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Chapter 17.26

ENVIRONMENTALLY SENSITIVE AREAS

Sections:

17.26.010 Introduction.

The purpose of this chapter is to identify and protect environmentally sensitive areas, also known as critical areas, and to supplement the city's development regulations by providing additional land use controls without violating the constitutional rights of property owners.

A. This chapter is intended to meet the requirements of and require permits for all work performed in identified environmentally sensitive areas:

1. The Washington State Growth Management Act, Chapter 36.70A RCW; and

2. The Washington State Shoreline Management Act, Chapter 90.58 RCW.

B. In the event of conflicts between this chapter and the chapter implementing the city's shoreline master program, the provisions of the updated shoreline regulations shall prevail. (Ord. 3889 § 3 (Exh. A), 2017)

17.26.020 Applicability.

All development activities including new uses of land and buildings and changes of use must comply with all provisions of this chapter and this title as well as all applicable provisions of local, state, and federal law, unless specifically exempted.

A. Environmentally sensitive areas, or critical areas, subject to the provisions of this chapter shall consist of:

1. Wetlands;

2. Geologically hazardous areas;

3. Fish and wildlife habitat conservation areas;

4. Frequently flooded areas; and

5. Critical aquifer recharge areas.

B. It is important to note that the shoreline areas within two hundred feet of the ordinary high water mark of the rivers and streams in the city and their associated wetlands are under the jurisdiction of the Washington State Shoreline Management Act and, in addition to the requirements of this chapter, proposed development activities involving these areas must also comply with the provisions of the city of Kelso shoreline master program, as approved by the Washington State Department of Ecology, and the implementing regulations in Chapter 17.30.

1. The rivers and streams in the city of Kelso under the jurisdiction of the Washington State Shoreline Management Act include:

a. Columbia River;

b. Cowlitz River;

c. Coweeman River; and

d. Owl Creek.

2. Please contact the department of community development for a map highlighting the shoreline areas under the jurisdiction of the Shoreline Management Act and for more information about the Kelso shoreline master program.

C. Exemptions. The following activities may be determined by the city to be exempt from the provisions of this chapter:

1. Maintenance, operation, reconstruction of existing public and private roads, streets, driveways, utility lines, and existing structures; provided, that reconstruction of any such facilities does not extend outside the previously disturbed area;

2. Installation, construction, or replacement of utility lines in improved city right-of-way, not including electric substations;

3. The removal or control of noxious weeds by nonmechanical means;

4. Maintenance of previously approved ground cover or other vegetation in a critical area or buffer area; provided, that no further disturbance is created;

5. Minimal site investigative work required by a city, state, or federal agency, or any other applicant, such as surveys, soil logs, percolation tests, and other related activities; provided impacts on environmentally critical areas are minimized and disturbed areas are restored to the preexisting level of function and value within one year after tests are concluded;

6. Passive recreational uses such as sport fishing, scientific or educational review, or similar minimum impact, nondevelopment activities;

7. Maintenance of intentionally created artificial wetlands or surface water systems including irrigation and drainage ditches, grass-lined swales and canals, detention facilities and landscape or ornamental amenities. Wetlands, streams, lakes, or ponds created as mitigation for approved land use activities or that provide critical habitat are not exempt and shall be regulated according to the mitigation plan.

D. It shall be the responsibility of property owners and the sponsors of proposed development activities to know the location of environmentally sensitive areas and jurisdictional shoreline areas on and near their property and to comply with the provisions of this chapter at all times.

1. Property owners and project sponsors that may be proposing development activities in proximity of environmentally sensitive areas are strongly encouraged to schedule an appointment with city staff to discuss the applicability of these regulations prior to preparing and submitting land use applications to the city.

2. The city shall maintain public maps that may assist in the identification of environmentally sensitive areas. However, it shall be the responsibility of the property owner or project sponsor to identify and map all environmentally sensitive areas on their property.

a. The presence of a critical area and/or its associated buffer on a parcel triggers the requirements of these regulations, regardless of whether or not a critical area or buffer is depicted on an official map. (Ord. 3889 § 3 (Exh. A), 2017)

17.26.030 General provisions.

A. Mitigation Sequencing. Property owners or project sponsors shall, when designing proposed development activities that may potentially affect environmentally sensitive areas, use the following measures, listed in priority order, to avoid, minimize, and/or mitigate adverse impacts:

1. Avoiding the adverse impact altogether by not taking a certain action or parts of an action or moving the proposed action;

2. 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;

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

4. Reducing or eliminating the adverse impact over time by preservation and maintenance operations during the life of the action;

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

6. Monitoring the impact and taking appropriate corrective measures.

B. Application Requirements. Project sponsors are strongly encouraged to schedule an appointment and meet with city staff to discuss development plans before application materials are prepared and submitted.

1. It shall be the responsibility of property owners and the sponsors of proposed development activities to identify all environmentally sensitive areas and jurisdictional shoreline areas on their property and within three hundred feet of their property lines on all application materials including required environmental checklists.

2. All land use applications submitted to the city involving environmentally sensitive areas must include a SEPA checklist.

3. Any required environmentally sensitive area reports.

4. Application materials for all associated permits and approvals, as may be required by the city.

C. Overlapping Buffer Requirements. In the event that more than one buffer applies to a proposed development, the buffer affording the highest level of protection as determined by the city should apply where the buffers overlap, unless specifically authorized by the city.

D. Emergency Measures to Protect the Public Health and Safety. Nothing in this title shall prevent a public agency or a private property owner from taking emergency actions necessary to protect persons and property from immediate or urgent threats to the public health and safety.

1. Emergency measures should be limited to reasonable measures necessary to protect the public health and safety from the immediate or urgent threat.

2. The city, and other state and federal agencies, such as the Washington State Department of Fish and Wildlife, should be contacted as soon as practical after the emergency action to determine if any additional measures are required and what, if any, permits may be required.

3. Remediation may be required after the fact to restore the site to preemergency conditions. Once the immediate threat has been addressed, any adverse impacts on critical areas should be minimized and mitigated according to the provisions of this chapter.

4. Property owners are advised that the failure to take appropriate preventative measures, the failure to secure required permits in advance, the failure to meet conditions of approval including the maintenance of erosion control measures, and/or the failure to act in a timely manner may not constitute an emergency and may result in the imposition of civil penalties and/or remediation measures.

E. Performance Bonds. In an effort to ensure the successful installation, operation, and maintenance of compensatory mitigation measures or other requirements under this title, the city may require a performance bond(s) or comparable financial guarantee.

1. The performance bond or guarantee may be up to one hundred fifty percent of the estimated cost of the required improvement.

2. The duration and form of the financial guarantee shall be determined by the city in consultation with the city attorney. (Ord. 3889 § 3 (Exh. A), 2017)

17.26.040 Environmentally sensitive or critical areas reports.

A. All proposed development activities that may impact environmentally sensitive areas or their buffers shall include a critical areas report prepared in accordance with the provisions of this chapter, unless this requirement is waived in writing by the city.

1. The cost of preparing any required environmentally sensitive areas report(s) shall be borne by the applicant.

2. Environmentally sensitive areas reports shall be prepared by a qualified professional(s) as determined by the city.

3. The cost of a professional peer review of any required environmentally sensitive areas report, if required by the city, shall be borne by the applicant.

4. Individual environmentally sensitive areas reports may be combined with other required environmentally sensitive areas or shoreline reports, in a format approved by the city.

5. All reports shall use best available science as defined by 365-195 WAC Growth Management-Best Available Science. Criteria for determining the validity of the Best Available Science shall be based upon 365-195-905 WAC Criteria for determining which information is the best available science.

B. Environmentally sensitive areas reports shall be prepared in a format approved by the city and should include:

1. An identification of the critical areas and documentation of their location;

2. An assessment of the existing function and values of the critical area;

3. Documentation of the methodology used to identify and assess the critical areas and the standards utilized to prepare proposed mitigation sequencing measures;

4. Other potential impacts on the identified critical areas;

5. Proposed measures, utilizing the following mitigation sequencing listed in priority order, to avoid, minimize, and/or mitigate potential adverse impacts:

a. Avoiding the adverse impact altogether by not taking a certain action or parts of an action or moving the proposed 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/or

f. Monitoring the impact and taking appropriate corrective measures;

6. Identification of proposed buffers and areas not suitable for development;

7. The critical area's expected functions and values after mitigation;

8. Provisions for monitoring the mitigation area as reasonably necessary to determine whether stated objectives have been accomplished. A contingency plan shall be included in the event the stated objectives are not accomplished;

9. Proposed restoration plans in the event that the critical areas had been previously altered without authorization;

10. Additional information or provisions as may be required by Sections 17.26.050 through 17.26.090.

C. Mitigation shall be provided on site, except where on-site mitigation is not scientifically feasible, economical, or practical due to physical features of the property. The burden of proof shall be on the applicant to demonstrate that mitigation cannot be provided on site.

1. When mitigation cannot be provided on site, mitigation shall be provided in the immediate vicinity of the permitted activity on property owned or controlled by the applicant where such mitigation is practical and beneficial to the critical area and associated resources. Where possible, this means within the same hydrologic unit as the location of the proposed project; and

2. When considering off-site mitigation, preference should be given to using alternative mitigation, such as a mitigation bank, an in-lieu fee program, or advance mitigation. (Ord. 3889 § 3 (Exh. A), 2017)

D. Reasonable Use Exception. The Environmentally Sensitive Areas Ordinance allows for reasonable use if the ordinance would otherwise deny all reasonable use of the property. Reasonable use provisions should limit intrusions into critical areas to the greatest extent possible. Emergency repairs, remodels that do not further extend into critical areas, surveying, walking and development that has been completed with critical areas review under a previous permit are exempt from acquiring a Reasonable Use Exemption permit. All Reasonable Use Exceptions shall be processed as a Type 3 permit. (KMC17.10.070 Procedures for Type 3 review.)

17.26.050 Wetlands.

A. Identification of wetlands and delineation of their boundaries pursuant to these regulations shall be done in accordance with the approved federal wetland delineation manual and applicable regional supplements. All areas both within the city and within the shoreline jurisdiction, per Chapter 90.58 RCW, meeting the wetland designation criteria in that procedure are hereby designated critical areas and are subject to the provisions of these regulations. Wetland delineations are valid for five years; after such date the city shall determine whether a revision or additional assessment is necessary.

B. Wetland Rating. Wetlands shall be rated according to the Washington Department of Ecology wetland rating system, as set forth in the Washington State Wetland Rating System for Western Washington: 2014 Update (Ecology Publication No. 14-06007), ~~or~~ as revised and the 1987 Federal Wetland Delineation Manual and Regional

Supplements as amended, whichever is more restrictive. The descriptions of wetland categories according to the rating system are as follows:

1. Category I. Category I wetlands are: (a) relatively undisturbed estuarine wetlands larger than one acre; (b) wetlands of high conservation value that are identified by scientists of the Washington Natural Heritage Program/DNR; (c) bogs; (d) mature and old-growth forested wetlands larger than one acre; (e) wetlands in coastal lagoons; (f) interdunal wetlands that score eight or nine habitat points and are larger than one acre; and (g) wetlands that perform many functions well (scoring twenty-three points or more). These wetlands: (a) represent unique or rare wetland types; (b) are more sensitive to disturbance than most wetlands; (c) are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or (d) provide a high level of functions.

2. Category II. Category II wetlands are: (a) estuarine wetlands smaller than one acre, or disturbed estuarine wetlands larger than one acre; (b) interdunal wetlands larger than one acre or those found in a mosaic of wetlands; or (c) wetlands with a moderately high level of functions (scoring between twenty and twenty-two points).

3. Category III. Category III wetlands are: (a) wetlands with a moderate level of functions (scoring between sixteen and nineteen points); (b) can often be adequately replaced with a well-planned mitigation project; and (c) interdunal wetlands between 0.1 and one acre. Wetlands scoring between sixteen and nineteen points generally have been disturbed in some ways and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.

4. Category IV. Category IV wetlands have the lowest levels of functions (scoring fewer than sixteen points) and are often heavily disturbed. These are wetlands that we should be able to replace, or in some cases to improve. However, experience has shown that replacement cannot be guaranteed in any specific case. These wetlands may provide some important functions, and should be protected to some degree.

C. Development Limitations—Alterations of Wetlands. Alteration of all wetlands shall be fully mitigated and not be allowed unless mitigation sequencing has been followed. Regulated development shall conform with and be governed by the following:

1. Alteration of Category I wetlands is prohibited unless the alteration would improve habitat to threatened or endangered species occupying the habitat. This improvement of both functions and values must be demonstrated within the wetland critical areas report and the mitigation plan. A qualified expert may use best professional judgment to design a plan to allow such alterations to Category I wetlands.

2. Alteration of Category II wetlands may be allowed only when it is demonstrated by a qualified expert through a wetlands site assessment that any of the following criteria are met:

a. Public benefit will accrue through the alteration, and no reasonable and practical alternative to the alteration exists through on-site design or through acquisition of additional area; or

b. The alteration would enhance or maintain the existing wetland function and value, or the alteration would create a higher value or less common wetland type, which would improve the function or value of the wetland as indicated within the wetland critical areas report and the mitigation plan.

3. Alteration of Category III wetlands may be allowed only when it is demonstrated through a wetlands site evaluation that any of the following criteria are met:

a. Public benefit will accrue through the alteration and absence of reasonable, practicable alternative.

b. No reasonable and practical alternative to the alteration exists through on-site design.

c. The impacts are fully mitigated.

4. Alteration of Category IV wetlands may be allowed if feasible alternatives cannot be identified during the site plan review process, state and federal regulatory agencies concur with allowing the alteration, and impacts are fully mitigated.

5. Activities Allowed in Wetlands. The activities listed below may be allowed in wetlands, and do not require submission of a critical areas report, except where such activities would result in a reduction or loss of the functions and values of a wetland or wetland buffer. These activities include:

a. Conservation or preservation of soil, water, vegetation, fish, shellfish, and/or other wildlife that does not entail changing the structure or functions of the existing wetland.

b. The harvesting of wild crops in a manner that is not injurious to natural reproduction of such crops, and provided the harvesting does not require tilling of soil, planting of crops, chemical applications, or alteration of the wetland by changing existing topography, water conditions, or water sources.

c. Enhancement of a wetland through the removal of nonnative, invasive plant species. Removal of invasive plant species shall be restricted to hand removal unless permits from the appropriate regulatory agencies have been obtained for approved biological or chemical treatments. All removed plant material shall be taken away from the site and appropriately disposed of. Plants that appear on the Washington State Noxious Weed Control Board list of noxious weeds must be handled and disposed of according to a noxious weed control plan appropriate to that species. Revegetation using handheld equipment with appropriate native species at natural densities is allowed in conjunction with removal of invasive plant species.

d. Educational and scientific research activities that do not degrade the critical area.

D. Wetland Buffers. Wetland buffers shall be designated in accordance with the following:

1. Buffers are required for all wetlands. Wetland buffer widths are established in Table 1-A of this section.

2. Buffer widths shall be measured perpendicular to the delineated boundaries of the regulated wetland and extend the required distance.

3. The standard buffer widths assume that the buffer is vegetated with a native plant community appropriate for the ecoregion. If the existing buffer is unvegetated, sparsely vegetated, or vegetated with invasive species that do not perform needed functions, the buffer should either be planted to create the appropriate plant community, or the buffer should be widened to ensure that adequate functions of the buffer are provided.

4. If an applicant chooses not to apply the mitigation measures in Table 1-B, then a thirty-three percent increase in the width of all buffers is required. For example, a seventy-five-foot buffer with the mitigation measures would be a one-hundred-foot buffer without them.

5. The authorization of variable buffer widths intended to protect the functions of the wetland shall be based on a wetland assessment conducted by a qualified wetland professional, to evaluate the impact of current and proposed land use on the wetland. Wetland functions include but are not limited to flood control functions, ground and surface water aquifer recharge functions, and sediment retention and pollution control functions (refer to subsection E of this section for buffer averaging).

6. Wetland buffer widths intended to protect fish and wildlife habitat shall be based on Table 1-A.

7. Buffer widths can be reduced below the minimums when site-specific, abrupt topographical changes such as cliffs, or human-made features such as levees, dikes, railroads, or streets, indicate that extending the buffer beyond such features will not improve wetland protection.

Table 1-A: Wetland Buffer Requirements

	Buffer Width if Wetland Scores:			
Wetland Category	**3-4 Habitat Points**	**5 Habitat Points**	**6-7 Habitat Points**	**8-9 Habitat Points**
Category I: Based on total score	75 ft	Add 30 ft	Add 90 ft	Add 150 ft
Category I: Bogs and Wetlands of High Conservation Value	190 ft			
Category I: Forested	75 ft	Add 30 ft	Add 90 ft	Add 150 ft
Category II	75 ft	Add 30 ft	Add 90 ft	Add 150 ft
Category III	75 ft	Add 45 ft	Add 105 ft	Add 165 ft
Category IV	40 ft			

8. Buffer widths in Table 1-A require the mitigation measures below in Table 1-B, where applicable.

Table 1-B: Required Measures to Minimize Impacts to Wetlands

Disturbance	**Required Measures to Minimize Impacts**
Lights	• Direct lights away from wetland
Noise	• Locate activity that generates noise away from wetland • If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source • For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10-ft heavily vegetated buffer strip immediately adjacent to the outer wetland buffer
Toxic runoff	• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 ft 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 enters the buffer • Use low-intensity development techniques (per PSAT publication on LID techniques)
Change in water regime	• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns
Pets and human disturbance	• Use privacy fencing OR plant dense native vegetation to delineate buffer edge and to discourage disturbance • Place wetland and its buffer in a separate tract or protect with a conservation easement
Dust	• Use best management practices to control dust
Disruption of corridors or connections	• Maintain connections to off-site areas that are undisturbed • Restore corridors or connections to off-site habitats by replanting

E. Wetland Buffer Width Averaging. Buffer widths may be modified by averaging buffer widths or by enhancing buffer quality as set forth herein:

1. Buffer width averaging shall be allowed only where:

a. 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.

b. 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 as demonstrated by a critical areas report from a qualified wetland professional.

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

d. The buffer at its narrowest point is never less than either three-quarters of the required width or seventy-five feet for Categories I and II, fifty feet for Category III, and twenty-five feet for Category IV, whichever is greater.

2. Averaging to allow reasonable use of a parcel may be permitted when all of the following are met:

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

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

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

d. The buffer at its narrowest point is never less than either three-quarters of the required width or seventy-five feet for Categories I and II, fifty feet for Category III, and twenty-five feet for Category IV, whichever is greater.

3. Buffer widths shall not be reduced by more than twenty-five percent of the required buffer or to less than twenty-five feet, whichever is wider.

4. The minimum buffer width stated in Table 1-A of this section may be required to be increased by up to twenty-five percent when the qualified wetland professional determines, based upon a site-specific wetland analysis, that impacts on the wetland from a proposed development can be mitigated only by a greater buffer width. The standard wetland buffer width shall be increased:

a. When the adjacent land is susceptible to severe erosion, and erosion control measures will not effectively prevent adverse wetland impacts; or

b. When the standard buffer has minimal or degraded vegetative cover that cannot be improved through enhancement; or

c. When the minimum buffer for a wetland extends into an area with a slope of greater than fifteen percent, the buffer shall be the greater of:

i. The minimum buffer for that particular wetland; or

ii. Twenty-five feet beyond the point where the slope becomes fifteen percent or less.

5. Required buffers shall not prevent all reasonable use of property. A reasonable use exception may be granted; provided, that the applicant meets the criteria in this title.

F. Activities Allowed in a Wetland Buffer Zone. The following uses may be allowed within a wetland buffer in accordance with the review procedures of this title, provided they are not prohibited by any other applicable law and they are conducted in a manner so as to minimize impacts to the buffer and adjacent wetland:

1. Passive Recreation Development Activity. Passive recreation facilities (such as constructed walkways, trails, and viewing platforms) designed and in accordance with an approved critical area assessment, including:

a. Walkways and trails; provided, that those pathways are generally parallel to the perimeter of the wetland, are located in the outer twenty-five percent of the buffer area, are constructed with a surface that does not interfere with the soil permeability, and the surface of which is no more than five feet wide. The design and construction of walkways and trails shall avoid impacts to established native woody vegetation. Raised boardwalks utilizing nontreated pilings are acceptable;

b. Wildlife viewing structures less than two hundred square feet.

2. Stormwater Management Facilities. Stormwater management facilities are not allowed in buffers of Category I or II wetlands. Stormwater management facilities, limited to stormwater dispersion outfalls and bioswales, may be allowed within the outer twenty-five percent of the buffer of Category III or IV wetlands; provided, that:

a. No other location is feasible; and

b. The location of such facilities will not degrade the functions or values of the wetland.

3. Utility Transmission Facilities. Utility facilities which carry liquid petroleum products or any other hazardous substance as defined in Chapter 173-303 WAC may be permitted within wetland buffers only when demonstrated by a qualified professional that the design, location, and monitoring of the proposed facility will not cause adverse effects to the buffer or wetland.

4. Normal and routine maintenance and repair of any existing public or private facilities within an existing right-of-way; provided, that the maintenance or repair does not increase the footprint or use of the facility or right-of-way.

5. Nonconforming Uses. Repair and maintenance of nonconforming uses or structures, where legally established within the buffer, provided they do not increase the degree of nonconformity.

G. Mitigation Standards.

1. All adverse impacts to wetlands and buffers as identified in the wetlands critical areas report shall be specified in a mitigation plan consistent with Kelso development standards, be prepared by a qualified expert, and be consistent with the standards outlined in Table 2.

Table 2: Wetland Mitigation Ratios

Category and Type of Wetland	Creation or Reestablishment	Rehabilitation	Enhancement
Category I: Bog, Natural Heritage Site	Not considered possible	Case by case	Case by case
Category I: Mature Forested	6:1	12:1	24:1
Category I: Based on Functions	4:1	8:1	16:1
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

2. Buffer Mitigation Ratios. Impacts to buffers shall be mitigated at a 1:1 ratio. Compensatory buffer mitigation shall replace those buffer functions lost from development.

3. Mitigation Sequencing. Before impacting any wetland or its buffer, an applicant shall demonstrate that the following actions have been taken. Actions are listed in the order of priority:

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

b. 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.

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

d. Reduce or eliminate the impact over time by preservation and maintenance operations.

e. Compensate for the impact by replacing, enhancing, or providing substitute resources or environments.

f. Monitor the required compensation and take remedial or corrective measures when necessary.

4. Requirements for Compensatory Mitigation.

a. Compensatory mitigation for alterations to wetlands shall be used only for impacts that cannot be avoided or minimized and shall achieve equivalent or greater biologic functions. Compensatory mitigation plans shall be consistent with Wetland Mitigation in Washington State—Part 2: Developing Mitigation Plans—Version 1, (Ecology Publication No. 06-06-011b, Olympia, WA, March 2006 or as revised) and Selecting Wetland Mitigation Sites Using a Watershed Approach (Western Washington) (Publication No. 09-06-32, Olympia, WA, December 2009).

b. Mitigation ratios shall be consistent with the ratios in Table 2.

c. As an alternative to the ratios in Table 2, the credit/debit method may be used. To more fully protect functions and values, the city may allow mitigation based on the "credit/debit" method developed by the Department of Ecology in "Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington: Final Report" (Ecology Publication No. 1006-011, Olympia, WA, March 2012), or as revised.

d. The area where the mitigation occurred and any associated buffer shall be located in a critical area tract or a conservation easement.

e. Monitoring. Mitigation monitoring shall be required for a period necessary to establish that performance standards have been met, but not for less than five years. If a scrub-shrub or forested vegetation community is proposed, monitoring may be required for ten years or more. The project mitigation plan shall include monitoring elements that ensure certainty of success for the project's natural resource values and functions. If the mitigation goals are not attained within the initial five-year period, the applicant remains responsible for restoration of the natural resource values and functions until the mitigation goals in the mitigation plan are achieved.

5. Wetland mitigation actions shall not result in a net loss of wetland areas except when the following criteria are met:

a. The lost wetland area provides minimal functions and the mitigation action(s) results in a net gain in wetland functions as determined by a site-specific function assessment; or

b. The loss of wetland area provides minimal functions as determined by a site-specific function assessment, and other replacement habitats provide greater benefits to the functioning of the watershed, such as riparian habitat restoration and enhancement.

6. Mitigation actions shall address functions affected by the alteration to achieve functional equivalency or improvement, and shall provide similar wetland functions as those lost except when:

a. The lost wetland provides minimal functions as determined by a site-specific function assessment and the proposed mitigation action(s) will provide equal or greater functions or will provide functions shown to be limiting within a watershed through a formal watershed assessment plan or protocol; or

b. Out-of-kind replacement will best meet formally identified regional goals such as replacement of historically diminished wetland types.

7. Mitigation Preference. Mitigation actions that require compensation by replacing, enhancing or substituting shall occur in the following order of preference:

a. Restoration (reestablishment and rehabilitation) of wetlands:

i. The goal of reestablishment is returning natural or historic functions to a former wetland. Reestablishment results in a gain in wetland acres (and functions). Activities could include removing fill material, plugging ditches, or breaking drain tiles.

ii. The goal of rehabilitation is repairing natural or historic functions of a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres. Activities could involve breaching a dike to reconnect wetlands to a floodplain or return tidal influence to a wetland.

b. Creation (establishment) of wetlands on disturbed upland sites such as those with vegetative cover consisting primarily of nonnative species. Establishment results in a gain in wetland acres. This should be attempted only when there is an adequate source of water and it can be shown that the surface and subsurface hydrologic regime is conducive to the wetland community that is anticipated in the design.

If a site is not available for wetland restoration to compensate for expected wetland and/or buffer impacts, the approval authority may authorize creation of a wetland and buffer upon demonstration by the applicant's qualified wetland scientist that:

i. The hydrology and soil conditions at the proposed mitigation site are conducive for sustaining the proposed wetland and that creation of a wetland at the site will not likely cause hydrologic problems elsewhere;

ii. The proposed mitigation site does not contain invasive plants or noxious weeds or that such vegetation will be completely eradicated at the site;

iii. Adjacent land uses and site conditions do not jeopardize the viability of the proposed wetland and buffer (e.g., due to the presence of invasive plants or noxious weeds, stormwater runoff, noise, light, or other impacts); and

iv. The proposed wetland and buffer will eventually be self sustaining with little or no long-term maintenance.

c. Enhancement of significantly degraded wetlands in combination with restoration or creation. Enhancement should be part of a mitigation package that includes replacing the altered area and meeting appropriate ratio requirements. Enhancement is undertaken for specified purposes such as water quality improvement, floodwater retention, or wildlife habitat. Enhancement alone will result in a loss of wetland acreage and is less effective at replacing the functions lost. Applicants proposing to enhance wetlands or associated buffers shall demonstrate:

i. How the proposed enhancement will increase the wetland's/buffer's functions;

ii. How this increase in function will adequately compensate for the impacts; and

iii. How all other existing wetland functions at the mitigation site will be protected.

d. Preservation. Preservation of high-quality, at-risk wetlands as compensation is generally acceptable when done in combination with restoration, creation, or enhancement; provided, that a minimum of 1:1 acreage replacement is provided by reestablishment or creation. Ratios for preservation in combination with other forms of mitigation generally range from 10:1 to 20:1, as determined on a case-by-case basis, depending on the quality of the wetlands being altered and the quality of the wetlands being preserved.

Preservation of high-quality, at-risk wetlands and habitat may be considered as the sole means of compensation for wetland impacts when the following criteria are met:

i. The area proposed for preservation is of high quality. The following features may be indicative of high-quality sites:

(A) Category I or II wetland rating (using the wetland rating system for Western Washington).

(B) Rare wetland type (for example, bogs, mature forested wetlands, estuarine wetlands).

(C) The presence of habitat for priority or locally important wildlife species.

(D) Priority sites in an adopted watershed plan.

ii. Wetland impacts will not have a significant adverse impact on habitat for listed fish, or other ESA listed species.

iii. There is no net loss of habitat functions within the watershed or basin.

iv. Mitigation ratios for preservation as the sole means of mitigation shall generally start at 20:1. Specific ratios should depend upon the significance of the preservation project and the quality of the wetland resources lost.

v. Permanent preservation of the wetland and buffer will be provided through a conservation easement or tract held by a land trust.

vi. The impact area is small (generally less than one-half acre) and/or impacts are occurring to a low-functioning system (Category III or IV wetland).

8. All mitigation sites shall include buffer areas adequate to protect the habitat and its functions from encroachment and degradation.

9. Wetland Mitigation Banks.

a. Credits from a wetland mitigation bank may be approved for use as compensation for unavoidable impacts to wetlands when:

i. The bank is certified under state rules;

ii. The city determines that the wetland mitigation bank provides appropriate compensation for the authorized impacts; and

iii. The proposed use of credits is consistent with the terms and conditions of the certified bank instrument.

b. Replacement ratios for projects using bank credits shall be consistent with replacement ratios specified in the certified bank instrument.

c. Credits from a certified wetland mitigation bank may be used to compensate for impacts located within the service area specified in the certified bank instrument. In some cases, the service area of the bank may include portions of more than one adjacent drainage basin for specific wetland functions.

10. When an applicant proposes to alter or eliminate a regulated wetland, the applicant shall be required to replace or enhance the function and value of the wetland. Compensatory mitigation for alterations to wetlands shall be used only for impacts that cannot be avoided or minimized and shall achieve equivalent or greater biologic functions. Compensatory mitigation plans shall be consistent with Wetland Mitigation in Washington State—Part 2: Developing Mitigation Plans (Version 1), Ecology Publication No. 06-06-11b, Olympia, WA, March 2006 or as revised.

H. Critical areas reports for wetlands shall also include:

1. Narrative. The report narrative must include all of the following:

a. The name and contact information of the applicant;

b. The name, qualifications, and contact information of the primary author(s) of the wetland critical area report;

c. Location information (legal description, parcel number and address);

d. Site characteristics, including topography, total acreage, delineated wetland acreage, other water bodies, vegetation, soil types, etc.;

e. Identification and characterization of all critical areas, water bodies, shorelines, floodplains, and buffers on or adjacent to the proposed project area. For areas off site of the project site, estimate conditions within three hundred feet of the project boundaries using the best available information;

f. Identification of the wetland's rating as defined in these regulations;

g. Analysis of functions and values of existing wetlands and buffers, including flood control, water quality, aquifer recharge, fish and wildlife habitat, and hydrologic characteristics;

h. A complete description of the proposed project and its potential impacts, including an estimation of acreages of impacts to wetlands and buffers based on the field delineation and survey, and any impacts due to hydroperiod alterations;

i. Discussion of project alternatives, including any feasible options for total avoidance of impacts to wetland areas and buffers;

j. A wetland buffer width recommendation and rationale for all wetlands on or adjacent to the site, if different from buffers required in these regulations;

k. If mitigation for wetland impacts is proposed, a description and analysis of that mitigation; and

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

2. Vicinity map drawn to scale and including a north arrow, public roads, and other known landmarks in the vicinity.

3. National Wetlands Inventory Map (U.S. Fish and Wildlife Service) and/or a Cowlitz County wetland inventory map identifying wetlands on or adjacent to the site.

4. Site map drawn to a usable scale, one inch equals one hundred feet or better, and including a north arrow and all of the following requirements:

a. Site boundary/property lines and dimensions;

b. Wetland boundaries based upon a qualified wetland professional's delineation, and depicting sample points and differing wetland types if any;

c. Recommended wetland buffer boundary;

d. Buffers for off-site critical areas that extend onto the project site;

e. Internal property lines such as rights-of-way, easements, etc.;

f. Existing physical features of the site, including buildings and other structures, fences, roads, utilities, parking lots, etc.;

g. The location of the development proposal, including grading and clearing limits; and

h. Topographical variations.

5. An on-site wetland delineation report, including data sheets, prepared by a qualified expert. The wetland boundaries shall be staked and flagged. The report shall include:

a. A description of the methodologies used to conduct the wetland delineations and ratings, including references;

b. Photos documenting that the wetland boundaries have been staked and flagged; and

c. Wetland rating forms, including a description of and score for each function, per subsection B of this section, Wetland Ratings; hydrogeomorphic classification; wetland acreage based on a professional survey from the field delineation (acreages for on-site portion and estimates for entire wetland area including off-site portions, if field delineation of the off-site portion is infeasible); Cowardin classification of vegetation communities; habitat elements; soil conditions based on site assessment and/or soil survey information; and to the extent possible, hydrologic information such as location and condition of inlets/outlets (if they can be legally accessed), estimated water depths within the wetland, and estimated hydroperiod patterns based on visual cues (e.g., algal mats, drift lines, flood debris, etc.). Provide acreage estimates, classifications, and ratings based on entire wetland complexes, not only the portion present on the proposed project site.

6. Documentation of any other field work performed on the site, e.g., baseline hydrologic data, etc.

7. A copy of the site plan sheet(s) for the project must be included with the written report and must include, at a minimum:

a. Maps (to scale) depicting delineated and surveyed wetland and required buffers on site, including buffers for off-site critical areas that extend onto the project site; the development proposal; other critical areas; grading and clearing limits; and areas of proposed impacts to wetlands and/or buffers (include square footage estimates).

b. A depiction of the proposed stormwater management facilities and outlets (to scale) for the development, including estimated areas of intrusion into the buffers of any critical areas. (Ord. 3889 § 3 (Exh. A), 2017)

17.26.060 Fish and wildlife habitat conservation areas.

A. Designation of Critical Fish and Wildlife Habitat Conservation Areas. Critical fish and wildlife habitat conservation areas are designated according to the classifications in the following table:

Classifications WAC 365-190-130	**Description**
(1) Areas with which state designated endangered, threatened, or sensitive species have a primary association. Example: Coweeman River.	Areas which, if significantly altered, may reduce the likelihood that the species will reproduce over the long term. Habitats associated with these species are those identified by the Washington Department of Fish and Wildlife's habitat and species maps, as amended. These habitats are designated as critical areas, where endangered, threatened, and sensitive species are verified to have a primary association.
(2) Species and habitats of local importance.	Habitat: Unique or significant habitats which regionally rare wildlife species depend upon and that have high wildlife concentrations, including: 1. Caves, 2. Talus slopes, 3. Snag rich areas (outside forest practices). Species: Wildlife species which require protective measures for their continued existence due to their population status or sensitivity to habitat alterations or are highly valued by the local citizens. Species meeting the above criteria but not depending upon a habitat of local importance (as listed above) to meet criteria habitat needs are those documented, verified, and mapped in Cowlitz County.
(3) Smelt spawning areas.	The entire length of the Cowlitz River adjacent to the city of Kelso is smelt spawning territory.
(4) Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish or wildlife habitat.	Naturally occurring ponds with a surface area of less than twenty acres but greater than one acre. Naturally occurring ponds do not include ponds deliberately created from dry sites such as canals, detention facilities, wastewater treatment facilities, farm ponds, temporary construction ponds (of less than three years' duration), and landscape amenities. However, naturally occurring ponds may include those artificial ponds intentionally created from dry areas in order to mitigate conversion of ponds, if permitted by a regulatory authority.
(5) Waters of the state.	Waters of the state shall be those defined in WAC 222-16-030, Forest Practices Board, Definitions, with the following revisions: (a) "Type S water" means all waters 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. (b) "Type F water" means segments of natural waters which are not classified as Type S water and have fish, wildlife, or human use. These are segments of natural water and periodically inundated areas of their associated wetlands. (c) "Type Np water" means all segments of natural waters within defined channels that are perennial nonfish habitat streams. Perennial streams are waters that do not go dry any time of a year of normal rainfall. However, for the purpose of water typing, Type Np waters include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow. (d) "Type Ns water" means all segments of natural waters within 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 aboveground channel system to Type S, F, or N waters.
(6) Lakes, ponds, streams, and rivers planted with game fish by a governmental agency or tribal entity.	The Cowlitz River is planted with game fish by governmental agencies.
(7) State natural area preserves and natural resource conservation areas.	Currently, there are no natural resource conservation areas within the city of Kelso.
(8) Unintentionally created ponds.	Ponds with a surface area of less than twenty acres, but greater than one acre.

B. Development Performance Standards. Development or regulated activity shall conform to and be governed by the following items in this section. Mitigation plans including most current, accurate, and complete scientific and technical information available should be developed by a qualified fish and wildlife biologist.

1. When impacts to critical fish and wildlife habitat cannot be avoided, the performance standards contained in this section shall be used to develop plans submitted for regulated activities.

2. Locate buildings and structures in a manner that preserves the habitat or minimizes adverse impacts.

3. Consolidate habitat and vegetated open space in contiguous blocks, and where possible locate habitat contiguous to other habitat, open space or landscaped areas to contribute to a continuous system or corridor that provides connections to adjacent habitat areas.

4. Use native species in any landscaping of disturbed or undeveloped areas and in any enhancement of habitat or buffers.

5. Emphasize heterogeneity and structural diversity of vegetation in landscaping.

6. Remove and/or control any noxious or undesirable species of plants.

7. Preserve trees to the extent possible, preferably in consolidated areas.

8. Preserve and introduce native plant species which serve as food, shelter from climatic extremes and predators, and structure and cover for reproduction and rearing of young for critical wildlife.

9. Preserve the natural hydraulic and ecological functions of drainage systems.

10. Preserve critical fish and wildlife habitat areas through maintenance of stable channels; adequate flow levels; and management of stormwater runoff, erosion, and sedimentation.

11. Manage access to critical fish and wildlife habitat areas to protect species that are sensitive to human disturbance.

12. Maintain or enhance water quality through control of runoff and use of best management practices.

C. A habitat management plan (HMP) shall be required as follows. Habitat management plans will be sent to the Washington State Department of Fish and Wildlife and other state and federal agencies with jurisdiction for comment with the SEPA checklist.

1. A habitat management plan shall be required if the regulated activity is within two hundred fifty feet of a Classification 1 habitat area, or identified within one thousand feet of a point location (nests, dens, etc.) for a Classification 1 habitat area.

2. Habitat Protection for Classification 2. Protection for these habitat areas shall be through the development performance standards listed above.

3. Habitat Protection for Classifications 4, 5, and 6. Protection for these habitat areas shall be required through the Shoreline Management Act, the Federal Clean Water Act, and the State Hydraulic Code and/or best management practices. Within Classification 5, Type 1, 2, and 3 waters are regulated streams, as defined in WAC 222-16-030, Forest Practices Board, Definitions.

4. The stream typing system as provided in WAC 222-16-030 as hereafter amended shall be utilized for stream classification. The Department of Natural Resources stream classification maps shall be used to determine classification unless the critical areas report provides a basis for reclassification. The city may consult with the Department of Natural Resources and Washington Department of Fish and Wildlife to gain concurrence on any change in classification.

D. At a minimum, a habitat management plan shall typically contain the following information. Technical justification shall be provided where the qualified expert does not deem any information applicable.

1. A description of state or federally designated endangered, threatened or sensitive fish or wildlife species, or species of local importance, on site or adjacent to the subject property within a distance typical of the normal range of the species.

2. A description of the critical wildlife habitat for the identified species known or expected to be located on site or immediately adjacent to the subject property.

3. A site plan that clearly identifies and delineates critical fish and wildlife habitats found on site or immediately adjacent to the subject property.

4. An evaluation of the project's effects on critical fish and wildlife habitat both on and adjacent to the subject property.

5. A summary of any federal, state, or local management recommendations that have been developed for the critical fish or wildlife species or habitats located at the site.

6. A statement of measures proposed to preserve existing habitats and restore area degraded as a result of proposed activities.

7. A description of proposed measures that mitigate the impacts of the project.

8. An evaluation of ongoing management practices which will protect critical fish and wildlife habitat after the project site has been fully developed, including proposed monitoring and maintenance programs of the subject property. (Ord. 3889 § 3 (Exh. A), 2017)

17.26.070 Frequently flooded critical areas.

A. Introduction. It is the purpose of this chapter to promote the public health, safety and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

1. To protect human life;

2. To minimize expenditure of public money and costly flood-control projects;

3. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

4. To minimize prolonged business interruption;

5. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, and streets and bridges located in areas of special flood hazard;

6. To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard;

7. To ensure that potential buyers are notified that property is in an area of special flood hazard;

8. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions;

9. To implement the Washington State Flood Control Zone Permit Program pursuant to the requirements of RCW 86.16.060 and Chapter 508-60 WAC; and

10. To fully implement the Flood Damage Prevention Program requirements of the Department of Housing and Urban Development's (HUD) Federal Flood Insurance Program.

B. In order to accomplish its purpose, this chapter includes methods and provisions for:

1. Restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;

2. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

3. Controlling the alteration of natural floodplains, stream channels and natural protective barriers, which help accommodate or channel floodwaters;

4. Controlling filling, grading, dredging and other development which may increase flood damage; and

5. Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

C. This section shall apply to all areas of special flood hazard within the city.

1. The areas of special flood hazard identified by the Federal Insurance Administration and recognized by the State Department of Ecology (DOE) in a scientific and engineering report entitled "Flood Insurance Study for the City of Kelso, Washington," dated December 16, 2015, and any revisions thereto, with accompanying Flood Insurance Rate Maps (FIRM), and any revisions thereto, are hereby adopted by reference and declared to be a part of this chapter.

a. All lands identified by the city, as within the one-hundred-year floodplain are designated as frequently flooded areas.

2. No structure or land within the areas of special flood hazard shall hereafter be constructed, located, extended, converted, altered or divided without full compliance with the terms of this chapter and other applicable regulations. Any violation or failure to comply with the terms of this chapter shall constitute a misdemeanor making the violator subject to the penalties prescribed for other misdemeanors in the city. A conviction under this code does not relieve the violator from compliance with provisions of this chapter.

3. The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by manmade or natural causes. This chapter does not imply that land outside the areas of special flood hazard or uses permitted within such will be free from flooding or flood damages. This chapter shall not create liability on the part of the city, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made thereunder.

D. A floodplain development permit and/or a critical area permit shall be obtained before construction or development begins within any area of special flood hazard. Specifically, the following information is required:

1. Elevation in relation to mean sea level of the lowest habitable floor (including basements) of all structures;

2. Elevation in relation to mean sea level to which any structure has been floodproofed;

3. Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in this;

4. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development; and

5. Documentation that all necessary permits have been obtained from those federal, state or local governmental agencies from which prior approval is required. A permit may be issued on the condition that the specified state or federal permits are subsequently obtained.

E. Under limited circumstances a variance to the provisions of this section may be approved by the city; provided, that:

1. Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

2. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

3. Variances shall only be issued upon:

a. A showing of good and sufficient cause;

b. A determination that failure to grant the variance would result in exceptional hardship to the applicant; and

c. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.

4. Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.

5. Variances as interpreted in the National Flood Insurance Program are based on the general zoning law principle that they pertain to a physical piece of property; they are not personal in nature and do not pertain to the structure, its inhabitants, economic or financial circumstances. They primarily address small lots in densely populated residential neighborhoods. As such, variances from the flood elevations should be quite rare.

6. Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of floodproofing than watertight or dry-floodproofing, where it can be determined that such action will have low damage potential, and complies with the provisions of this title.

7. In addition to satisfying the general requirements for a variance in Chapter xxxxxxx, requests for a variance from the provisions of this section must address:

a. The danger that materials may be swept into other lands to the injury of others;

b. The danger to life and property due to flooding or erosion damage;

c. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;

d. The importance of the services provided by the proposed facility to the community;

e. The necessity to the facility of a waterfront location, where applicable;

f. The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;

g. The compatibility of the proposed use with existing and anticipated development;

h. The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;

i. The safety of access to the property in times of flood for ordinary and emergency vehicles;

j. The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site; and

k. The cost of providing governmental services during the afterflood including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, and streets and bridges.

F. In all areas of special flood hazard the following standards are required:

1. Anchoring.

a. All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure.

b. All manufactured homes must likewise be anchored to prevent flotation, collapse or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but not be limited to, use of over-the-top or frame ties to ground anchors or other techniques as described in the Federal Emergency Management's guidebook entitled "Manufactured Home Installation in Flood Hazard Areas."

c. An alternative method of anchoring may involve a system designed to withstand a wind force of ninety miles per hour or greater. Certification must be provided by a registered professional engineer or architect.

2. Construction Materials and Methods.

a. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

b. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.

3. Utilities.

a. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems;

b. Water wells shall be located on high ground that is not in the floodway (WAC 173-160-171);

c. New and replacement sanitary sewerage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters;

d. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding; and

e. Electrical, heating, ventilation, plumbing, air conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during the conditions of flooding.

4. Subdivision and Mobile Home Park Proposals.

a. All subdivision and mobile home park proposals shall be consistent with the need to minimize flood damage.

b. All subdivision and mobile home park proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.

c. All subdivision and mobile home park proposals shall have adequate drainage provided to reduce exposure to flood damage.

d. Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed development which contain at least fifty lots or five acres (whichever is less).

5. Review of Building Permits.

a. Where elevation data is not available either from the Flood Insurance Study or from another authoritative source (Section 18.12.150), applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available. Failure to elevate at least two feet above grade in these zones may result in higher insurance rates.

G. In all areas of special flood hazard where base flood elevation data has been provided, the following provisions are required:

1. Residential Construction.

a. New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated two feet or more above the base flood elevation (BFE).

b. Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwater. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:

i. A minimum of two openings which have a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided;

ii. The bottom of all openings shall be no higher than one foot above grade;

iii. Openings may be equipped with screens, louvers or other coverings or devices; provided, that they permit the automatic entry and exit of floodwaters.

2. AE and A1-30 Zones with Base Flood Elevations but No Floodways.

a. In areas with base flood elevations, but where a regulatory floodway has not been designated, no new construction, substantial improvements, or other development, including infill, shall be permitted within zones AE and A1-30 on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

3. Nonresidential Construction. New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest habitable floor elevated to the level of the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

a. Be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water;

b. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

c. Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans;

d. Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor;

e. Applicants floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level (e.g., a building constructed to the base flood level will be rated as one foot below that level).

4. Standards for Shallow Flooding Areas (AO Zones). Shallow flooding areas appear on FIRMs as AO zones. The base flood depths in these zones range from one to three feet above ground where a clearly defined channel does not exist, or where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is usually characterized as sheet flow. In these areas, the following provisions apply:

a. New construction and substantial improvements of residential structures and manufactured homes within AO zones shall have the lowest floor (including basement) elevated above the highest adjacent

grade to the structure, two feet or more above the depth number specified in feet on the community's FIRM, or at least three and one-half feet above the highest adjacent grade to the structure if no depth number is specified;

b. New construction and substantial improvements of nonresidential structures within AO zones shall either:

i. Have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, two feet or more above the depth number specified on the FIRM, or at least three and one-half feet above the highest adjacent grade to the structure if no depth number is specified; or

ii. Together with attendant utility and sanitary facilities, be completely floodproofed to or above that level so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. If this method is used, compliance shall be certified by a registered professional engineer or architect.

c. Require adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.

5. Manufactured Homes. All manufactured homes to be placed or substantially improved on sites shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated two feet or more above the base flood elevation and is securely anchored to an adequately anchored foundation system. This section applies to all manufactured homes:

a. In existing manufactured home parks or subdivisions;

b. In expansions to existing manufactured home parks or subdivisions;

c. In new manufactured home parks or subdivisions; and

d. Outside of a manufactured home park or subdivision.

6. Recreational Vehicles. Recreational vehicles placed on sites are required to either:

a. Be on the site for fewer than one hundred eighty consecutive days;

b. Be fully licensed and ready for highway use, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached additions.

7. Accessory Structures.

a. Accessory structures shall not be used for human habitation.

b. Accessory structures shall be designed to have low flood damage potential.

c. Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters.

d. Accessory structures shall be firmly anchored to prevent flotation which may result in damage to other structures.

e. Service facilities such as electrical and heating equipment shall be elevated above the base flood level or floodproofed.

8. Critical Facility. Construction of new critical facilities shall be, to the extent possible, located outside of the limits of the special flood hazard area (SFHA) (one-hundred-year floodplain). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities

constructed within the SFHA shall have the lowest floor elevated three feet above the base flood elevation (BFE) or to the height of the five-hundred-year flood, whichever is higher. Access to and from the critical facility shall be protected to the height utilized above floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the BFE shall be provided to all critical facilities to the extent possible.

9. Floodways. Located within areas of special flood hazard are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles and erosion potential, the following provisions apply:

a. Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels during the occurrence of the base flood discharge.

b. Construction or reconstruction of residential structures is prohibited within designated floodways (WAC 173-158-070), except for:

i. Repairs, reconstruction or improvements to structures which do not increase the ground floor area; and

ii. Repairs, reconstruction or improvements to the structure, provided the cost of such repairs, reconstruction or improvements does not exceed fifty percent of the market value of the structure, either (A) before the repair, reconstruction or improvement is started; or (B) if the structure has been damaged and is being restored, before the damage occurred. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or to structures identified as historic places, shall not be included in the fifty percent market value determination procedure. (Ord. 3889 § 3 (Exh. A), 2017)

17.26.080 Geologic hazard areas.

~~A. For all regulated activities proposed within designated landslide, erosion, seismic and mine hazard areas, a geotechnical assessment or an erosion hazard assessment prepared by a qualified expert shall be submitted and coordinated with International Building Code requirements.~~

A. Introduction

1. The purpose of this section is to provide regulations for the protection of public safety, health and welfare in geologically hazardous areas, including: erosion hazard, landslide hazard, seismic hazard, mine hazard, and volcanic hazard areas. As per RCW 36.70A.030(10) geologically hazardous areas are defined as areas that because of their susceptibility to erosion, sliding, earthquake, or other geological events, are not suited to the siting of commercial, residential, or industrial development consistent with public health or safety concerns.

2. This chapter applies to and permits are required for:
   a. Development activities, actions requiring project permits, and clearing except for the following:
      i. Non-ground disturbing interior or exterior building improvements;
      ii. Routine landscape maintenance of established, ornamental landscaping;
      iii. Non-ground disturbing normal maintenance or repair;
      iv. Removal of noxious weeds conducted in accordance with chapter 16.750 WAC;
      v. Maintenance, repair, or replacement that does not expand the footprint area of the following existing facilities:
         A. septic tanks and drain fields;
         B. wells;
         C. individual utility service connections; and
         D. individual cemetery plots in established and approved cemeteries;
         E. improved public and private road rights-of-way

F. utility corridors
G. trails
H. utility facilities,
I. flood protection and bank stabilization structures,
J. stormwater facilities; and
K. structures;
L. Felling or topping of hazardous trees based on review by a qualified arborist
M. Minor replacement, modification or installation of drainage, water quality or habitat enhancement projects; and
N. All other on-going lawfully established development activities not specifically addressed in this chapter.

vi. Data collection and research by nonmechanical means if performed in accordance with state-approved sampling protocols or Endangered Species Act (ESA) Section 10(a)(1)(a), Section 7 consultation (16 USC § 1536);

vii. Nonmechanical survey and monument placement;

viii. Soils testing or topographic surveying of slopes for purposes of scientific investigation, site feasibility analysis, and data acquisition for geotechnical report preparation provided it can be accomplished without road construction; and

ix. Quasi-judicial rezones not accompanied by another permit or approval.

b. Emergency activities necessary to prevent an immediate threat to public health, safety, welfare or property, or to prevent an imminent threat of serious environmental degradation, are allowed without prior approval in geologically hazardous areas, based on the criteria set forth in this section:

i. The activity must be the minimum necessary to alleviate the emergency;

ii. The project proponent shall notify the department prior to any action taken to remedy an emergency. If prior notification is not feasible, the project proponent shall notify the department within 48 hours of the action; and

iii. Applications for any required project permits necessary to satisfy compliance with this chapter are submitted to the department within 120 days of the start of the action taken. For activities not requiring permits, compliance with this chapter shall occur within a reasonable time period not to exceed twelve months.

3. Regulation of geologically hazardous areas located within shorelines of the state, as defined in chapter 90.58 RCW, shall be accomplished through compliance with the provisions of chapter 17.30 KMC . Whenever conflict arises between this code and other lawfully enacted regulations, the more restrictive of the regulations shall prevail.

4. Critical area protective measures required by this chapter shall also constitute adequate mitigation of adverse or significant adverse environmental impacts on geologically hazardous areas pursuant to section 17.14 KMC.

5. The director shall have the authority to adopt administrative rules to implement the provisions of this chapter. Rulemaking authority shall include, but is not limited to, the adoption of best management practices for the regulation of geologically hazardous areas.

6. If the department lacks the necessary expertise, the department may require independent consultant review of the application by a qualified professional to assess compliance with this chapter. If independent consultant review is required, the applicant shall make a deposit with the department to cover the cost of the review pursuant to the currently adopted fee code. Unexpended funds will be returned to the applicant following final decision on the application.

7. The city has designated geologically hazardous areas pursuant to RCW 36.70A.170 by defining them and providing criteria for their identification. Project proponents are responsible for determining whether a geologically hazardous area exists and is regulated pursuant to this chapter. The department will verify on a case-by-case basis the presence of geologically hazardous areas identified by project proponents. Specific criteria for the designation of geologically hazardous areas are contained in this Section. While the city maintains some maps of geologically hazardous areas, they are for informational purposes only and may not accurately represent all such areas.

8. The director may expand the boundary of a geologically hazardous area, impose additional or more stringent standards and requirements than those specified in this chapter or impose mitigation requirements to the extent necessary to:

a. Protect the public health, safety, and welfare; or
b. Mitigate any significant adverse impact from the proposed development activity.

9. The director's decision under this section shall be in writing and shall include findings that demonstrate how the decision meets the following criteria:

a. The decision eliminates or substantially reduces a specific public health, safety or welfare concern or a significant adverse impact; and
b. The decision is based on sound engineering practices.

C. The following define the different types of geologic hazard areas:

1. Erosion Hazard Areas

a. Classification. Erosion hazard areas are those areas identified by the presence of soils that are recognized as having a severe erosion hazard by the Natural Resources Conservation Service, Cowlitz Area, Washington.

b. Development Standards. For erosion hazard areas see KMC 17.26.080(C)(2)(b) Development Standards. Erosion Hazard Areas and Landslide Areas.

2. Landslide Hazard Areas.

a. Classification. Landslide hazard areas are those areas meeting any of the following criteria:

i. Areas of historic failure, such as areas designated as quaternary slumps, earthflows, mudflows, or landslides;

ii. Any area with the following:

A. Slope greater than 12 percent; and

1. Steep hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; or

2. Springs or groundwater seepage.

B. Any slope 40 percent or steeper with a vertical relief of 10 or more feet.

C. Slopes that are parallel or subparallel to planes of weakness, such as bedding planes, joint systems, and fault planes;

D. Slopes having gradients greater than eighty percent and subject to rock fall during seismic shaking;

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

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

G. Areas identified as being medium or high probability of slope instability based on Washington State Department of Natural Resources soils-based stability model or the most current map adopted by the city and filed with the city clerk;

H. Areas identified as being medium or high probability of slope instability based on field visits along with reasonable assumption of city staff or other qualified experts with localized knowledge of present site conditions.

b. Development Standards. Erosion Hazard Areas and Landslide Hazard Areas.

i. Development Standards for Landslide Hazard Areas and Erosion Hazard Areas. Any allowed or regulated activity on areas identified as landslide or erosion hazards or their buffers shall conform to the following standards:

A. Buffers.

1. An undisturbed fifty-foot buffer, as measured on the surface, is required from the top, toe, and along all sides of any existing landslide or eroded area, within a critical area;

2. Based on the results of the geotechnical assessment, the director may increase or decrease the buffer or require additional areas including buffers as indicated; and

3. The buffer shall be clearly staked before and during any construction or clearing.

B. General Design Guidelines.

1. Structures should be clustered where possible to reduce disturbance and removal of vegetation;

2. Foundations should conform to the natural contours of the slope; and

3. Roads, walkways, and parking areas should be designed to parallel the natural contours of the site.

C. Grading.

1. Clearing, grading, and other construction activities shall not aggravate or result in slope instability or surface sloughing;

2. Undergrowth shall be retained to the maximum extent feasible;

3. No dead vegetation (slash), fill, or other foreign material shall be placed within a landslide or erosion hazard area, other than that approved for bank stabilization or if such fill is consistent with authorized activities specified in a geotechnical report; and

4. Minimize ground disturbance to the maximum extent feasible by not allowing clearing from May 1st to October 1st of every year.

D. Erosion Control.

1. There shall be minimum disturbance of trees and vegetation in order to reduce erosion and maintain existing stability of hazard areas;

2. Vegetation removal on the slopes of banks between the ordinary high-water mark and the top of the banks shall be minimized because of the potential for erosion;

3. Vegetation and organic soil material shall be removed from fill site prior to the placement of fill;

4. Thinning of limbs of individual trees is preferred over tree removal as a means to provide a view corridor; and

5. Vegetative cover or engineered ground covers shall be placed on any disturbed surface to the extent feasible.

E. Drainage.

1. Surface drainage, including downspouts, shall not be directed across the face of a hazard area. If drainage must be discharged from the top of a hazard area to its toe, it shall be collected above the top and directed to the toe by tight line drain, and provided with an energy-dissipating device at the toe for discharge to a swale or other acceptable natural drainage areas; and

2. Stormwater retention and detention systems, including percolation systems utilizing buried pipe, require a geotechnical assessment that indicates such a system shall not affect slope stability and require the systems to be designed by a licensed civil engineer. The licensed civil engineer shall also certify that the systems are installed as designed.

F. Sewage Disposal System Drainfields. For the purpose of landslide or hazard areas, the sewage disposal drainfields shall be located outside of the hazard area buffer, unless otherwise justified by a qualified geotechnical engineer. The septic system drainfield must follow all local government health regulations.

3. Seismic Hazard Areas.

a. Classification. Seismic hazard areas are areas subject to severe risk of damage as a result of earthquake induced ground shaking, slope failure, settlement, soil liquefaction, lateral spreading, or surface faulting. Areas mapped in the moderate to high risk category on the Liquefaction Susceptibility Map of Cowlitz County, Washington, or the WDNR Interactive Map should be considered in a seismic hazard area.

b. Development Standards—Seismic Hazard Areas. All development within areas that meet the classification for seismic hazard areas shall comply with the International Building Code. A critical areas permit is not required by these regulations for seismic hazards.

4. Mine Hazard Areas:

a. Classification. For the purposes of this classification mine hazard areas are:

i. Abandoned mines and/or workings where locations are known.

ii. Abandoned mines and/or workings where exact locations are unknown but based upon the best available information there is good cause to believe it is within an area that may be reasonably delineated.

b. Development Standards—Mine Hazard Areas. Development adjacent to a mine hazard area is prohibited unless the applicant can demonstrate the development is consistent with the currently adopted standards for mining by the Washington Department of Natural Resources. If a proposal is located adjacent to a mine hazard area, a geotechnical assessment may be required.

5. Volcanic Hazard Areas:

a. Classification. For the purposes of this classification, all volcanic mudflow hazard areas shall be identified as the five-hundred-year floodplain areas identified in FEMA maps.

b. Development Standards—Volcanic Hazard Areas. Development shall comply with existing Federal Emergency Management Agency regulations for floodplain management. A critical areas permit is not required by these regulations for development in a volcanic hazard area.

B. Geotechnical Reconnaissance Reports and Geotechnical Investigation Reports.

1. All regulated activities proposed within a geologically hazardous area shall be evaluated by a geotechnical reconnaissance or geotechnical investigation as determined by KMC 17.26.080. If the qualified expert determines that these hazards cannot be fully evaluated with a geotechnical reconnaissance, then a geotechnical investigation shall be required.

2. Geotechnical Investigation Reports. A Geotechnical Investigation Report means a study of geologically hazardous areas where the qualified expert evaluates the hazard areas by performing a subsurface investigation (i.e., borings, test pits, cone penetration tests). A subsurface investigation shall include obtaining soil samples and testing for soil strength. A subsurface investigation is required for landslide and seismic (i.e., liquefaction) hazards, unless the qualified expert can provide compelling evidence as to why a geotechnical investigation is not required.

a. A geotechnical report will be required for any development activity, action requiring a project permit or clearing proposed within:

i. An erosion hazard area;

ii. A landslide hazard area;

iii. Two hundred feet of a mine hazard area; or

iv. Two hundred feet of any faults;

v. Within two hundred feet of slopes 20% or greater; or

vi. Any property of which all or a portion is identified within the Wegman Study Area.

b. The geotechnical report shall be prepared, stamped, and signed by a licensed engineer or geologist and contain the following information relevant to the geologically hazardous area:

i. The topography at contour intervals of five feet unless the underlying project permit requires a lesser interval;

ii. Significant geologic contacts, landslides, or downslope soil movement on and within 200 feet of the site;

iv. Impervious surfaces, wells, drain fields, drain field reserve areas, roads, easements, and utilities on the site;

v. The location or evidence of any springs, seeps, or other surface expressions of groundwater;

vi. The location or evidence of any surface waters;

vii. Identification of all existing fill areas;

viii. The location and extent of all proposed development activity;

ix. A discussion of the geological condition of the site including:

A. A description of the soils in accordance with the Natural Resource Conservation Service indicating the potential for erosion;
B. Engineering properties of the soils, sediments, and rocks on the subject property and adjacent properties and their effect on the stability of the slope;
C. A description of the slope in percent gradient;
D. The location or evidence of seismic faults and soil conditions indicating the potential for liquefaction; and
E. A hazard analysis and finding of risks associated with geologic hazards and the potential impacts to public safety, the hazard area and the subject property;
F. The proposed method of drainage and locations of all existing and proposed surface and subsurface
drainage facilities and patterns, and the locations and methods for erosion control;
G. The extent and type of existing vegetative cover;
H. A vegetation management and restoration plan prepared by persons experienced in vegetation management and restoration plans such as botanists, landscape architects and certified arborist, or other means for maintaining long-term stability of slopes;
I. Analysis of erosion rates, slope recession rates and potential impacts to existing or proposed development from wave cutting, stream meandering, or other erosional forces to determine the recommended solution for bank or shoreline stabilization or flood protection in conformance with KMC 17.26.070.
J. Analysis of soil borings when the geology of an area is uncertain; and
K. Any other information determined by the department to be necessary to determine compliance with this chapter including but not limited to the use of LIDAR, technical reports, studies or documents related to geologic hazards and models for estimating how far landslide materials will travel.

c. All geotechnical technical report shall include a summary or abstract of the report for the property where the development activity is proposed. The abstract shall at a minimum include the type of hazard, extent of the hazard, hazard analysis and geologic conditions. A geotechnical report shall include:

i. A description of the extent and type of vegetative cover;

ii. An estimate of load capacity including surface and groundwater conditions, public and private sewage disposal systems, fills and excavations and all structural development;

iii. An estimate of slope stability and the effect construction and placement of structures will have on the slope over the estimated life of the structure;

iv. An estimate of the bluff retreat rate that recognizes and reflects potential catastrophic events such as seismic activity or a one-hundred-year storm event;

v. Consideration of the run-out hazard of landslide debris and/or the impacts of landslide run-out on down slope properties;

vi. A study of slope stability including an analysis of proposed angles of cut and fill and site grading;

vii. Recommendations for building limitations, structural foundations, and an estimate of foundation settlement; and

viii. An analysis of proposed surface and subsurface drainage, and the vulnerability of the site to erosion.

ix. Erosion and Sediment Control Plan. For any development proposal on a site containing an erosion hazard area, an erosion and sediment control plan shall be required. The erosion and sediment control plan shall be prepared in compliance with requirements set forth in the locally adopted stormwater management regulations.

x. Drainage Plan. The report shall include a drainage plan for the collection, transport, treatment, discharge and/or recycle of water prepared in accordance with the locally adopted surface water management plan. The drainage plan should consider on-site septic system disposal volumes where the additional volume will affect the erosion or landslide hazard area.

xi.. Mitigation Plans. Hazard and environmental mitigation plans for erosion and landslide hazard areas shall include the location and methods of drainage, surface water management, locations and methods of erosion control, a vegetation management and/or replanting plan and/or other means for maintaining long-term soil stability.

xii. Monitoring Surface Waters. If the city determines that there is a significant risk of damage to downstream receiving waters due to potential erosion from the site, based on the size of the project, the proximity to the receiving waters, or the sensitivity of the receiving waters, the critical area report shall include a plan to monitor the surface water discharge from the site.

A. The monitoring plan shall include a recommended schedule for submitting monitoring reports to the city of Kelso.

3. Geotechnical Reconnaissance Reports. A Geotechnical Reconnaissance Report means a study of geologically hazardous areas where the qualified expert evaluates the hazard areas with a visual site reconnaissance. A subsurface investigation (i.e., borings, test pits, cone penetration tests) is not required. A reconnaissance level study is acceptable to evaluate erosion, volcanic and mine hazards, unless the qualified expert determines that a more thorough geotechnical investigation report is necessary. A geotechnical reconnaissance is not appropriate for evaluating landslide and seismic (i.e., liquefaction) hazards, unless compelling evidence can be provided by the qualified expert. Geotechnical Reconnaissance reports are required for all development within two hundred feet of slopes between 12% and 20%.

a. The geotechnical reconnaissance report shall be prepared, stamped, and signed by a licensed engineer or geologist. A geotechnical reconnaissance report shall typically include at a minimum the following:

i. A discussion of the surface and subsurface geologic conditions of the site;

ii. A site plan of the area delineating all areas of the site subject to landslide hazards based on mapping and criteria;

iii. A contour map of the proposed site, at a reasonable scale (not smaller than one-inch equals two hundred feet) which clearly delineates slopes for ranges between fifteen and twenty-nine percent and thirty percent and greater and includes figures for area coverage of each slope category on the site. If any springs or seeps are present, their location should be indicated on the map; and

iv. Evaluation of the ability of the site to accommodate the proposed activity.

b. The erosion hazard assessment of streams and hillsides shall typically include, at a minimum, the following:

i. An overview of existing channel characteristics and stream hydraulics at the subject property;

ii. An assessment of the probability for stream induced erosion to occur on the subject property and the estimated extent of the property that would be affected;

iii. A site map of the property, drawn to scale, delineating the relationship of the stream to the property, and existing erosion areas and/or potential erosion areas, and the proposed development, including structural dimensions;

iv. A cross-section map, drawn to scale and at five-foot contour intervals from the edge of the river's surface to the furthest landward boundary of the property, and including the proposed development; and

v. Evaluation of the ability of the site to accommodate the proposed activity.

c. In addition to the basic critical area report requirements, a critical area report for an erosion hazard or landslide hazard area associated with hillsides shall include the following information at a minimum:

i. The report shall include a copy of the site plan for the proposal showing:

ii. The height of slope, slope gradient, and cross-section of the project area;

iii. The location of springs, seeps, or other surface expressions of groundwater on or within two hundred feet of the project area or that have potential to be affected by the proposal. A distance of two hundred feet is suggested so that geological features that might affect the proposal are included in the critical area report. It may be necessary to include features further than two hundred feet from the project area in some instances, such as a series of related geological features that extend more than two hundred feet; and

iv. The location and description of surface water runoff.

17.26.090 Critical aquifer recharge areas.

A. Classification—Critical Aquifer Recharge Areas.

1. For the purposes of this classification, the critical aquifer recharge areas are determined by the combined effects of soil types and hydrogeology. (Critical Aquifer Recharge Map, Cowlitz-Wahkiakum Council of Governments, 1993).

2. High Susceptibility. Areas, identified on the aquifer recharge map, with a very high susceptibility to contamination of the underlying aquifer due to high soil permeability and high water table.

B. Regulated Activities. The following activities are regulated in critical aquifer recharge areas:

1. Aboveground and Underground Storage Tanks and Vaults. Aboveground or underground storage tanks or vaults for the storage of hazardous substances or dangerous wastes as defined in Chapter 173-303 WAC, Dangerous Waste Regulations, or any other substances, solids, or liquids in quantities identified by the county health department, consistent with Chapter 173-303 WAC, as a risk to groundwater quality shall conform to the Uniform Fire Code, Chapter 173-360 WAC, and underground storage tank regulations.

2. Utility Transmission Facilities. Utility facilities that carry liquid petroleum products or any other hazardous substance as defined in Chapter 173-303 WAC.

3. Land Divisions. Subdivisions, short subdivisions and other divisions of land will be evaluated for their impact on groundwater quality within the aquifer recharge areas. The following measures may be required:

a. An analysis of the potential contaminate loading;

b. Alternative site designs, phased development and/or groundwater quality monitoring;

c. Open spaces within development proposals; and/or

d. Community/public water systems and community drainfields.

C. Hydrogeologic Testing and Site Evaluation.

1. Hydrogeologic testing and site evaluation may be required for any regulated activity. If federal or state regulations require hydrogeologic testing, the city may waive the requirement for additional testing; provided, the city has adequate factual information to evaluate the proposal.

2. Development that may negatively impact the quality of critical aquifer recharge areas shall be prohibited unless the hydrogeologic testing and site evaluation satisfactorily demonstrate that significant adverse impacts will be mitigated.

D. If hydrogeologic testing and site evaluation are required, they shall be conducted by a qualified expert and typically include at least the following. Technical justification shall be provided where the qualified expert does not deem any information applicable.

1. A characterization of the site and its relationship to the aquifer and evaluation of the ability of the site to accommodate the proposed activity.

2. A discussion of the effects of the proposed project on groundwater quality and quantity.

3. Recommendations on appropriate mitigation, if any, to assure that there shall be no significant degradation of groundwater quality or quantity.

4. In addition, the testing and evaluation must include, but not be limited to, an analysis of:

a. Geologic setting and soils information of site and surrounding area.

b. Water quality data, including pH, temperature, conductivity, nitrates, and bacteria.

c. Location and depth to perched water tables.

d. Recharge potential of facility site (permeability/transmissivity).

e. Local groundwater flow, direction and gradient.

f. Surface water locations within one thousand feet of the site. (Ord. 3889 § 3 (Exh. A), 2017)