area, and assessment of potential project impacts to the use of the site by the species;

3. A discussion of any federal, state, or local special management recommendations, including Washington Department of Fish and Wildlife habitat management recommendations, that have been developed for species or habitats located on or adjacent to the project area;

4. A detailed discussion of the direct and indirect potential impacts on habitat by the project, including potential impacts to water quality;

5. A discussion of measures, including avoidance, minimization, and mitigation, proposed to preserve existing habitats and restore any habitat that was degraded before the current proposed land use activity; and,

6. A discussion of ongoing management practices that will protect habitat after the project completion, including proposed monitoring and maintenance programs.

Section 4.4 Requirements for Developments along Shorelines

A. Development activities occurring along shorelines in or adjacent to habitat conservation areas shall achieve no net loss of habitat function.

B. The city requires buffer corridors along shorelines to retain areas of native vegetation and to allow for habitat connectivity. Development activities shall meet the following buffer standards:

1. Developments along shorelines downstream of the confluence of the East and West Forks of the Hoquiam River and adjacent to the Grays Harbor Estuary shall meet the following standards:

   a. Maintain a riparian corridor of at least twenty-five (25) feet along seventy-five percent (75%) of the shoreline length measured perpendicularly from the ordinary high water mark landward.

   b. For water dependent developments that are unable to meet the above standard, the city shall assign required buffers on a case-by-case basis. The developer shall prepare for the

administrator's review a habitat management plan that recommends and justifies mitigation actions to compensate for the reduced buffer, including on- and/or off-site restoration and preservation actions.

2. Development along all other shorelines within the city not included in Section 4.4(1) shall provide the following buffers by water type:

   a. Type S Water: 150 feet

   b. Type F Water greater than 10 feet wide: 150 feet

   c. Type F Water 10 feet or less in width: 100

   c. Type Np Water: 75 feet

   d. Type Ns Water: 50 feet

SECTION 5: FREQUENTLY FLOODED AREAS

Section 5.1 Frequently Flooded Areas Designation and Protection

Frequently flooded areas are those same areas regulated by the Floodplain District, Chapter 11.16 of Hoquiam City Code. Protection of frequently flooded areas is as provided in that chapter.

SECTION 6: DEFINITIONS

A. Critical areas: includes the following areas and ecosystems as defined in RCW 36.70A.030 and WAC 365-195-200:

   a. Wetlands;

   b. Areas with a critical recharging effect on aquifers used for potable water;

   c. Fish and wildlife habitat conservation areas;

   d. Frequently flooded areas; and,

   e. Geologically hazardous areas.

B. Aquifer recharge area: an area with a critical recharging effect on an aquifer that is vulnerable to contamination and is used as a sole source of potable water supply. Aquifer recharge areas are those areas designated pursuant to:

a. The Federal Safe Drinking Water Act

b. RCW 90.44, 90.48, and 90.54, and

c. WAC 173-100 and 173-200.

C. Fish and wildlife habitat conservation area: land managed for maintaining species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created. This does not mean maintaining all individuals of all species at all times, but it does mean cooperative and coordinated land use planning is critically important among counties and cities in a region. In some cases, intergovernmental cooperation and coordination may show that it is sufficient to assure that a species will usually be found in certain regions across the state. Fish and wildlife habitat conservation areas include areas with which endangered, threatened, and sensitive species have a primary association; waters of the State; State natural area preserves and natural conservation areas; and streams and rivers planted with game fish by a governmental agency.

D. Geologically hazardous areas: areas that because of the susceptibility to erosion, sliding, earthquake, or other geological events, are not generally suited to locating commercial, residential, or industrial development consistent with public health or safety concerns. Geologically hazardous areas are characterized by slopes greater than fifteen (15%) and known erosion, landslides, settling, rock slide, debris flow and/or seismic hazards as defined by the US Department of Agriculture Soil Conservation Service.

E. High intensity uses: Residential uses greater than one (1) dwelling unit per acre and all other permitted or conditional uses in the Single-Family and General Residential Districts; all uses within the General Commercial, Industrial, and Heavy Commercial/Light Industrial Districts; and, all uses within Overlay Districts.

F. Low intensity uses: Harvest of forestlands that do not result in a conversion; unpaved bicycling and foot trails; and utility corridors without an access/maintenance road.

G. Moderate intensity uses: Residential uses that are one (1) dwelling unit per acre or less in the Single-Family, General Residential, and Natural

Resource Production Districts; paved bicycling and foot trails; logging roads; and utility corridors with an access/maintenance road.

H. Species of concern: Species of Concern in Washington include those species listed as State Endangered, State Threatened, State Sensitive, or State Candidate, as well as species listed or proposed for listing by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service. See WAC 232-12-297 for further definition.

I. Type S Water means all waters, within their bankfull width, as inventoried as "Shorelines of the State" under Chapter 90.58 RCW and the rules promulgated pursuant to Chapter 90.58 RCW including periodically inundated areas of their associated wetlands. See WAC 222-16-030.

J. Type F Water means segments of natural waters other than Type S Waters, which are within the bankfull widths of defined channels and periodically inundated areas of their associated wetlands, or within lakes, ponds, or impoundments having a surface area of 0.5 acre or greater at seasonal low water and which in any case contain fish habitat. See WAC 222-16-030.

K. Type Np Water means all segments of natural waters within the bankfull width of defined channels that are perennial nonfish habitat streams. Perennial streams are flowing waters that do not go dry any time of a year of normal rainfall and include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow. See WAC 222-16-030.

L. Type Ns Water means all segments of natural waters within the bankfull width of the defined channels that are not Type S, F, or Np Waters. These are seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np Water. Ns Waters must be physically connected by an above-ground channel system to Type S, F, or Np Waters. See WAC 222-16-030.

M. Wetland or wetlands: 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, 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. Wetlands may include those artificial wetlands intentionally created from nonwetland areas created to mitigate conversion of wetlands.

N. Qualified expert: A person who prepares a technical assessment with expertise appropriate to the relevant critical area. Expertise shall consist of professional credentials and/or certification, any advanced degrees earned in the pertinent scientific discipline from a recognized university, the number of years of experience in the pertinent scientific discipline, recognized leadership in the discipline of interest, formal training in the specific area of expertise, and field and/or laboratory experience with evidence of the ability to produce peer-reviewed publications or other professional literature. Geologists preparing technical assessments shall meet the requirements of a licensed geologist under Chapter 18.220 RCW.

Table 6. Wetland Mitigation Ratios

Category & Type of Wetland Impacts	Re-establishment or Creation	Rehabilitation Only	Re-establishment or Creation (R/C) & Rehabilitation (RH)	Re-establishment or Creation (R/C) & Enhancement (E)	Enhancement Only
All Category IV	1.5:1	3:1	1:1 R/C & 1:1 RH	1:1 R/C & 2:1 E	6:1
All Category III	2:1	4:1	1:1 RC & 2:1 RH	1:1 R/C & 4:1	8:1
Category II Estuarine	Case-by-case	4:1 Rehabilitation of an estuarine wetland	Case-by-case	Case-by-case	Case-by-case
All other Category II	3:1	6:1	1:1 R/C & 4:1 RH	1:1 R/C & 8:1 E	12:1
Category I Forested	6:1	12:1	1:1 R/C & 10:1 RH	1:1 R/C & 20:1 E	24:1
Category I Estuarine	Case-by-case	6:1 Rehabilitation of an estuarine wetland	Case-by-case	Case-by-case	Case-by-case
All other Category I	4:1	8:1	1:1 R/C & 6:1 RH	1:1 R/C & 12:1 E	16:1