

**CITY OF EDGEWOOD
COUNCIL STUDY SESSION AGENDA**

Tues., December 5, 2017 – 7:00 PM ♦ City Hall – 2224 104th Avenue East ♦ Edgewood, WA

1. CALL TO ORDER

Pledge of Allegiance & Roll Call

2. PRESENTATION

Century Link

3. COUNCIL BUSINESS

- A. Discussion (no material)* - Utility Tax
- B. Review/Discussion* - Ordinance – 2018 Final Budget
- C. Review/Discussion* - Ordinance – 2017 Budget Amendment
- D. Review/Discussion* - Ordinance – Proposed Amendments to PRDs
- E. Review/Discussion* - Resolution – SmartGov Contract
- F. Review/Discussion* - Ordinance – Critical Areas

4. OTHER COUNCIL ITEMS

5. ADJOURN

Study Sessions are meetings for Council to review upcoming and pertinent business of the City, no action is taken by the City Council. Study Sessions are open to the public, but public input is reserved for the regular Council meetings

CITY OF EDGEWOOD

STAFF REPORT

STUDY SESSION AGENDA ITEM: 2018 Final Budget Ordinance

Date: December 05, 2017

Title: 2018 Final Budget Ordinance

Attachments: 17-0XXX 2018 Final Budget Ordinance with Attachment “A”.

Submitted By: Dave Gray-Assistant City Administrator

Approved For Agenda By: Daryl Eiding, Mayor

Discussion: The attached ordinance adopts the 2018 Budget for the City of Edgewood. In addition, the attached ordinance establishes the approved salary range for all approved position for the 2018 Fiscal Year. The 2018 Budget Process began with a Strategic Planning meeting held January 29th and a Budget Retreat September 16th. Two public hearings to consider the 2018 proposed budget were held on November 14th, and November 28th, 2017. Any public comments are memorialized in the meeting minutes. Council has reviewed the estimated year-end fund balances for 2017 as well as the forecast 2018 revenues, in particular increases and decreases from those of the 2017 budget, as well as reviewed the impact of the proposed 2018 Labor model and Expenditures by Fund, including an in-depth Law Enforcement Service Level and Cost review, in Study Sessions on August 29th, October 3rd, November 7th and 21st and tonight, December 5th. Appropriate adjustments were made to the budget to reflect these discussions with the attached 2018 Proposed Budget Ordinance attached the final result.

Recommendation: Request the Mayor brings the 2018 Final Budget Ordinance to the December 12th Regular Council Meeting for Council Action.

Fiscal Impact: Total budget for all funds is \$16,833,668 with the general fund being \$5,950,609. It should be noted the total budget appropriation dollar amounts include both revenues received by the City as income, and revenues transferred between income receiving funds and expenditure appropriation funds. Those transfer funds inflate the income budget by \$1,409,737. In addition, the Sewer Fund Local Improvement District No. 1, Fund 411 & 412 serve as pass-through revenue and expenditure funds administered by the City to collect and service parcel owner assessments and the associated long term debt. That revenue inflates the City income totals by \$1, 361,195 for fiscal year 2018. The City Ordinance for Fiscal Year 2018 Budget Appropriation includes all available funds including beginning fund balances estimated to be \$6,555,239 on December 31, 2017, which includes the LID fund.

ORDINANCE NO. 17-0XXX

**AN ORDINANCE OF THE CITY OF EDGEWOOD,
WASHINGTON, ADOPTING THE BUDGET AND
SALARY SCHEDULE FOR THE 2018 FISCAL YEAR**

WHEREAS State law, Chapter 35A.33 RCW, requires the City of Edgewood adopt an annual budget and provides procedures for such; and

WHEREAS a preliminary budget for the fiscal year 2018 has been prepared and filed in the Office of the City Clerk for the City of Edgewood; and

WHEREAS the City Council of the City of Edgewood held public hearings on November 14th and November 28, 2017 regarding the proposed budget and revenues and has deliberated and made adjustments and changes deemed necessary and proper;

**NOW THEREFORE THE CITY COUNCIL OF THE CITY OF EDGEWOOD,
WASHINGTON, DOES ORDAIN AS FOLLOWS:**

Section1. 2018 Budget Adoption and Funds Appropriated. The 2018 Annual Budget for the City of Edgewood, Washington, on file in the Office of the City Clerk, covering the period of January 1, 2018 through December 31, 2018, with regular revenues and unencumbered fund balances of \$14,341,129 and expenditures and ending fund balances of \$14,341,129, is hereby approved and adopted. The respective amounts for the several funds of the City of Edgewood are hereby fixed and adopted as follows:

General Fund (001)	\$ 5,950,609
Street Fund (101)	708,713
Strategic Reserve Fund (105)	1,013,740
Park Impact Fee Fund (110)	1,731,989
Traffic Mitigation Impact Fund (111)	1,660,699
Municipal Capital Reserve – REET1 Fund (130)	457,454
Municipal Capital Reserve – REET2 Fund (132)	527,637
Civic Center Bond Fund (201)	492,000
Capital Parks Fund (310)	204,908
Capital Roads Fund (340)	741,652
Capital Roads TIB Fund (350)	1,811
Sewer Utility Fund (401)	110,000
Surface Water Fund (410)	995,452
Temporary LID Fund (411)	1,523,743
LID Bond Reserve Fund (412)	472,464
ER&R Fund (501)	240,798
Total	<u>\$16,833,669</u>

Section 2. 2017 Salary Schedule. The 2018 Salary Schedule for authorized positions, attached hereto as Exhibit A of this Ordinance, is hereby adopted by reference.

Section 3. Transmittal. The City Clerk is hereby authorized and directed to transmit a certified copy of this ordinance to the Association of Washington Cities, the Auditor of the State of Washington, and Municipal Research Services Center.

Section 4. Severability. Should any section, paragraph, sentence, clause, or phrase of this ordinance, or its application to any person or circumstance, be declared unconstitutional or otherwise invalid for any reason, or should any portion of this ordinance be preempted by state or federal law or regulation, such decision or preemption shall not affect the validity of the remaining portions of this ordinance or its application to other persons or circumstances.

Section 5. Effective Date. A summary of this ordinance shall be published in the official newspaper of the City and this ordinance shall take effect and be in full force five (5) days after the date of publication.

**Presented to Council for First Reading on November 14, 2017
Presented to Council for Second Reading on November 28, 2017**

**ADOPTED BY THE CITY COUNCIL OF THE CITY OF EDGEWOOD THIS 12th DAY
OF DECEMBER, 2017.**

SIGNED BY:

Mayor Daryl Eiding

ATTEST/AUTHENTICATED:

City Clerk Rachel Pitzel

APPROVED AS TO FORM:

City Attorney Carol Morris

Date of Publication: *December XX, 2017*

Effective Date: *December XX, 2017*

EXHIBIT "A"						
2018						
CITY OF EDGEWOOD						
SALARY RANGE PLAN						
ORDINANCE 17-XXXX						
		2.5% Increase Over 2017				
FULL TIME CLASSIFICATIONS:		2018 Monthly Wage Range				
	Job Title	Step 1	Step 2	Step 3	Step 4	Step 5
FT-17-01	Administrative Assistant	\$3,503	\$3,762	\$4,020	\$4,278	\$4,536
FT-17-02	Communications Coordinator	\$3,957	\$4,257	\$4,556	\$4,856	\$5,155
FT-17-02	Permit Coordinator	\$3,957	\$4,257	\$4,556	\$4,856	\$5,155
FT-17-02	Public Works Maintenance Tech	\$3,957	\$4,257	\$4,556	\$4,856	\$5,155
FT-17-02	Accounting Tech	\$3,957	\$4,257	\$4,556	\$4,856	\$5,155
FT-17-03	Public Works Maintenance Tech II	\$4,039	\$4,301	\$4,563	\$4,824	\$5,086
FT-17-05	Planning Technician	\$4,265	\$4,563	\$4,862	\$5,160	\$5,459
FT-17-06	Combination Inspector	\$4,701	\$4,976	\$5,251	\$5,526	\$6,266
FT-17-07	Engineering Tech	\$4,735	\$5,031	\$5,326	\$5,622	\$5,918
FT-17-08	Accounting Manager	\$4,844	\$5,234	\$5,623	\$6,013	\$6,403
FT-17-08	Associate Planner/Code Enforcement	\$4,844	\$5,234	\$5,623	\$6,013	\$6,403
FT-17-09	Building Official	\$5,404	\$5,863	\$6,322	\$6,781	\$7,376
FT-17-10	City Clerk	\$5,487	\$5,913	\$6,338	\$6,764	\$7,190
FT-17-11	Senior Planner	\$5,704	\$6,052	\$6,400	\$6,747	\$7,095
FT-17-12	Senior Engineer	\$6,499	\$6,857	\$7,216	\$7,575	\$7,933
FT-17-13	Public Works Superintendent	\$7,279	\$7,711	\$8,143	\$8,576	\$9,008
FT-17-14	Public Works Director, PE	\$7,737	\$8,121	\$8,505	\$8,889	\$9,273
FT-17-14	Community Development Director	\$7,737	\$8,121	\$8,505	\$8,889	\$9,273
FT-17-15	Assistant City Administrator	\$8,170	\$8,598	\$9,025	\$9,454	\$9,881
All Hourly Compensation Rates are based upon the Monthly Rate Divided by 173.33 Hours.						

**CITY OF EDGEWOOD
STAFF REPORT**

STUDY SESSION AGENDA ITEM: Amendment No. 1 to the 2017 Budget

Date: December 5, 2017

Title: Amendment No. 1 to the 2017 Budget

Attachments: Budget Amendment Ordinance with Exhibit A

Submitted By: Dave Gray, ACA/Finance Director

Approved For Agenda By: Daryl Eiding, Mayor

Discussion: We will walk through Exhibit A by line item. The largest dollar fluctuations to the original appropriated budget are to accommodate the swing from 2016 to 2017 for an end of year payment to the Jovita Wall Contractor before the Capital Roads fund received final Grant payment from WSDOT (interfund loan activity and grant receipt); and the large payment to USDA to reduce the outstanding debt due to significant pre payments of individual LID assessments. In addition the general fund expenditures were increase to accommodate the Councils decision to increase the police presence by adding an investigator in July and an increase in on-call professional service for planning and inspection, offset by increases in plan review and inspection fees.

Recommendation: Recommend the Mayor move Budget Amendment No.1 to the Regular Council Meeting on December 12th for Council Action.

Fiscal Impact: A net increase in General Fund Balance of \$321,076.13; a net increase in Capital Roads Fund Balance of \$15,164.34; a net decrease in the Surface Water Fund Balance of \$40,113.13; a zero LID NO. 1 Fund Balance impact (pass through of revenue to debt reduction).

ORDINANCE NO. 17-0XXX

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, AMENDING THE BUDGET FOR THE 2017 FISCAL YEAR, PROVIDING UPDATES TO THE APPROVED GENERAL FUND, CAPITAL ROADS, SURFACE WATER AND LID NO. 1 FUNDS, PROVIDING FOR SEVERABILITY AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, State law, Chapter 35A.33 RCW, requires the City of Edgewood adopt an annual budget and provides procedures for such; and

WHEREAS, the City of Edgewood established its 2017 Budget in Ordinance No. 16-0484; and

WHEREAS, the City Council desires to amend the 2017 Budget to reflect updated General Fund expenditures reducing the ending fund balance; the repayment of an unexpected interfund short term loan payment related to grant receipt timing; capital road expenditures related to an ice storm damage and state reimbursement grant; unexpected LID No. 1 sewer assessment prepayments and subsequent debt paydown affecting various ending fund balances; and

NOW THEREFORE THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, DOES ORDAIN AS FOLLOWS:

Section 1. Amending the 2017 General Fund Budget Expenditures & Revenue. The 2017 General Fund Budget is hereby amended to provide as set forth in Exhibit A, attached hereto and incorporated herein by reference as if set forth in full. The changes to the original General Fund Budget are: (i) for the addition of a Police Investigator for a half year; (ii) for unexpected damage to the Sally Port Door; (iii) an increase in On-Call Contract costs for professional services related to high volumes of plan review and building inspections beyond the capacity of City Staff; (iv) provide for the repayment of a short term interfund loan to the Capital Roads budget to accommodate a year end payment to the contractor in 2016 and grant revenue received in 2017, together with imputed interest.

Section 2. Amending the 2017 Capital Roads Budget Expenditures & Revenue. The 2017 Capital Roads Budget is hereby amended to provide as set forth in Exhibit A, attached hereto and incorporated herein by reference as if set forth in full. The changes to the original Capital Roads Budget are to: (i) add the expenditure to repay the General Fund a short term interfund loan to the Capital Roads budget to accommodate a year end payment to the Jovita Wall contractor in 2016 and grant revenue received in 2017, together with imputed interest; (ii) to provide for the receipt of the subsequent grant revenue received from WSDOT for the 2016 expenditure to the contractor.

Section 3. Amend the 2017 Surface Water Budget Expenditures & Revenue. The 2017 Surface Water Budget is hereby amended to provide as set forth in Exhibit A, attached hereto and incorporated herein by reference as if set forth in full. The changes to the original Capital Equipment Replacement Budget are to: (i) add expenditures for the unexpected repair of

damage caused by a severe ice storm, and a related Opportunity Fund Project Grant; (ii) the receipt of a Department of Ecology grant.

Section 4. Amend the 2017 LID NO. 1 Budget Expenditures & Revenue. The 2017 LID NO. 1 Budget is hereby amended to provide as set forth in Exhibit A, attached hereto and incorporated herein by reference as if set forth in full. The changes to the original Capital Equipment Replacement Budget are to: (i) increase the total fund expenditure for a pay down of the USDA outstanding debt in the amount of the subsequent increase in sewer assessment receipts as a result of individual parcel owners early payoffs.

Section 5. Direction to Staff: Staff is hereby authorized and instructed to make the necessary changes to the printed form of the 2017 Budget to reflect the above amendments and to make all necessary and appropriate line item entries and adjustments in order to reflect said amendments.

Section 6. Transmittal. The City Clerk is hereby authorized and directed to transmit a certified copy of this ordinance to the Association of Washington Cities, the Auditor of the State of Washington, and Municipal Research Services Center.

Section 7. Severability. Should any section, paragraph, sentence, clause, or phrase of this ordinance, or its application to any person or circumstance, be declared unconstitutional or otherwise invalid for any reason, or should any portion of this ordinance be preempted by state or federal law or regulation, such decision or preemption shall not affect the validity of the remaining portions of this ordinance or its application to other persons or circumstances.

Section 8. Effective Date. A summary of this ordinance shall be published in the official newspaper of the City and this ordinance shall take effect and be in full force five (5) days after the date of publication.

Section 9. Approval. Pursuant to RCW 35A.33.120, the City Council finds that this Ordinance is in the best interest of the City and has approved this Ordinance by a majority plus one of all members of Council.

Presented to Council for first reading and adoption on August 9, 2016

ADOPTED BY THE CITY COUNCIL OF THE CITY OF EDGEWOOD THIS 12TH DAY OF DECEMBER, 2017.

Mayor, Daryl Eidinger

Attest/Authenticated:

City Clerk, Rachel Pitzel, CMC

Approved As To Form:

December 2017

Fund Name/Department	Fund Number	Original Budget	Original Line Item	Description of Request	Line Item Added	Line Item Deleted	Amended Budget	Fund Balance Impact
General Fund Expenditures								
Police Services Contract Increase 1/2 Year Invest.	001	\$1,885,093.25	\$1,885,093.25	Increase cost for Investigator	\$75,521.75		\$1,960,615.00	\$75,521.75
Police Repair & Maintenance	001	\$1,885,093.25	\$1,885,093.25	Sally Port Door Repair (n/b)	\$4,094.83		\$1,964,709.83	\$4,094.83
Professional Svcs-Non Reimbursable	001	\$90,000.00	\$90,000.00	On-Call Planning/Inspect	\$175,000.00		\$175,000.00	\$85,000.00
General Fund Expenditures	001	\$1,885,093.25	\$1,885,093.25		\$79,616.58	\$0.00	\$1,964,709.83	\$79,616.58
General Fund Revenues								
Capital Roads (Interfund Loan Grant Timing)	001	\$0.00	\$0.00	WSDOT State Grant-Jovita Wall	\$400,000.00		\$400,000.00	\$400,000.00
Capital Roads Impuned Interest Expense	001	\$0.00	\$0.00	InterFund Loan Interest	\$692.71		\$692.71	\$692.71
General Fund Revenues	001	\$0.00	\$0.00		\$400,692.71	\$0.00	\$400,692.71	\$400,692.71
TOTAL GENERAL FUND BALANCE IMPACT	001						Net Increase to Fund Balance	\$321,076.13
Capital Roads Expenditures								
Genral Fund (Interfund Loan Grant Timing)	340	\$0.00	\$0.00	WSDOT State Grant-Jovita Wall	\$400,000.00		\$400,000.00	\$400,000.00
General Fund Impuned Interest Income	340	\$0.00	\$0.00	InterFund Loan Interest	\$692.71		\$692.71	\$692.71
Capital Roads Expenditures	340	\$0.00	\$0.00		\$400,692.71	\$0.00	\$400,692.71	\$400,692.71
Capital Roads Revenues								
WSDOT Grant Final Receipt	340	\$0.00	\$0.00	WSDOT State Grant-Jovita Wall	\$415,857.05		\$415,857.05	\$415,857.05
Capital Roads Fund Revenue	340	\$0.00	\$0.00		\$400,692.71	\$0.00	\$415,857.05	\$415,857.05
TOTAL CAPITAL ROADS FUND BALANCE IMPACT	340						Net Increase to Fund Balance	\$15,164.34
Surface Water Fund Expenditure								
PC Road Repair due to Snow/Ice Impact	410		\$0.00	Road Bed Damage	\$76,074.48		\$76,074.48	\$76,074.48
Surface Water Fund Expenditure	410	\$0.00	\$0.00		\$76,074.48	\$0.00	\$76,074.48	\$76,074.48
Surface Water Revenues								
Surface Water-Dept. of Ecology Grant Received	410	\$0.00	\$0.00	Ecology Grant	\$25,000.00	\$0.00	\$25,000.00	\$25,000.00
Surface Water-Opportunity Fund Project Grant	410	\$0.00	\$0.00	Ice Storm Damage Grant	\$10,961.35	\$0.00	\$10,961.35	\$10,961.35
Surface Water Fund Expenditure	401	\$0.00	\$0.00		\$35,961.35	\$0.00	\$35,961.35	\$35,961.35
TOTAL SURFACE WATER FUND BALANCE IMPACT	410						Net Decrease to Fund Balance	\$40,113.13
LID NO. 1 Fund Expenditures								
LID NO. 1 USDA Loan Paydown	411	\$1,330,600.76	\$1,330,600.76		\$3,445,123.20	\$0.00	\$4,775,723.96	\$3,445,123.20
LID NO. 1 Fund Expenditures	411	\$1,330,600.76	\$1,330,600.76		\$3,445,123.20	\$0.00	\$4,775,723.96	\$3,445,123.20
LID NO. 1 Revenues								
LID NO. 1 Parcel Assessment Payoffs	411	\$1,330,600.76	\$1,330,600.76		\$3,445,123.20	\$0.00	\$4,775,723.96	\$3,445,123.20
TOTAL LID NO. 1 FUND BALANCE IMPACT	411						ZERO Net Fund Balance Impact	\$0.00

CITY OF EDGEWOOD

STAFF REPORT

STUDY SESSION AGENDA ITEM: Proposed PRD Amendments

Date: December 5, 2017

Title: Proposed PRD Amendments

Attachments:
1) PRD Draft Code_ Repeal of EMC 18.50.095
2) Summary of Previous PRDs

Submitted By: Darren Groth, Community Development Director

Approved For Agenda by: Daryl Eidinger, Mayor

Discussion

On March 12, 2014, the City Council adopted Ordinance Number 14-0416 adding a new section to the Edgewood Municipal Code (EMC) as Section 18.50.095 – Planned Residential Developments (PRD). A PRD permits an increase in density when compensating factors for open space and other specific amenities within a development as outlined within this chapter are provided. The PRD's purpose was to create open space in residential developments and to encourage innovative site and building design by permitting greater flexibility in zoning requirements than would otherwise be permitted by this title. Per EMS Section 18.50.095, a PRD must:

1. Promote the retention of significant features of the natural environment, including without limitation waterways and views;
2. Encourage a variety of housing types in relation to the city's existing housing stock;
3. Encourage maximum efficiency in the layout of streets, utility networks and other public improvements; and
4. Create and/or preserve usable open space for the enjoyment of the occupants and the general public.

If the proposal conforms to the four requirements listed above, that a PRD can be requested on certain properties in order to increase the density allowed in the underlying zoning classification. In exchange for the increase in density, the developer must provide the City with some benefit that would not otherwise be required under the City's codes for the project, such as open space. These criteria for the 50 percent increase are extremely subjective and do not address the negative consequences associated with increased density.

On July 11, 2017, the City Council adopted Ordinance No. 17-504, which imposed a moratorium on the submission of all new PRD applications. The moratorium allowed the City to review the merits of the PRD code. Staff researched City visioning document, e.g., Edgewood Municipal Code, Comprehensive Plan, 2001 Final EIS for Comp Plan; the basis and support used to craft the PRD code; the three adopted PRD projects; and codes from other municipalities. The Comp Plan and EIS do not address ways to increase density, which appears problematic on the surface. Dually zoned properties are allowed PRD densities without Comp Plan amendments or rezoning actions. Since 2007 (Ord. No. 07-288), the City has allowed residential cluster development (RCD) to reduce the buildable lot size requirements in various zoning districts as a vehicle to preserve large areas of open land and protect environmentally sensitive areas.

A specifically identified problem with the City's PRD code is that the Examiner makes a recommendation on the PRD to the City Council and the Council makes the final decision. The City's procedures for processing a preliminary plat, however, require that the Examiner make the final decision, which is appealable to the City Council. If these two applications must be processed simultaneously, the Examiner cannot make a final decision on one and not the other. Either the Examiner makes a recommendation on both and the Council makes the final decision or the Examiner makes the final decision on both and both are appealable to the City Council. These concerns, in addition to the subjective criteria and staff's research, serve as the basis for the staff's recommendation to repeal EMS Section 18.50.095.

The recommendation to repeal the existing EMC Section 18.50.095 is encouraged to be the starting point for a comprehensive review of the City's zoning and density codes. As a point of comparison, various municipalities were compared in the table below to represent the variety of residential zoning district densities allowed in neighboring cities. In addition to residentially zoned property, Edgewood's use tables also permit residential uses in various other zoning districts, e.g., Business Park (BP), Town Center (TC), Commercial (C), and Mixed-Use Residential (MUR).

	Residential Zoning District Density				
	Lowest				Highest
Edgewood	2	3	5	4	8
Milton	5.45	N/A	18	18	18
Fife	4	7	10	10	14
Puyallup	1	4	5	6	8
Bonney Lake	0.2	5	9	min 10	20

The goals of each zoning district can quickly become compromised if dense residential uses are the primary development. As an example, the BP district accommodates a wide range of employment and commercial uses, including professional office, senior housing and apartments, light industrial and retail uses. Development standards seek to accommodate a wide range of business, while ensuring an urban design that is compatible with adjacent zones. Significant landscaping is emphasized in this zone, both for aesthetic appeal and as a tool to ensure greater compatibility between a wide range of uses. The BP vision, however, is difficult to achieve if the developable land is utilized for multi-family residential uses. The larger conversation would enable the City to end the moratorium, review zoning densities, address the goals in the Comprehensive Plan to match density and use distribution goals, and perform the environmental analysis associated with increases in density.

Recommendation: Forward the proposed code modifications, in Ordinance form, to City Council for adoption.

Fiscal Impact: N/A

Chapter 18.50.095 – *Repealed.*
~~PLANNED RESIDENTIAL DEVELOPMENT (PRD)~~

~~18.50.095 Planned residential developments.~~

~~A. A planned residential development (PRD) permits an increase in density when compensating factors for open space and other specific amenities within a development as outlined within this chapter are provided. It is the purpose of this chapter to create open space in residential developments and to encourage innovative site and building design by permitting greater flexibility in zoning requirements than would otherwise be permitted by this title.~~

~~In addition to the other criteria set forth in this chapter, a PRD must:~~

- ~~1. Promote the retention of significant features of the natural environment, including without limitation waterways and views;~~
- ~~2. Encourage a variety of housing types in relation to the city's existing housing stock;~~
- ~~3. Encourage maximum efficiency in the layout of streets, utility networks and other public improvements; and~~
- ~~4. Create and/or preserve usable open space for the enjoyment of the occupants and the general public.~~

~~There is no entitlement to approval of a PRD. A PRD applicant bears the exclusive burden of demonstrating to the city's satisfaction that all applicable approval criteria have been met.~~

~~B. A PRD may be permitted in the following districts:~~

- ~~1. SF-5, Single-Family High Density;~~
- ~~2. MR-1, Mixed Residential Low Density;~~
- ~~3. MR-2, Mixed Residential Moderate Density;~~
- ~~4. Any split-zoned parcel greater than three acres where residential uses are allowed in both zones.~~

~~C. The following uses are allowed in planned residential developments:~~

- ~~1. Within the SF-5 zone, all uses allowed per EMC 18.80.040(B)(1) and (B)(2), and development of all types regardless of the type of building in which such residence is located, such as single-family residences, manufactured homes and single-family attached residences.~~
- ~~2. Within the MR-1 or MR-2 zones, all uses as allowed per EMC 18.80.050, and residential development of all types regardless of the type of building in which such residence is located, such as single-family residences, manufactured homes, duplexes, triplexes, fourplexes, townhouses, condominiums or apartments. Hotels, motels and mobile home parks are excluded.~~

~~3. Within split-zoned parcels, uses and development types that are allowed within both of the implicated zones.~~

~~D. Any use not listed under the permitted principal or accessory uses for the underlying zone is prohibited within a PRD unless expressly authorized in EMC 18.80.040 or 18.80.050.~~

~~E. The design and layout of a PRD shall positively accentuate and harmonize the relationship of the site to the surrounding zones and existing uses. The perimeter of the PRD shall be so designed as to minimize undesirable impacts of the PRD on adjacent properties. To satisfy the requirements of this subsection, a PRD design shall:~~

- ~~1. Incorporate zone transition features and/or buffers by utilizing a stepped approach to site planning under which higher intensity uses are located farther away from adjacent zones containing lower density;~~
- ~~2. Incorporate buffers such as landscaping features, open space and/or fencing between adjacent single family or commercial zones; and~~
- ~~3. Incorporate roadways and site improvements to enhance site planning.~~

~~F. Perimeter setbacks from the external property line of the PRD shall be comparable to those of the existing development of adjacent properties or, if adjacent properties are undeveloped, the type of development which may be permitted in the underlying zone of the adjacent area.~~

~~G. Acreage Minimum. The minimum acreage for a PRD located within a split-zoned site shall be three acres. The minimum acreage for all other PRDs shall be two acres.~~

~~H. Open Space. Each PRD shall provide a substantial portion of the total site area for common open space which shall be:~~

- ~~1. Concentrated in large usable areas and designed to provide either passive or active recreation; and~~
- ~~2. Either (a) held in common ownership by all the owners of the development by means of a homeowners' or similar association, which shall be responsible for maintenance of the common open space; or (b) dedicated for public use, if acceptable to the city.~~

~~The amount and specific location of the open space required for each PRD shall be determined by the city on a project specific basis through an individualized determination that considers:~~

- ~~1. The total number of residential units within the PRD;~~
- ~~2. The estimated number of residents within the PRD;~~
- ~~3. The extent to which the PRD has exceeded the otherwise applicable density standards of the underlying zone;~~

- ~~4. The proximity of the PRD to existing open space areas within city;~~
- ~~5. The underlying topography and site planning features of the PRD; and~~
- ~~6. Any other relevant factors, including without limitation the anticipated impacts of the proposed development.~~

~~Without prejudice to the foregoing, it is the express intent of this chapter that at least 20 percent of the gross site area of a PRD be utilized for open space.~~

~~I. Off-Street Parking. Off-street parking shall be provided within a PRD in accordance with the underlying zoning regulations for type of buildings and uses proposed.~~

~~J. Density Standards. A PRD can be utilized in order to increase the allowable residential density (or shift the overall density within a split-zoned parcel) from the underlying zone. A PRD may be used to adjust both maximum and minimum densities as follows:~~

- ~~1. A density increase of up to 20 percent greater than permitted by the underlying zone is permissible provided that the minimum requirements of this chapter are met. A maximum density increase of up to 50 percent greater than the underlying zone may be authorized where the PRD satisfies at least five of the following criteria:~~
 - ~~a. A variety of housing types are provided within the PRD;~~
 - ~~b. Subject to subsection (H) of this section, open space/greenbelts are preserved and/or provided within the PRD at no less than 150 percent of the minimum requirements otherwise required by the EMC;~~
 - ~~c. Unusual or significant site features such as views, waterways or other natural characteristics are preserved and/or incorporated into the project design;~~
 - ~~d. The PRD design advances and effectuates the land use policies of the comprehensive plan beyond the minimum requirements of the EMC;~~
 - ~~e. The PRD design incorporates significant physical and visual buffers and/or development transitions between zoning districts and adjacent neighborhoods/uses, including landscaping features, open spaces, or fencing;~~
 - ~~f. Public benefits are derived in exchange for the increased density in the planned residential development. Public benefits may include, but are not limited to:~~
 - ~~i. Publicly accessible active parks and walking trails within the development that connect to public streets, schools and daycares above and beyond the requirements outlined within the EMC; or~~
 - ~~ii. Provisions for a publicly accessible community meeting hall within the overall plan of the development.~~

~~2. Combined Density Allowed. PRDs are also encouraged to support meaningful and consistent neighborhood planning on large parcels with more than one zoning designation. In addition to~~

~~the density allowances provided above, a PRD may also be utilized to provide a modified density for projects proposed on split-zoned parcels greater than three acres; provided, that the total number of residential units within the PRD shall not exceed 80 percent of the total density of the underlying zones combined.~~

~~K. Contents of PRD Application. In addition to the application materials required in accordance with Chapter 18.40 EMC, the following information is required for review of a planned residential development:~~

- ~~1. Vicinity map showing the location of the site and its relationship to surrounding areas, including the land use and zoning of both the site and the surrounding areas.~~
- ~~2. A map of the site drawn to a scale of not less than one inch representing 100 feet showing the following:~~
 - ~~a. Existing site conditions including watercourses, floodplains and unique natural features;~~
 - ~~b. The location and floor area size of all existing and proposed buildings, structures and other improvements including maximum heights, types of dwelling units, density per type, and nonresidential structures, including commercial facilities, if any;~~
 - ~~c. The location and size in acres or square feet of all areas to be conveyed, dedicated, or reserved as common open spaces, public parks, recreational areas, and similar public or semipublic uses;~~
 - ~~d. The existing and proposed circulation system of streets, including off-street parking areas, service areas, loading areas and major points of access to public rights-of-way;~~
 - ~~e. The existing and proposed pedestrian circulation system;~~
 - ~~f. The existing and proposed utility systems, including sanitary sewers, storm sewers, water, electric, gas and telephone; and~~
 - ~~g. The proposed treatment of the perimeter of the PRD, including materials and techniques used such as screens, fences and walls.~~
- ~~3. In addition to the graphic illustrations listed in subsections (K)(1) and (2) of this section, the applicant shall submit a written statement providing the following information:~~
 - ~~a. Justification for the density bonus or adjustment, if requested by the applicant;~~
 - ~~b. Program for development including staging or timing of development;~~
 - ~~c. Proposed ownership pattern upon completion of the project;~~
 - ~~d. Basic content and summary of any restrictive covenants; and~~
 - ~~e. Provisions to assure permanence and maintenance of common open space through a homeowners' association or similar association, condominium development or other means acceptable to the city.~~
- ~~4. An application for preliminary plat or other development approval may be submitted with the PRD application, if necessary. Fees and submittal documents for a subdivision shall be in~~

~~accordance with Chapter 16.04 EMC and are required in addition to those of the PRD application.~~

~~L.—Filing of PRD Application. Application for approval of the PRD shall be made on forms prescribed by the department of community development and which shall be accompanied by a submittal fee. The application fee shall be the same as for a developer agreement in the city's adopted fee schedule.~~

~~M.—Hearing Examiner Public Hearing. The hearing examiner shall hold an open record public hearing for each application.~~

~~N.—Hearing Examiner Recommendation. Following the public hearing, the hearing examiner shall draft a recommendation and report of his/her findings with respect to the proposed PRD. The recommendation and report shall include, but need not be limited to, the following items:~~

- ~~1.—Suitability of the site area for the proposed development;~~
- ~~2.—Requirements of the subdivision code, if applicable, for the proposed development;~~
- ~~3.—Reasons for density bonuses or adjustments;~~
- ~~4.—Any recommended mitigation measures and conditions of approval, including without limitation the amount and location of open space areas;~~
- ~~5.—Time limitations for the entire development and specified stages;~~
- ~~6.—Development in accordance with the Edgewood comprehensive plan; and~~
- ~~7.—Public purposes that have been served by the proposed development.~~

~~O.—City Council Review and Decision. The city council shall consider the hearing examiner's report and recommendation in a closed record review proceeding without additional testimony or evidence. At the conclusion of the closed record review, the city council shall issue a final written decision approving or denying the proposed PRD. The city council may adopt the hearing examiner's findings and/or enter its own findings in support of the council's decision. The city council's decision shall be appealable to the Pierce County superior court in accordance with the standards and procedures set forth in Chapter 36.70C RCW. (Ord. 14-416 § 2 (Exh. A)).~~

Summary of Domus Homes PRD 2016 Project Application

File Number: 16-5633

On September 23, 2016, a third PRD application submitted for Domus Homes under file number 16-5633.

- Request was to construct 55 single-family attached dwelling units on 5.38 acres within the Commercial (C) and Mixed Residential Two (MR2) zoning districts. The development includes one commercial lot, a park/stormwater tract, and wetland tract.
- Density was not the reason for this PRD. The request was intended to shift the overall density within a split-zoned parcel(s). The effective result, however, was a rezone of the MR2 property without a Comprehensive Plan amendment and subsequent zoning change.
- Maximum development would have allowed approximately 140 units, if the PRD would have satisfied at least five of the following criteria:
 1. A variety of housing types are provided within the PRD;
 2. Subject to subsection (H) of this section, open space/greenbelts are preserved and/or provided within the PRD at no less than 150 percent of the minimum requirements otherwise required by the EMC;
 3. Unusual or significant site features such as views, waterways or other natural characteristics are preserved and/or incorporated into the project design;
 4. The PRD design advances and effectuates the land use policies of the comprehensive plan beyond the minimum requirements of the EMC;
 5. The PRD design incorporates significant physical and visual buffers and/or development transitions between zoning districts and adjacent neighborhoods/uses, including landscaping features, open spaces, or fencing;
 6. Public benefits are derived in exchange for the increased density in the planned residential development. Public benefits may include, but are not limited to:
 - Publicly accessible active parks and walking trails within the development that connect to public streets, schools and daycares above and beyond the requirements outlined within the EMC; or
 - Provisions for a publicly accessible community meeting hall within the overall plan of the development.
- Neither the staff report nor the Hearing Examiner's decision make any mention of whether the application meets at least five of the criteria. The subjective nature of the ordinance requirements are difficult to objectively measure.
- The request was found to comply with the mixed-use requirements of the Commercial zoning district by accommodating residential use only if part of a mixed-use project. The determination was made that a commercial percentage per EMC 18.80.080 Table 2, Footnote 1 was required and the required 10 percent was provided.

Summary of Edgewood Heights PRD 2015 Project Application

File Number: 5212

On October 26, 2015, a second PRD application was submitted for Edgewood Heights under file number 5212.

- Request was to 452 multi-family dwellings and 855 parking spaces on 21.36 acres within the Town Center (TC) and Mixed Residential-Two (MR-2) zones.
- The project was built in two phases; with the apartments and recreation on the west portion built with some or all of the site work in Phase I. Phase II will encompass the rest of the apartments and community buildings on the east portion.
- PRD density is calculated for split-zoned parcels as 80 percent of the combined total allowed in the underlying zones. The density in the underlying zones is 86 dwelling units for the MR2 zone and 508 dwelling units within TC, resulting in a maximum allowed density of 475 units.
- The TC is envisioned as the most walkable area of the city, with a mix of multi-story and single-story buildings framing the street and other public spaces. The TC zone accommodates a range of uses emphasizing a variety of vertical and horizontal mixed use development, pedestrian-oriented retail, multifamily residential, senior housing and civic uses. The TC zone complements local traffic, bicycle, and pedestrian circulation and provides open space connectivity.
- Residential single-use project proposals within the TC, and C zones on combined project areas three acres or larger, shall set back single-use residential structures 150 feet from an arterial ROW line. The setback area shall develop, at minimum, 30 percent of the area into retail- or office-type commercial uses or preserved for future retail- or office-type uses. The remaining area within the first 150 feet from an arterial ROW may be developed into residential uses.
- Predicted benefits to the City, only four noted in Hearing Examiners findings (five required per EMC Section 18.50.095.J.1 for 50 percent density increase):
 1. Open space provided in the form of tree preservation at 32.4 percent of the site. Open space had to meet 1.5 percent of the gross floor area of all structures for TC zoning. Plus in order to achieve the 50 percent density increase, no less than 150 percent of the required open space was required—which equates to 2.25 percent of the gross floor area of all structures. Calculations appear to indicate that required tree preservation area and landscape buffers were counted towards the open space requirements.
 2. The multi-family complex will provide a variety of housing types in relation to the City's existing housing stock, which is primarily single-family. The mix of housing, however, is required to be located within the PRD when requesting a 50 percent density increase.
 3. The project provides maximum efficiency in the layout of streets, utility networks, and other public improvements. This predicted benefit may be a high quality benchmark, but it is not currently one of the ordinance prescribed criteria to increase density.
 4. The project preserves usable open space by providing landscape buffers and tree retention.

**Summary of Arbors at Edgewood PRD
2014 Project Application**

File Number: 4772

On July 7, 2014, first PRD application submitted for Arbors at Edgewood under file number 4772

- Request was to construct 90 multi-family dwellings within the Mixed Residential-Two (MR2) Zone.
- The entire multi-family residential project consisted of 130 new multi-family dwelling units within the Town Center (TC) and Mixed Residential-Two (MR2) Zones. Only 90 of those dwelling units required PRD approval because they were located in the MR2 Zone. The remaining 40 units are within the TC zone and adhered to the TC density standards. Without the PRD, the project was limited to 60 dwelling units.
- The proposal also included the installation of new public and private roadways, stormwater facilities, parking and various amenities.
- In order for a PRD density increase to be approved the applicant shall satisfy at least five (5) of the following criteria:
 1. A variety of housing types are provided within the PRD;
 2. Subject to subsection (H) of this section, open space/greenbelts are preserved and/or provided within the PRD at no less than 150 percent of the minimum requirements otherwise required by the EMC;
 3. Unusual or significant site features such as views, waterways or other natural characteristics are preserved and/or incorporated into the project design;
 4. The PRD design advances and effectuates the land use policies of the comprehensive plan beyond the minimum requirements of the EMC;
 5. The PRD design incorporates significant physical and visual buffers and/or development transitions between zoning districts and adjacent neighborhoods/uses, including landscaping features, open spaces, or fencing;
 6. Public benefits are derived in exchange for the increased density in the planned residential development. Public benefits may include, but are not limited to:
 - Publicly accessible active parks and walking trails within the development that connect to public streets, schools and daycares above and beyond the requirements outlined within the EMC; or
 - Provisions for a publicly accessible community meeting hall within the overall plan of the development.
- The written staff report for this project shows that the applicant demonstrated that five criteria from above have been incorporated into the PRD plan by providing from above;
 - o 2) open space and greenbelts exceeding 50 percent of the total site area within the PRD (approximately 3.85 acres of the 7.53 total acres);
 - o 3) preservation of the majority of the steep slopes and native vegetation in the southeast portion of the project area;
 - o 4) the PRD design effectuates the goals and policies of the Comprehensive Plan through Land Use Goal LU-I and associated Policies LU1, LU2, LU5, LU6 and LU10; through Goal

LU-III and associated Policies LU15, LU16 and LU18; through Goal LU V and associated policies LU25, LU27 and LU28;

- o 5) by incorporating natural vegetative buffers to separate land uses adjacent to the project on the south and east sides of the PRD; and
- o 6) by providing and dedicating in the future publicly-accessible streets by constructing a portion of the parallel road system and associated sidewalks to connect into the City's parallel road at 22nd Street East and by providing a publicly-accessible trail down the access road to the eastern edge of the project in the development.
- As subjective criteria, several questions may still remain regarding the project.
 - o Can the same area count for benefits 2 and 5?
 - o In what specific ways does an increase in density effectuates the stated goals and policies of the Comprehensive Plan listed in item 4?
 - *Land Use Goal LU-I: Establish a future land use pattern that is consistent with the City's vision*
 - *Land Use Goal LU-III: Promote development that respects and preserves the natural environment. [LU.III.a – provide design flexibility to encourage the preservation and integration of existing natural site features]*



CITY OF EDGEWOOD

STAFF REPORT

STUDY SESSION AGENDA ITEM: SMARTGOV Contract

Date: December 5, 2017

Title: SMARTGOV Contract

Attachments:

- 1) Citizen Portal and Online Payments Quote
- 2) Digital Plan Review (EPC) Quote
- 3) Initial Implementation Costs Table
- 4) Draft Resolution

Submitted By: Darren Groth, Community Development Director

Approved For Agenda by: Daryl Eidinger, Mayor

Discussion

The City of Edgewood currently utilizes SMARTGOV permitting software to consolidate all permit types into a single automated database. The use of SMARTGOV's software is limited to internal customers only due to the fact the City did not purchase the public portal with the initial investment.

One of the two quotes presented today would create a public portal, which is a web site that brings together permit applications, public notices, maps, and payments in one publicly viewable information hub. The public portal for permitting services is an essential part of creating transparency and efficiency in any development agency. The portal allows citizens to access development plans for their neighborhood instantly and easily, provides self-serve information available 24/7 on the web with less impact to staff hours, and shifts the manual application and tracking processes to a point where they are initiated and managed online.

With the public portal, anyone can access application and updates in one place – staff, field agents, inspectors, property owners, contractors or neighbors. Citizens will be able to clearly see and understand what is happening in their neighborhoods, give feedback, and share information in a simple, easy-to-use format. In addition, with the recent authorization of AWC's GIS services, SMARTGOV's Public Portal will enable the City to create GIS-integrated maps that let users browse through projects and information in a visual, easy-to-find format that shows clear geographic context for development.

The second quote for the digital plan review system (E-PlanCheck) would enable digital drawings, images, and document files to be submitted electronically online. Once project plan content is uploaded, then City staff members can simultaneously review the electronic documents. The current paper applications require staff time to assemble; input; route; track;

share; and physically review, comment, and approve. The E-PlanCheck software will deliver better service by reducing review time, help accelerate economic growth, and eliminate the inefficiency of paper movement and storage. The City's permitting process will be streamlined, making it fast and easy to submit, review documents and drawings, process corrections, and monitor and improve the work processes.

The electronic plan review can be linked with the ability of the City's field inspectors to download or electronically view the plans in the field, which will allow quicker completion of the field inspection and issuance of the inspection report to the contractor. In addition, the comments and status will be available online for applicants to quickly check the progress of a project without having to call, email, or visit City Hall.

Recommendation: Bring this Resolution forward for Council adoption.

Fiscal Impact:

	Year 1	Recurring
Citizen Portal	\$10,630	\$2,625
E-PlanCheck	\$13,820	\$8,400
Hardware	\$4,200	\$0
Total	\$28,650	\$11,025

better service by reducing review time, help accelerate economic growth, and eliminate the inefficiency of paper movement and storage. The City's permitting process will be streamlined, making it fast and easy to submit, review documents and drawings, process corrections, and monitor and improve the work processes.

The electronic plan review can be linked with the ability of the City's field inspectors to download or electronically view the plans in the field, which will allow quicker completion of the field inspection and issuance of the inspection report to the contractor. In addition, the comments and status will be available online for applicants to quickly check the progress of a project without having to call, email, or visit City Hall.

Recommendation: Bring this Resolution forward for Council adoption.

Fiscal Impact:

	Year 1	Recurring
Citizen Portal	\$10,630	\$2,625
E-PlanCheck	\$13,820	\$8,400
Hardware	\$4,200	\$0
Total	\$28,650	\$11,025

RESOLUTION NO. 17-

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY
OF EDGEWOOD, PIERCE COUNTY, WASHINGTON
AUTHORIZING THE MAYOR TO EXECUTE A
CONTRACT FOR SERVICES WITH PALADIN DATA
SYSTEMS CORPORATION.**

WHEREAS, Paladin Data Systems Corporation currently provides internal permit tracking software called SMARTGOV to the City of Edgewood; and

WHEREAS, the SMARTGOV system is capable of providing additional services that are not currently utilized by the City of Edgewood; and

WHEREAS, Paladin Data Systems Corporation can provide and implement public portal and digital plan review products to streamline processing and tracking or project permit applications; and

WHEREAS, the digital plan review product is known as e-PlanCheck; and

WHEREAS, the e-PlanCheck application enables digital drawings, images, and document files to be submitted electronically online and subsequently reviewed and shared; and

WHEREAS, expanding the City's SMARTGOV investment will streamline permitting processes and identify more efficient ways to deliver quality customer service;

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EDGEWOOD,
WASHINGTON, DOES RESOLVE AS FOLLOWS:**

Section 1. The Mayor is hereby authorized to execute an agreement for services from Paladin Data Systems Corporation in an initial amount of \$24,450 and an annual recurring cost of \$11,025.

**PASSED BY THE CITY COUNCIL OF THE CITY OF EDGEWOOD,
WASHINGTON, AT A REGULAR MEETING THEREOF, THIS ____ DAY OF
_____, 2017.**

Daryl Eidinger, Mayor

ATTEST:

Rachel Pitzel, City Clerk

10/27/2017

Sales Order: **2157**

City of Edgewood
Attn: Darren Groth
2224 104th Ave. E.
Edgewood, WA 98372

Dear Darren,

Paladin Data Systems Corporation (Paladin) applauds your decision to invest in affordable innovation for your organization. We'll be with you every step of the way to ensure a successful and smooth transition to the SMARTGOV suite.

Quantity	Units	Item	Term	Amount
1	Site	SMARTGOV Citizen Portal	Subscription	\$2,625.00
1	Site	SG Merchant Services Connector with PayGov	One Time	\$5,000.00
8	Hour	SG Configuration	Professional Services	\$1,280.00
8	Hour	SG Onsite Training	Professional Services	\$1,600.00
1	Site	Travel & Expenses (estimate only)	Travel	\$125.00

Total Investment = \$10,630.00

Total Annual Renewal: \$2,625.00

Terms of Service:

- Offered pricing on this Sales Order is valid if signed by 12/31/2017.
- Subscription and One Time fees, not including services, are billed upon signing this Sales Order.
- Professional Services **are estimates only and will not be exceeded without your approval.** Professional Services are billed monthly on a time & materials basis.
- This Sales Order is governed by the existing terms and conditions already executed between Paladin and Edgewood, City of, WA.

Thanks for your order and your trust in SMARTGOV to help you save money, increase efficiency, and raise customer service levels. We truly look forward to serving you and your community.

Sincerely,

Mikaela Basile

Yes! I accept these terms; let's get started today!

Authorized Signature and Title at Edgewood, City of, WA

Date

10/31/2017

Sales Order: **2162**

City of Edgewood
Attn: Darren Groth
2224 104th Ave. E.
Edgewood, WA 98372

Dear Darren,

Paladin Data Systems Corporation (Paladin) applauds your decision to invest in affordable innovation for your organization. We'll be with you every step of the way to ensure a successful and smooth transition to the SMARTGOV suite.

Quantity	Units	Item	Term	Amount
6	User	SG E-PlanCheck Digital Plan Review	Subscription	\$8,400.00
1	Pack	E-PlanCheck Implementation: -SMARTGOV Connector -Configuration -Documentation -Up to 8 hours of web-based training	One Time	\$5,420.00

Total Investment = \$13,820.00

Total Annual Renewal: \$8,400.00

Terms of Service:

- Offered pricing on this Sales Order is valid if signed by 11/30/2017.
- Subscription and One Time fees, not including services, are billed upon signing this Sales Order.
- Professional Services **are estimates only and will not be exceeded without your approval.** Professional Services are billed monthly on a time & materials basis.
- This Sales Order is governed by the existing terms and conditions already executed between Paladin and Edgewood, City of, WA.

Thanks for your order and your trust in SMARTGOV to help you save money, increase efficiency, and raise customer service levels. We truly look forward to serving you and your community.

Sincerely,

Mikaela Basile

Yes! I accept these terms; let's get started today!

Authorized Signature and Title at Edgewood, City of, WA

Date

SMARTGOV

Initial Purchase and Implementation

(Year 1 Costs)

Item	Purpose	Cost
Citizen Portal	Allows internet-based information sharing through SMARTGov system	\$2,625
PayGov Connector	Enables the SMARTGov project tracking software to integrate payments into the City's accounting software in one step	\$5,000
Configuration	One-time fee to set up SMARTGov at the City	\$1,280
Training	On-site training provided by SMARTGov	\$1,600
Travel	Reimbursement for SMARTGov to train and configure at City Hall	\$125
E-PlanCheck	Digital Plan Review program to allow online application submittals, electronic plan review, and web-based comment distribution	\$8,400
E-PlanCheck Implementation	Integrates E-PlanCheck into SMARTGov, configures system at the City, and trains staff to use the new programs	\$5,420
Computer	Repurposed machine for B.O.'s plan review work station	\$100
Computer	Repurposed machine for Maple Conference Room to allow plan viewing during meetings	\$100
TV/Monitor	New 50" screen for B.O.'s plan review work station	\$750
TV/Monitor	New 50" screen for Maple Conference Room	\$750
TV Mount	For B.O.'s plan review work station	\$1,000
TV Mount	For Maple Conference Room	\$1,000
TV/Monitor	New 32" screen for CD Director to consolidate two screens into one (screens will be distributed to Permit & Planning Techs)	\$500

Total \$28,650

CITY OF EDGEWOOD

STAFF REPORT

STUDY SESSION AGENDA ITEM: Critical Areas Ordinance Code Revisions

Date: December 5, 2017

Title: Critical Areas Ordinance Code Revisions

Attachments:

- 1) CAO Draft Code
- 2) City Ordinance Draft
- 3) Master Builders Association Comment Letter

Submitted By: Darren Groth, Community Development Director

Approved For Agenda by: Daryl Eidinger, Mayor

Discussion

On September 21, 2017, the Planning Commission (PC) recommended APPROVAL of the drafted code amendment to the City's Critical Areas Ordinance (CAO). City staff incorporated the PC comments and refined the CAO draft for discussion during the October 17, 2017 City Council meeting. The attached draft incorporates the discussion points raised by City Council and the City's Attorney since the October 17, 2017 meeting. On November 7, 2017, City Council held a Study Session discussion for the proposed CAO code revisions. City Council was informed that the outstanding comments pertaining to the structure outline of the CAO, such as numbering and cross references, will be incorporated into the final ordinance. One item of particular interest during the Study Session was the proposed amendments to the wetland buffer setbacks. On November 14, 2017, City Council held a public hearing and gathered public input on the proposed changes. In addition, the Master Builders Association of Pierce County provided City Council with written comments on November 22.

Recommendation: Forward the proposed code modifications, in Ordinance form, to City Council for adoption.

Fiscal Impact: N/A

Title 14

CRITICAL AREAS

Chapters:

- 14.10 General Provisions
- 14.~~15~~~~20~~30 Definitions
- 14.~~20~~~~30~~ Use and Activity Regulations
- 14.~~30~~~~40~~ Wetlands
- 14.~~40~~~~50~~ Critical Fish and Wildlife Habitat Areas
- 14.~~50~~~~60~~ Aquifer Recharge and Wellhead Protection Areas
- 14.~~60~~~~70~~ Volcanic Hazard Areas
- 14.~~70~~~~80~~ Flood Hazard Areas
- 14.~~80~~~~90~~ Landslide Hazard Areas
- 14.~~90~~100 Seismic (Earthquake) Hazard Areas
- 14.110 Erosion Hazard Areas
- 14.~~50~~~~100~~120 Natural Resource Lands

Chapter 14.10

GENERAL PROVISIONS

Sections:

14.10.010	Authority.
14.10.030020	Purpose.
14.10.040030	Interpretation.
14.10.050040	Applicability.
14.10.070050	Administration.
14.10.075060	Relationship to Other Regulations.
14.10.080070	Critical area protective measures.
14.10.082080	Critical areas reports
14.10.083090	Mitigation plans
14.10.085100	Variances to critical areas.
14.10.090110	Reconsideration and appeal procedures.
14.10.100120	Fees.
14.10.110130	Compliance.
14.10.120140	Warning and disclaimer of liability.
14.10.130150	Severability.
14.10.135160	Violation – Civil infraction.
14.10.140170	Appendix.

14.10.010 Authority.

A. This title is established and adopted pursuant to the Growth Management Act (RCW 36.70A.060).

B. As provided herein, the director or his/her designee is given the authority to interpret and apply, and the responsibility to enforce this title to accomplish ~~the purposes~~ [the purposes](#) identified in EMC 14.10.030.

14.10.0320 Purpose.

The purpose of this title is to protect environmentally sensitive critical areas of Edgewood from the impacts of development and protect development from the impacts of hazard areas by establishing minimum standards for development of sites which contain or are adjacent to identified critical areas and thus promote the public health, safety, and welfare by:

- A. Avoiding impacts to critical areas;
- B. Mitigating unavoidable impacts by regulating development;
- C. Protecting critical areas from impacts of development;
- D. Protecting the public against losses from:
 - 1. Costs of public emergency rescue and relief operations where the causes are avoidable; and
 - 2. Degradation of the natural environment and the expense associated with repair or replacement;
- E. Preventing adverse impacts on water availability, water quality, wetlands, and streams;
- F. Protecting unique, fragile, and valuable elements of the environment, including critical fish and wildlife habitat;
- G. Providing department staff with sufficient information to adequately protect critical areas and proposed development when approving, conditioning, or denying public or private development proposals;
- H. Providing the public with sufficient information and notice of potential risks associated with development in natural hazard critical areas; and

I. Implementing the goals and requirements of the Growth Management Act (RCW 36.70A.060) and the city of Edgewood comprehensive plan, and all updates and amendments, functional plans, and other land use policies formally adopted or accepted by the city of Edgewood.

14.10.0430 Interpretation.

In the interpretation and application of this title, all provisions shall be:

- A. Considered the minimum necessary;
- B. Liberally construed to serve the purposes of this title; and
- C. Deemed neither to limit nor repeal any other powers under state statute. (Ord. 02-200 § 2).

14.10.0540 Applicability.

A. This title shall apply to all lands and waters within Edgewood that are designated as critical areas and their corresponding buffers and setbacks.

B. No development (see “development” definition) shall hereafter take place without full compliance with the terms of this title.

C. When the requirements of this title are more stringent than those of other Edgewood codes and regulations, including the International Building Code, the requirements of this title shall apply.

D. Compliance with these regulations does not remove an applicant’s obligation to comply with applicable provisions of any other federal, state, or local law or regulation.

E. Criteria for determining critical areas is contained within each chapter of this title.

F. When a site contains two or more critical areas, the site shall meet the minimum standards and requirements for each identified critical area as set forth in this title.

G. Critical areas, as defined and regulated by this title, are identified, but not limited to the following Edgewood critical areas maps:

1. Wetlands;
2. Geologically hazardous areas;
3. Critical aquifer recharge areas;
4. Streams; and
5. Frequently flooded areas.

H. The exact boundary of each critical area depicted on the City’s critical areas maps is approximate and is only intended to provide an indication of the presence of a critical area on a particular site. Additional critical areas that have not been mapped may be present on a site. The actual presence of a critical area, or areas and the applicability of these regulations shall be determined based upon the classification or categorization criteria and review procedures established for each critical area. City staff and/or consultant(s) may conduct on-site inspections to assess the site in order to determine if additional studies or reports identified in this title are necessary. An inspection report of findings shall be written after the on-site inspection and will become a part of any site development application as a future reference.

I. The Edgewood critical areas atlas maps shall be updated and maintained by the city’s department of community development geospatial information system (GIS) division.

14.10.0750 Administration.

A. Approvals Required. An approval must be obtained from the city when the department determines that the site or project area is or may be located within 300 feet of a critical area, as set forth in each chapter.

B. Application Requirements.

1. Preliminary Review. The provisions for conducting a preliminary review of an application is set forth in EMC 18.40.070, Process types.

2. Application Filing.

a. Applications shall be reviewed for completeness in accordance with department submittal standards checklists and pursuant to EMC 18.40.150, Determination of completeness or as outlined within section c. below.

b. Applications and associated reports shall not be submitted without an accompanying permit application for an underlying action, such as, but not limited to, a building permit, subdivision or boundary alteration action, site development application, TPCHD permit, or use permit, with the exception of applications required by the department as a result of an enforcement action or reports required by TPCHD for septic design approval.

c. In cases where no accompany permit applications are required for potentially regulated activities within a critical area, a separate critical areas permit application shall be filed and include the following items in order to be deemed a complete application:

i. A completed Critical Area Permit Application;

ii. Submittal and review criteria and standards of this title, as outlined within each section of the specific critical area potentially being impacted;

iii. Associated Critical Area Permit Fee, as outlined within EMC 14.10.100.

iv. Review for a Critical Area Permit shall follow a Type II Process, as outlined within EMC 18.40.0980.

3. Modifications. The department may request an update of any required assessment, report, delineation, etc., due to the potential for change in the existing environment that may have been caused by a natural event (e.g., seismic event, landslides, flooding, etc.) or human induced activity that degraded the existing conditions that occurred after the original document was initially submitted.

C. Public Notice. Public notice provisions for notice of application; public hearing, if applicable; and final decision pursuant to this title are outlined in EMC 18.40.190, Notice of public hearing.

D. Review.

1. Initial Review. The department shall conduct an initial review of any application in accordance with the provisions outlined in EMC 18.40.150, Determination of completeness.

2. Review Responsibilities.

a. The department is responsible for administration, circulation, and review of any applications and approvals required by this title.

b. The City Council shall be the decision authority for reasonable use applications.

c. Other city or county departments and state agencies, as determined by the department, may review an application and forward their respective recommendations to the director or hearing examiner, as appropriate.

3. Review Process.

a. The department shall perform a critical area review for any building or land use application submitted for a regulated activity, including, but not limited to, those set forth in EMC 14.20.020. Reviews for multiple critical areas shall occur concurrently.

b. The department shall, to the extent reasonable, consolidate the processing of related aspects of other city regulatory programs which affect activities in regulated critical areas, such as subdivision or site development, with the approval process established herein so as to provide a timely and coordinated review process.

c. As part of the initial review of all development or related approvals or permit applications, the department shall review the information submitted by the applicant to:

i. Confirm the nature and type of the critical area and evaluate any required assessments, reports, or studies;

ii. Determine whether the development proposal is consistent with this title;

iii. Determine whether any proposed alterations to the site containing critical areas are necessary; and

iv. Determine if the mitigation and monitoring plans proposed by the applicant are sufficient to protect the public health, safety, and welfare consistent with the goals, purposes, objectives, and requirements of this title.

d. Regulated activities subject to SEPA shall also be reviewed with consideration for impacts on critical areas as identified in this title. Regulated activities that pose a significant adverse impact which are not addressed by the standards and criteria established in this title (gaps), may be subject to additional mitigation measures as determined through the SEPA process. A threshold determination issued pursuant to EMC Title 20, SEPA, may not be made prior to departmental review of any special studies or technical reports required by this title, except where the applicant requests a declaration of significance so that environmental review is required.

d. Critical area applications required under this title shall be approved prior to approval of any underlying permit action such as, but not limited to, a building permit, subdivision approval, site development forest practice application, or identified use permit.

e. The requirement to submit a critical area assessment, report, etc., required under this title, outlined within each critical area heading herein, may be waived at the department's discretion when the proposed project area for a regulated activity is located in an area that has been the subject of a previously submitted and approved assessment, report, etc., if all of the following conditions have been met:

i. The provisions of this title have been previously addressed as part of another approval;

ii. There has been no material change in the potential impact to the critical area or required buffer since the prior review;

iii. There is no new information available that is applicable to any critical review of the site or particular critical area;

iv. The permit or approval has not expired or, if there is no expiration date, no more than five years have elapsed since the issuance of that permit or approval; and

v. Compliance with any standards or conditions placed upon the prior permit or approval has been achieved or secured.

4. Burden of Proof. The applicant has the burden of proving that a proposed application complies with the standards set forth in this title.

5. Final Decision.

a. The department may approve, approve with conditions, or deny ~~any critical~~ any critical areas application or underlying application for development in a critical area in order to comply with the requirements and carry out the goals, purposes, objectives, and requirements of this title based on the decision-makers' evaluation of the ability of any proposed mitigation measures to reduce risks associated with the critical area and compliance with required standards. Approval of a development proposal does not discharge the obligation of the applicant to comply with the provisions of this title.

b. Applicants shall comply with the recommendations and/or mitigation measures contained in final approved assessments or reports and any final decision and conditions of approval.

c. Approval of an application required under this title must be given prior to the start of any development activity on a site.

6. Time Period for Final Decision. The provisions for issuing a notice of final decision on any application filed pursuant to this title is set forth in EMC 18.40.040, Coordination of development permit procedures.

E. Time Limitations.

1. Expiration of Approval.

a. Approvals granted under this title shall be valid for the same time period as the underlying permit (e.g., preliminary plat, site development, building permit). If the underlying permit does not contain a specified expiration date, then approvals granted under this title shall be valid for a period of three years from the date of issue, unless a longer or shorter period is specified in the final decision.

b. The approval shall be considered null and void upon expiration, unless a time extension is requested and granted as set forth in subsection (E)(2) of this section.

2. Time Extensions.

a. The applicant or owner(s) may request in writing a one-time, one-year extension of the original approval upon demonstrating to the Director that circumstances beyond the control of the Applicant dictated the need for the extension.

b. Knowledge of the expiration date and initiation of a request for a time extension is the responsibility of the applicant or owner(s).

c. A written request for a time extension shall be filed with the department at least 60 days prior to the expiration of the approval.

d. Upon filing of a written request for a time extension, a copy shall be sent to each party of record together with governmental departments or agencies that were involved in the original approval process. By letter, the department shall request written comments be delivered to the department within 30 days of the date of the letter.

e. Prior to the granting of a time extension, the department may require a new application(s), updated study(ies), and fee(s) if:

i. The original intent of the approval is altered or enlarged by the renewal;

ii. The circumstances relevant to the review and issuance of the original approval have changed substantially; or

iii. The applicant failed to abide by the terms of the original approval.

f. If approved, the one-year time extension shall be calculated from the date of granting said approval.

F. Recording.

1. Approvals.

a. Critical area regulation approvals are to be recorded on the title of the project parcel(s) at the Pierce County auditor's office by City of Edgewood Staff prior to issuance and at the sole expense of Applicant. Also refer to EMC 14.10.080(F), Title and Land Division Notification, for additional recording requirements.

b. Recording of a wetland approval for work completed within utility line easements on lands not owned by the jurisdiction conducting the regulated activity shall be required.

2. Right of Entry Agreement. The city may require the applicant to record a right of entry agreement, which shall be consistent with a format approved by the department. The right of entry agreement shall:

a. Allow the department and agents of the department to access the site for purposes of inspection during the course of application review, construction, and post-construction monitoring.

b. Allow the department and agents of the department to enter a property to construct required improvements, mitigation measures, or monitoring that have been financially guaranteed.

c. Run with the land, and be binding on all parties having or acquiring any right, title, interest, or any part thereof of the site, including the grantor, heirs, successors, and assigns. (Ord. 02-200 § 2).

14.10.07560 Relationship to Other Regulations

A. This title shall apply as an overlay and in addition to zoning and other regulations adopted by the City.

B. These critical areas regulations shall apply concurrently with review conducted under SEPA, as adopted under Chapter EMC 20.05.

C. Compliance with the provisions of this title does not constitute compliance with other federal, state, and local regulations and permit requirements that may be required (for example, Hydraulic Permit Act [HPA] permits, Section 106 of the National Historic Preservation Act, U.S. Army Corps of Engineers Section 404 permits, National Pollution Discharge Elimination System permits). The applicant is responsible for complying with these requirements, apart from the process established in this title.

D. Regulated activities that may impact critical areas and/or their buffers, but do not require any other City permits or approvals, may be reviewed as a critical areas permit, as outlined within EMC 14.10.070 (c).

14.10.0870 Critical area protective measures.

A. General. All critical area tracts, conservation easements, land trust dedications, and other similarly preserved areas shall remain undeveloped in perpetuity, except as they may be allowed to be altered pursuant to this title.

B. Mitigation Sequence. Adverse impacts caused by new activities and developments shall be mitigated using the following action in order of priority:

1. Avoiding the impact altogether by not taking a certain action or parts of an action;
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts;
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
4. Reducing or eliminating the impact over time by preservation and maintenance operations;
5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and

6. Monitoring the impact and the compensation project and taking appropriate corrective measures.

C. Identification of Critical Areas and Required Buffers on Construction Plans. Critical areas and required buffers shall be clearly identified on all construction plans such as, but not limited to, site development plans, residential building plans, commercial building plans, forest harvest plans, etc.

D. Building Setbacks.

1. Unless otherwise provided in this title, buildings and other structures shall be set back a distance of 15 feet from the edge of all critical area buffers or, where no buffers are required, the edge of the critical area.
2. The following uses and activities may be allowed in the building setback area:
 - a. Landscaping;
 - b. Uncovered decks;
 - c. Building overhangs if such overhangs do not extend more than 18 inches into the setback area;
 - d. Impervious ground surfaces, such as driveways, parking lots, roads, walkways, and patios; provided, that such improvements conform to the water quality standards set forth in the city's adopted stormwater management manual and that construction equipment does not enter the buffer during the construction process; and
 - e. Clearing and grading. (Ord. 02-200 § 2).
 - f. All others are prohibited.

E. Financial Guarantees.

1. The city may require an applicant to submit one or more financial guarantees to the city, as set forth in each chapter of this title (and other titles of Edgewood's Municipal Code as required), to guarantee any performance, mitigation, maintenance, or monitoring required as a condition of permit approval. The approval for the project will not be granted until the financial guarantee is received by the department. Projects where the city or one of its departments is the applicant shall not be required to post a financial guarantee.
2. Financial guarantee instruments required under this title shall be:
 - a. In addition to any other site development guarantees required for project approval;
 - b. Submitted on financial guarantee forms approved by the city;
 - c. In the amount of 125 percent of the City Engineer's estimate of the cost of mitigation or monitoring to allow for inflation and administration should the city have to complete the mitigation or monitoring, unless the provisions set forth in subsection (B)(2)(D) of this section are applicable; and
 - d. Released by the city only when the applicant's appropriate technical professional has provided written confirmation that the performance, mitigation, or monitoring requirements have been met and department staff, or agent, inspected the site(s) for compliance.
3. Failure to complete any performance, mitigation, or monitoring may result in the forfeiture or release of the guarantee. Applicants who have previously defaulted will no longer be allowed to post a "bond" guarantee for improvements necessary for approval of a land use application. Applicants who have previously defaulted will be allowed to post cash guarantees for subsequent critical area mitigation work needed for approval of a land use application or permit, but the guarantee must be by cash guarantee only.

F. Title and Land Division Notification.

1. General.

- a. Title and/or land division notice shall be required to be recorded with the Pierce County auditor on each site that contains a critical area, prior to approval of any regulated activity on a site.
- b. If more than one critical area subject to the provisions of this title exists on the site, then one notice which addresses all of the critical areas shall be sufficient.
- c. Title and land division notifications and notes shall be approved by the department and shall be consistent with EMC 14.10.140, Appendix A.

2. Title Notification.

- a. When the city determines that regulated activities not exempt from this title are proposed, the property owner shall file a notice with the Pierce County auditor. The notice shall provide a public record of the presence of a critical area and associated buffer, if applicable; the application of this title to the property; and that limitations on actions in or affecting such critical area and associated buffer, if applicable, may exist.
- b. The notice shall be notarized and shall be recorded by the City at the applicant's cost with the Pierce County auditor at the time of, but prior to approval of any regulated use or activity for the site.
- c. Notice on title is not required for utility line easements on lands not owned by the jurisdiction conducting the regulated activity (e.g., gas pipelines).

3. Land Division Notification and Notes. As referenced in EMC 14.10.140, Appendix A there shall be notes included on the face of any final plat, final binding site plan, short plat, or boundary line adjustment that contain critical areas or critical area buffers. The critical area boundaries and the boundary of any associated buffers shall be identified on the face of these documents prior to submission to the City for approval.

G. Conservation Easements. Prior to any final critical area approval, the part of the critical area and required buffer which is located on the site shall be protected with a conservation easement or other similar permanent deed restriction. The conservation easement shall indicate allowable and prohibited uses within the critical area and required buffer.

H. Tracts. Prior to final approval of any subdivisions, short subdivisions, large lot divisions, or binding site plans, the part of the critical area and required buffer which is located on the site, shall be placed in a separate tract or tracts, and the face of the plat shall include the requirement that the owners of all lots shall be required to preserve, protect and maintain the critical areas...

I. Homeowner's Covenants. A description of the critical area and required buffer shall be placed in any required homeowner's covenants to provide notice to the Homeowners of their responsibility to preserve, protect and maintain the critical areas in perpetuity. Such covenants shall contain a detailed description of the allowable uses within the critical area and, if applicable, associated buffer and long-term management and maintenance requirements of that critical area.

J. Markers, Fencing, and Signage.

1. Markers. Prior to final approval of any critical area application, the outer edge of the critical area boundaries or, if applicable, required buffer boundaries on the site shall be flagged by the qualified professional, as outlined in each chapter. These boundaries shall then be identified with permanent markers (rebar and cap) and flagged by a licensed surveyor, unless otherwise stated in this title. The permanent markers shall be clearly visible, durable, and permanently affixed to the ground.

2. Fencing.

- a. Temporary Construction Fencing. Temporary fencing is required when vegetation is to be retained in an undisturbed condition within the critical area and required buffer. In such cases, the applicant will be required to construct silt fencing, construction fencing, or other city-approved method of temporary fencing

at the edge of the critical area or, if applicable, the edge of the required buffer prior to beginning construction on the site.

b. Permanent Fencing. Where deemed necessary by the department to provide protection to the critical area, the applicant will be required to construct permanent, wildlife-passable fencing along the buffer boundary.

3. Signage.

a. The department shall require permanent signage to be installed at the edge of the critical area or, if applicable, the edge of the required buffer.

b. The sign shall indicate the type of critical area and if the area is to remain in a natural condition as permanent open space.

c. Exact sign locations, wording, size, and design specifications shall be established by the department. Required signage shall be clearly visible, durable, and permanently affixed to the ground.

d. Prior to final approval of any critical area application, the applicant shall submit an affidavit of posting to the department as proof that the required signs were posted on the site.

14.120.0820 Critical areas reports

A. When required in accordance with this title, the applicant shall submit a critical areas report.

B. The critical areas report shall use scientifically valid methods and studies in the analysis of critical area data and field reconnaissance to evaluate the proposed development and all probable impacts to critical areas in accordance with the provisions of this title. The report shall reference the source(s) of science used in accordance with WAC 365-195-900 through WAC 365-195-925-925.

C. At a minimum the report shall contain the following:

1. The name and contact information of the applicant and a description of the proposal;
2. The site plan for the proposed development, including a map drawn to scale depicting critical areas, buffers, the proposed development, and any areas to be cleared or altered;
3. The date of the report and names and qualifications of the persons preparing the report;
4. Documentation of any fieldwork performed on the site;
5. Identification and characterization of all critical areas and buffers on and adjacent to the proposed development;
6. A statement specifying the accuracy of the report, and all assumptions made and relied upon;
7. A discussion of the performance standards applicable to the critical area and proposed development;
8. A mitigation plan in accordance with EMC 14.10.083 if mitigation is required; and
9. Any additional report information required for the critical area as specified in the following chapters.

14.120.08390 Mitigation plans

When mitigation is required, the applicant shall submit a mitigation plan. The mitigation plan shall include all of the following:

- A. Mitigation sequencing. A description of reasonable efforts made to apply mitigation sequencing pursuant to EMC 14.10.080(B) to avoid, minimize, and mitigate impacts to critical areas and buffers.

B. Mitigation details.

1. A description of the anticipated impacts to the critical area and buffer, including impacts to critical area functions and values;
2. The mitigating actions proposed, including: type of mitigation proposed (e.g., on-site or off-site); site selection criteria; identification of compensation goals; and identification of critical area functions.
3. The environmental goals and objectives of the mitigation, together with specific measurable criteria and performance standards for evaluating whether or not the goals and objectives of the mitigation project have been successfully attained;
4. A review of the best available science supporting the proposed mitigation; and
5. An analysis of the likelihood of success of the mitigation project.

C. Construction details. The mitigation plan shall include written specifications, descriptions, and drawings of the mitigation proposed, including:

1. Construction sequence, timing, and duration;
2. Grading and excavation details;
3. Erosion and sediment control features; and
4. Planting plan specifying plant species, quantities, locations, size, spacing, density, and measures to protect and maintain plants until established. All plant species must be native to the region.

D. Monitoring details.

1. A program for monitoring construction and assessing the outcome of the mitigation project, including the schedule for site monitoring (for example, monitoring shall occur in year 1, 3, and 5 after site construction), and how the monitoring data will be evaluated to determine if the performance standards are being met. Monitoring reports shall be submitted to document milestones, successes, problems, and contingency actions of the compensation project. The mitigation project shall be monitored for a period necessary to establish that performance standards have been met, but not for a period less than five (5) years. Mitigation monitoring shall be the responsibility of the applicant.
2. A contingency plan with courses of action and corrective measures to be taken if monitoring or evaluation indicates project performance standards are not being met.

E. Mitigation Cost Estimate. A Mitigation Cost Estimate for the entire compensatory mitigation project, per the requirements of EMC 14.10.080(E).

F. Other requirements. The mitigation plan shall address any additional mitigation requirements relevant to the specific critical area as specified in the following chapters.

14.10.085-100 Variances to critical areas.

A. General. Variances are reviewed pursuant to [permit type, outlined with Chapter 18.40, EMC, EMC-18.50.080, Variances.](#) Conditions may be attached to a critical area(s) variance, which will serve to meet the goals, objectives, and policies of this title.

B. Variance Criteria. A variance may be granted from the requirements of this chapter only if the decision maker makes written findings that the applicant has demonstrated that the requested action conforms to all of the criteria set forth as follows:

1. Special conditions and circumstances exist that are peculiar to the land, the lot, or something inherent in the land, and that are not applicable to other lands in the same district; and

2. The special conditions and circumstances do not result from the actions of the applicant; and

3. A literal interpretation of the provisions of this title would deprive the applicant of all reasonable economic uses and privileges permitted to other properties in the vicinity and zone of the subject property under the terms of this title, and the variance requested is the minimum necessary to provide the applicant with such rights; and

4. Granting the variance requested will not confer on the applicant any special privilege that is denied by this title to other lands, structures, or buildings under similar circumstances; and

5. The granting of the variance is consistent with the general purpose and intent of this title, and will not further degrade the functions or values of the associated critical areas or otherwise be materially detrimental to the public welfare or injurious to the property or improvements in the vicinity of the subject property; and

6. The decision to grant the variance ~~incorporates~~[incorporates](#) the best available science and gives special consideration to conservation or protection measures necessary to preserve or enhance anadromous fish habitat; and

7. The granting of the variance is consistent with the general purpose and intent of the Edgewood Comprehensive Plan and adopted development regulations.

C. Additional Criteria for Flood Hazard Area Variances. In addition to the variance criteria specified above in subsection (B) of this section, in order for the decisionmaker to approve a flood hazard variance, the decisionmaker must make written findings that the applicant has demonstrated, that the proposal satisfies all of the following:

1. Generally, the only condition under which a variance from the elevation standard may be issued is for new construction and substantial improvements to be erected on a small or irregularly shaped lot contiguous to and surrounded by lots with existing structures constructed below the base flood level. As the lot size increases the technical justification required for issuing the variance increases.

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

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

4. 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 that the hardship was not created by the applicant;

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.

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 flood elevations should be quite rare.

6. Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of flood proofing than watertight or dry-flood proofing, where it can be determined that such action will have low damage potential, complies with all other variance criteria (except 4.4-1), and otherwise complies with Sections 5.1-1, 5.1-3, and 5.1-4 of the General Standards.

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

D. Should a variance be denied, the applicant may submit an application for a ~~reasonable~~ use exception pursuant to EMC 14.20.050. (Ord. 17-492 § 2 (Exh. A); Ord. 02-200 § 2).

14.10.090110 Reconsideration and appeal procedures.

Procedures for appeal of a final decision on a critical areas permit, a decision relating to critical areas in the underlying permit, a critical areas variance or a critical areas flood hazard variance are set forth in ~~EMC 18.40~~.

14.10.100120 Fees.

Fees for applications and/or review of reports, studies, or plans filed pursuant to this title are set forth in the adopted fee schedule and as identified below:

A. Fee Establishment. The city, by resolution, shall establish fees for filing of critical area review processing and other services provided by the city as required by this title. These fees shall be based on the anticipated sum of direct costs incurred by the city for any individual development or action and may be established as a sliding scale that will recover all of the city costs. Basis for these fees shall include, but not be limited to, the cost of engineering and planning review time, cost of inspection time, costs for administration, and any other special costs attributable to the critical area review process.

B. Applicant Responsibilities. Unless otherwise indicated in this title, the applicant shall be responsible for the initiation, preparation, submission, and expense of all required reports, assessment(s), studies, plans, reconnaissance(s), peer review(s) by qualified consultants, and other work prepared in support of or necessary to review the application.

C. Fee Schedule. The director is charged with the responsibility of collecting appropriate fees charged to applicants for any permits or discretionary approval processes provided for in this title. The amount of the fees charged shall be as established by resolution or ordinance of the city council filed in the office of the city clerk and may be, from time to time, changed without amendment to this title.

D. Payment. Fees established in accordance with this title shall be paid upon submission of a signed application or petition for appeal, or as otherwise provided by any fee ordinance or resolution adopted by the city council. Where such an application will require substantial review time or expenditures, the mayor may, at his/her sole discretion, direct that the department initiating the permit request to reimburse the community development department for some or all of costs expended for the application review.

E. Investigation Fee. To investigate violations of this title, all city fees associated with investigation of violations of this title may be assessed at the adopted billable staff hour rate in addition to any required consultant costs, legal costs, and other expenses necessary to complete the investigation of the violation. The payment of such investigation fees shall not exempt any person from compliance with all other provisions of this title, nor from penalties prescribed by law.

14.10.1130 Compliance.

A. The regulations for compliance with the provisions of this title are set forth in EMC 18.30.040, Scope and compliance.

B. When a critical area or its required buffer has been altered in violation of this title, the department shall require the property owner to bring the site into compliance. The property owner shall be required to submit the appropriate critical area application and commence a departmental review, as applicable for each chapter of this title. In addition to any required site investigation, delineations, assessments, reports, etc., the property owner shall be required to submit a restoration plan that identifies the proposed mitigation to bring the subject property into compliance with the requirements of this title. (Ord. 02-200 § 2).

14.10.1240 Warning and disclaimer of liability.

The degree of protection required through application of this title is deemed to be reasonable for regulatory purposes and is based on best available science; however, natural events that may exceed the geographic boundaries regulated under this title can and will occur (e.g., flood heights that are higher than anticipated). This title does not mean to imply that land outside designated hazard areas or uses permitted within such areas will be free from damages.

The express purpose of this title is to provide for the health, safety and welfare of the general public, and not to protect individuals or create or otherwise establish or designate any particular class or group of persons who will or should be especially protected or benefitted by the terms of this title. The obligation of complying with the requirements of this title and the liability for failing to do so is hereby placed upon the property owner and/or persons responsible for the condition of the property, buildings or premises.

Nothing in this title is intended to be nor shall be construed to create or form the basis for any liability on the part of the City, its officers, officials, employees or agents, for any injury or damage resulting from the failure of the owner of property or land to comply with the provisions of this title or by reason or in consequence of any inspection, notice, order, certificate, permission or approval, authorized or issued or done in connection with the implementation or enforcement of this title, or by reason of any action or inaction on the part of the City, related in any manner to the enforcement of the title by its officers, officials, employees or agents.

14.10.1470 Appendix.

A. Title and Plat Notification Forms.

APPENDIX A

TITLE AND PLAT NOTIFICATION FORMS

A. Notice for Title Notification.

1. (Example: Appropriate Critical Area from EMC 14.10.030)

Tax Parcel Number:

Address:

Legal Description:

Present Owner:

NOTICE: This property contains (e.g., wetlands or wetland buffers) as defined by EMC 14.10.030. The site was the subject of a development proposal for _____ application number filed on _____ (date). Restrictions on use or alteration of the site may exist due to natural conditions of the property and resulting regulations. Review of such application has provided information on the location of the (e.g., wetland or wetland buffers) and any restriction on use.

Date Signature of owner

Notary acknowledgment and notary seal

B. Additional Title Notification Statements.

1. Title notification for liquefaction and dynamic settlement hazard areas shall include a statement of the performance criteria (i.e., protection of life safety only, provision for minimal structural damage so that post-earthquake functionality is substantially unchanged, no structural damage for the design earthquake).

2. Title notification for fault rupture hazard areas shall include a statement that a fault rupture hazard area or associated buffer exists on the site. The title notification shall include a site plan of the subject property with the fault rupture hazard area and associated buffer identified.

3. Properties that contain flood hazard areas pursuant to Chapter 14.70 EMC shall include the following statement:

Flood Elevation Certificates are kept on file by the department.

C. Notice for Plat Notification/Plat Notes.

1. General. The following notice shall be placed on the face of the final plat, short plat, large lot, or binding site plan documents when said subdivision contains critical areas or critical area buffers:

Notice: This site lies within a (e.g., landslide hazard area) as defined in EMC Title 14. Restrictions on use or alteration of the site may exist due to natural conditions of the site and resulting regulation.

2. Native Vegetation Preservation Areas. The following notice shall be placed on the face of the final plat, short plat, large lot, or binding site plan documents when said subdivision contains critical areas or critical area buffers and when said critical areas or critical area buffers have been identified as native/natural vegetation preservation areas.

Notice: The Critical Areas appearing on this (final site plan/preliminary plat/final plat/short plat/large lot/engineering drawing) contain areas of native vegetation intended to buffer the Critical Area from the adverse effects of development. These Critical Areas shall remain and be maintained in a natural, undeveloped, open space state. There shall be no clearing, grading, filling, or construction within the Critical Areas, except as shown on plans or documents approved by the City of Edgewood and contained in the official files for this development. Each Critical Area shall remain undisturbed except for periodic watering and hand weeding of plants designated as noxious by the State of Washington.

3. Plat Notes for Flood Hazard Areas. The following notes shall be placed on the face of any of final plat, short plat, large lot, or binding site plan documents which lie within a flood hazard area.

a. Grading, clearing, and/or filling within the limits of the 100-year floodplain is prohibited except for watercourse related construction, repair, and/or maintenance work that is done by the city for management operations.

b. If a higher frequency event occurs or if existing conditions upon which the flood hazard area boundaries were based were to change or occur differently than depicted, then the level of protection afforded by the existing levee, if applicable, and flood hazard area standards may not be adequate to prevent the subject site from flooding.

c. All purchasers and developers (and/or their agents) of property within the subject development area and/or parcel shall take notice of the above conditions and hereby agree to defend, indemnify, and hold harmless Edgewood from any and all claims, losses, costs, liabilities, or damages of any nature imposed upon or asserted against Edgewood arising out of or caused by the city's issuance of approval or by issuance of any other permits arising out of this approval.

d. All occupants and/or owners of property in the subject area assume the risk of flooding which may occur and waive any claims against Edgewood arising out of damage or injury to person or property resulting therefrom. (Ord. 17-492 § 2 (Exh. A); Ord. 16-461 § 3; Ord. 02-200 § 2).

Chapter 14.1520

DEFINITIONS

This title shall rely on the definitions contained in Chapter 18.20 EMC, Definitions. The city also adopts by reference the definitions stated in WAC 197-11-700 through 197-11-799 as now or hereafter amended. Additional definitions that apply to this title are:

“Abutting” means bordering upon, to touch upon, in physical contact with. Sites are considered abutting even though the area of contact may be only a point.

“Activity” means any use conducted on a site.

“Addition” means an alteration to an existing structure that increases the floor area. There are two types of additions: additions affixed to the side of an existing structure and an upper story addition.

“Agricultural activities” means the production of crops and/or raising or keeping livestock, including operation and maintenance of farm and stock ponds, drainage ditches, irrigation systems, and normal operation, maintenance, and repair of existing serviceable agricultural structures, facilities, or improved areas, and the practice of aquaculture. Activities which bring an area into agricultural use are not part of an ongoing activity. An operation ceases to be ongoing when the area in which it was conducted is proposed for conversion to a non-agricultural use or has lain idle for a period of longer than five (5) years, unless the idle land is registered in a federal or state soils conversation program. Forest practices regulated under Chapter 76.09 RCW and WAC Title 222 are not included in this definition.

“Agricultural land” means land primarily devoted to the commercial production of horticultural, viticultural, floricultural, dairy, apiary, vegetable, or animal products or of berries, grain, hay, straw, turf, seed, Christmas trees not subject to the excise tax imposed by RCW 84.33.100 through 84.33.140, finfish in upland hatcheries, or livestock, and that has long-term commercial significance for agricultural production.

“Animal containment area” means a site where two or more animal units of large animals per acre or 0.75 of an animal unit of small animals per acre are kept, and where a high volume of waste material is deposited in quantities capable of impacting groundwater resources.

“Animal unit” means the equivalent of 1,000 pounds of animal.

“Appeal” means a request for a review of the interpretation of any provision of this chapter, per EMC 14.10.090.

“Applicant” means any person or entity, including an agency, applying for a license from an agency.

“Application” means a request for a license.

“Aquifer” means a saturated geologic formation, which will yield a sufficient quantity of water to serve as a private or public water supply.

“Area of shallow flooding” means areas designated as AO or AH zones on the FIRM(s). AO zones are characterized as sheet flows, having base flood depths that range from one to three feet above the natural ground, where a clearly defined channel does not exist, the path of flooding is unpredictable and indeterminate, and velocity flow may be evident. AH zones indicate similar depth ponding, shown with standard base flood elevations on the FIRM(s).

“Area of special flood hazard” means land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. Designation on FIRM(s) always includes the letter A or V.

“Base flood” means the flood having a one percent chance of being equaled or exceeded in any given year, also referred to as the “100-year flood,” and is designated on FIRM(s) by the letter A or V.

“Basement” means any area of the building having its floor sub-grade (below ground level) on all sides, for the purposes of this title.

“Best available science” means scientific information applicable to the critical area prepared by local, state, or federal natural resource agencies, a qualified scientific professional, or team of qualified scientific professionals that is consistent with criteria established in WAC 365-195-900 through WAC 365-195-925.

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

- A. Control soil loss and reduce water quality degradation caused by high concentrations of nutrients, animal waste, toxics and sediment;
- B. Minimize adverse impacts to surface water and ground water flow and circulation patterns and to the chemical, physical, and biological characteristics of wetlands;
- C. Protect trees and vegetation designated to be retained during and following site construction and use native plant species appropriate to the site for re-vegetation of disturbed areas; and
- D. Provide standards for proper use of chemical herbicides within critical areas.

“Breakaway wall” means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

“Buffer” means an area contiguous with a critical area that is required for the integrity, maintenance, function, and structural stability of the critical area.

“Building footprint” means the horizontal area measured within the outside of the exterior walls of the ground floor of all principal and accessory buildings on a lot.

“City” means the city of Edgewood.

“Classification” means defining value and hazard categories to which critical areas and land resource lands will be assigned.

“Clearing” means the removal of timber, brush, grass, ground cover, or other vegetative matter from a site, which exposes the earth’s surface on the site.

“Colluvium” means loose materials deposited by gravity on the face of or at the foot of a slope (e.g., talus, soil creep, etc.).

“Compensatory mitigation” means replacing project-induced losses or impacts to a critical area.

“Conservation easement” means a recorded deed restriction or covenant that runs in perpetuity on a parcel of land restricting the use of the property by preventing future real estate development such as residential, industrial, or commercial use. Conservation easements may allow for continued current uses (e.g., residential, recreational, agriculture, forestry, or ranching); however, conservation easements most often restrict both the current use as well as future uses of the land to some important conservation quality such as habitat preservation, open space, or scenic views. A land trust or governmental entity that manages properties for long-term goals typically holds conservation easements.

“Contaminant” means any chemical, physical, biological, or radiological substance that does not occur naturally or occurs at concentrations and duration as to be injurious to human health or welfare or shown to be ecologically damaging.

“Council” means the Edgewood city council.

“County” means Pierce County.

“Crawl space” means the shallow space beneath the bottom floor of a house with no basement; used for access and inspection of framing, electrical, plumbing, insulation, vapor barriers, or duct work. For purposes of the National

Flood Insurance Program Elevation Certificate, a crawl space that has subgrade around all sides shall be considered a basement.

“Critical aquifer recharge areas” means areas with a critical recharging effect on aquifers used for potable water, including areas where an aquifer that is a source of drinking water is vulnerable to contamination that would affect the potability of the water, or is susceptible to reduced recharge.

“Critical areas” means the following areas and ecosystems: (a) Wetlands; (b) areas with a critical recharging effect on aquifers used for potable water; (c) fish and wildlife habitat conservation areas; (d) frequently flooded areas; and (e) geologically hazardous areas.

“Critical facilities” means those facilities occupied by populations or which handle dangerous substances including but not limited to hospitals, medical facilities, nursing homes; structures housing, supporting, or containing toxic or explosive substances; covered public assembly structures; school buildings through secondary, including daycare centers; buildings for colleges or adult education; police, fire, and emergency response installations; jails and detention facilities; and all structures with occupancy of greater than 5,000 people. These facilities are such that even a slight chance of flooding might be too great. Essential public facilities (as defined under EMC 18.20.080 and 18.100.050) are considered critical facilities, for floodplain management purposes.

“Debris flow” means the rapid downslope movement of a viscous mass of water-saturated sediments.

“Degraded” means to have suffered a decrease in naturally occurring functions and values due to activities undertaken or managed by persons on or off a site.

“Delineation” means a wetland study conducted in accordance with the approved federal wetland delineation manual and applicable regional supplements.

“Department” means the City of Edgewood Department of Community Development.

“Depressional pothole” means a relatively sunken or low-lying area of the earth’s surface, especially one having no natural outlet for surface drainage.

“Development” means any human-induced change to improved or unimproved real property, including but not limited to: the construction of buildings or other structures, placement of a manufactured home/mobile home, mining, dredging, clearing, filling, grading, paving, excavation, drilling operations, storage of equipment or materials located within an area of special flood hazard, or activities otherwise governed by EMC Title 16, Subdivisions.

“Development activity” means any construction, development, earth movement, clearing, or other site disturbance of the land, except as listed under exemptions.

“Director” means the director of the city of Edgewood Department of Community Development or his/her designee.

“DRASTIC” is an acronym for a computer model developed by the National Water Well Association and Environmental Protection Agency used to measure aquifer susceptibility.

“Dwelling unit” means one or more rooms designed for or occupied by one family for living or sleeping purposes and containing kitchen facilities for use solely by one family.

“Earth/earth material” means naturally occurring rock, soil, stone, sediment, or combination thereof.

“Earthflow” means a slow downslope movement of viscous, saturated sediments.

“Elevated building” means, for insurance purposes, a non-basement building that has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

“Elevation certificate” means the official form (FEMA Form 81-31) used to track development, provide elevation information necessary to ensure compliance with community floodplain management ordinances, and determine the proper insurance premium rate with Section B completed by community officials.

“Encroachment” means any development or regulated activity conducted inside the boundaries of a designated critical area and/or its associated buffer.

“Engineer” as defined by Chapter 18.43 RCW.

“Engineering geologist” means a geologist who, by reason of his or her knowledge of engineering geology, acquired by education and practical experience, is qualified to engage in the practice of engineering geology, has met the qualifications in engineering geology established under Chapter 18.220 RCW, and has been issued a license in engineering geology by the Washington State Geologist Licensing Board.

“Engineering geology” means a specialty of geology affecting the planning, design, operation, and maintenance of engineering works and other human activities where geological factors and conditions impact the public welfare or the safeguarding of life, health, property, and the environment.

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

“Erosion” means the wearing away of the earth’s surface as a result of the movement of wind, water, or ice.

“Erosion hazard areas” means those areas that because of natural characteristics, including vegetative cover, soil texture, slope, gradient, and rainfall patterns, or human-induced changes to such characteristics, are vulnerable to erosion.

“Excavation” means the mechanical removal of earth material.

“Existing manufactured home park or subdivision” means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the adopted floodplain management regulations.

“Expansion to an existing manufactured home park or subdivision” means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

“Facility” means all structures, contiguous land, appurtenances, and other improvements on the land used for recycling, reusing, reclaiming, transferring, storing, treating, disposing, or otherwise handling a hazardous substance. Use of the term “facility” includes underground and aboveground tanks and operations, which handle, use, dispose of, or store hazardous substances.

“Fill/fill material” means a deposit of earth material placed by human or mechanical means.

“Filling” means the act of placing fill/fill material on any surface, including temporary stockpiling of fill material.

“Financial guarantee” a surety bond or other security, such as a cash escrow, cash set aside, assignment of funds, letter of credit, that the City may allow a developer to utilize in lieu of completion of the actual construction of required improvements prior to the City's approval and acceptance of the improvements. The City establishes the amount and conditions which will ensure completion within a specific time period.

“Finished floor” means the top of the next higher floor above the lowest floor. For purposes of the National Flood Insurance Program Elevation Certificate, the finished floor referenced in this regulation shall equal the top of the next higher floor.

“Fish and wildlife habitat conservation areas” means areas necessary for maintaining species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created as designated by WAC

365-190-080(5). "Fish and wildlife habitat conservation areas" does not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of and are maintained by a port district or an irrigation district or company.

"Fisheries biologist" means a professional with a degree in fisheries or certification by the American Fisheries Society, or with five years' professional experience as a fisheries biologist.

"Flood" or "flooding" means a general and temporary condition of partial or complete inundation of normally dry land areas from:

1. The overflow of inland or tidal waters; and/or
2. The unusual and rapid accumulation of runoff of surface waters from any source.

"Flood hazard areas" means areas of flooding identified by verifiable flooded areas using:

1. Aerial photographs of the city, especially those taken in wintertime 1996 and 1997;
2. Relevant and verifiable information from the city's capacity analysis technical review Adhoc committee (CATRAC) draft report, 2000;
3. Relevant and verifiable government and citizen photographs, notes, observations, etc. regarding historic ponding/flooding levels
4. Relevant and verifiable information available through Pierce County;
5. Relevant and verifiable information available through the Federal Emergency Management Agency (FEMA);
or
6. Areas of land located in floodplains, which are subject to a one percent or greater chance of flooding in any given year, including, but not limited to, streams, rivers, lakes, ponds, wetlands, depressional potholes and the like.

"Flood Insurance Rate Map (FIRM)" means the official map on which the Federal Insurance Administration (FIA) has delineated both the areas of special flood hazard and the risk premium zones applicable to the community.

"Flood Insurance Study (FIS)" means the official report provided by the Federal Insurance Administration (FIA) that includes flood profiles, FIRM(s), and the water surface elevation of the base flood.

"Flood fringe" means the area subject to inundation by the base flood, but outside the limits of the floodway, and which may provide needed temporary storage capacity for floodwaters.

"Floodplain" means the total area subject to inundation by the base flood, including the flood fringe and the floodway areas.

"Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to convey and discharge the base flood without cumulatively increasing the water surface elevation by more than one foot, and those areas designated as deep and/or fast-flowing water.

"Fluvial processes" means the physical interaction of flowing water and the natural channels of rivers and streams.

"Foundation footing setback" means a typical geotechnical recommendation intended to assure that a proposed structure is protected in the event of a slope failure or sloughage. A foundation footing setback is measured horizontally from the face of the foundation footing to the face of the slope. A foundation footing setback for this purpose should not be confused with a building or construction setback from a landslide hazard area buffer. A foundation footing setback is also not a buffer.

“Frequently flooded area” means lands in the floodplain subject to at least a one percent or greater chance of flooding in any given year, or within areas subject to flooding due to high groundwater. These areas include, but are not limited to, streams, rivers, lakes, wetlands, and areas where high groundwater forms ponds on the ground surface.

“Geologically hazardous areas” means 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.

“Geologist” means engineering geologist, or hydrogeologist, registered in the state of Washington.

“Geotechnical professional” means a person with experience and training in analyzing, evaluating, and mitigating landslide, erosion, and/or seismic hazards. A geotechnical professional shall be licensed in the state of Washington as a geologist or professional engineer, and must have five or more years’ experience specializing in landslide, erosion, or seismic hazards, as applicable.

“Geotechnical report” means a report prepared by a professional engineer licensed by the state of Washington with expertise in geotechnical engineering, evaluating the site conditions and mitigating measures necessary to reduce the risks associated with development in geologically hazardous areas.

“Grading” means any excavating, filling, clearing, or creating of impervious surfaces or combination thereof.

“Groundwater” means all water found beneath the ground surface, including slowly moving subsurface water present in aquifers and recharge areas.

“Habitat management plan” means a report prepared by a professional wildlife biologist or fisheries biologist, which discusses and evaluates the measures necessary to maintain fish and wildlife habitat conservation areas on a proposed development site.

“Habitat of local importance” means an area, range, or habitat within which a species has a primary association and which, if altered, may reduce the likelihood that the species will maintain and reproduce over the long term. Examples include areas of high relative density or species richness, breeding habitat, winter range, and movement corridors. These areas may also include habitats that are of limited availability or high vulnerability to alteration.

“Hard armoring” means the use of large rock and/or human-made materials to protect property from shoreline erosion. Such techniques include cement/concrete bulkheads, steel structures, rock wall revetments, and rock gabion structures. Hard armoring typically does not utilize or integrate any of soft armoring or soil bioengineering techniques.

“Hazardous substance(s)” means any liquid, solid, gas, or sludge, including any materials, substance, product, commodity, or waste, regardless of quantity, that exhibits any of the characteristics or criteria of hazardous waste; and including waste oil and petroleum products.

“Hazardous substance processing or handling” means the use, storage, manufacture, or other land use activity involving hazardous substances, but does not include individually packaged household consumer products or quantities of hazardous substances of less than five gallons in volume per container. Hazardous substances shall not be disposed on-site unless in compliance with Dangerous Waste Regulations, Chapter 173-303 WAC, and any pertinent local ordinances such as sewer discharge standards.

“Hazardous waste” means and includes all dangerous waste and extremely hazardous waste as designated pursuant to Chapter 70.105 RCW and Chapter 173-303 WAC.

1. “Dangerous waste” means any discarded, useless, unwanted, or abandoned substances including but not limited to certain pesticides or any residues or containers of such substances which are disposed of in such quantity or concentrations as to pose a substantial present or potential hazard to human health, wildlife, or the environment because such wastes or constituents or combinations of such wastes:

- a. Have short-lived, toxic properties that may cause death, injury, or illness, or have mutagenic, teratogenic, or carcinogenic properties; or

b. Are corrosive, explosive, flammable, or may generate pressure through decomposition or other means.

2. “Extremely hazardous waste” means any waste which:

a. Will persist in a hazardous form for several years or more at a disposal site and which in its persistent form presents a significant environmental hazard and may be concentrated by living organisms through a food chain or may affect the genetic make-up of humans or wildlife; and

b. Is disposed of at a disposal site in such quantities as would present an extreme hazard to humans or the environment.

“Hazardous waste treatment and storage facility” means a facility that treats and stores hazardous waste and is authorized pursuant to Chapter 70.105 RCW and Chapter 173-303 WAC. It includes all contiguous land and structures used for recycling, reusing, reclaiming, transferring, storing, treating, or disposing of hazardous waste. Treatment includes using physical, chemical, or biological processing of hazardous wastes to make such waste non-dangerous or less dangerous and safer for transport, amenable for energy or material resource recovery. Storage includes the holding of waste for a temporary period, but not the accumulation of waste on the site of generation as long as the storage complies with applicable requirements of Chapter 173-303 WAC.

“Holocene Epoch” means that part of the geologic record that post-dates the youngest deposits associated with the late Pleistocene Age Fraser Glaciation and is typically considered to be the past 10,000 years.

“Hydrogeologic assessment” means a report detailing the subsurface conditions, the design of a proposed land use action, and the facilities operation which indicates the susceptibility and potential for contamination of groundwater supplies.

“Impervious surface” means a hard surface, which prevents or retards the entry of water into the soil mantle as under natural conditions prior to development, and/or a hard surface area, which causes water to run off the surface in greater quantities or at an increased rate of flow than the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, gravel parking lots, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces.

“Increased cost of compliance (ICC)” means a flood insurance claim payment up to \$30,000 directly to a property owner for the cost to comply with floodplain management regulations after a direct physical loss caused by a flood. Eligibility for an ICC claim can be through a single instance of “substantial damage” or as a result of a “cumulative substantial damage.” (More information can be found in FEMA ICC Manual 301.)

“Lahar” means a mudflow or debris flow mobilized by water, which originates on the slopes of a volcano.

“Lakes” means impoundments of open water 20 acres or larger.

“Landfill” means a place to dispose of refuse and other waste material by burying it and covering it over with soil.

“Landslide” means the abrupt downslope movement of soil, rocks, or other surface matter on a site. Landslides may include but are not limited to slumps, debris flows, mudflows, earthflows, rockfalls, and snow avalanches.

“Landslide hazard areas” means areas which are potentially subject to risk of mass movement due to a combination of geologic, topographic, and hydrologic factors.

“Large animal” means an animal with an average weight of 100 pounds or more.

“License” means any form of written permission given to any person, organization, or agency to engage in any activity, as required by law or agency rule. A license includes all or part of a city permit, certificate, approval, registration, charter, or plat approvals or rezones to facilitate a particular proposal. The term does not include a license required solely for revenue purposes.

“LiDAR” means Light Detection and Ranging imaging.

“Liquefaction” means a process by which a water-saturated granular (sandy) soil layer loses strength because of ground shaking caused by an earthquake.

“Long-term commercial significance” means the growing capacity, productivity, and soil composition of land, which makes it suitable for long-term commercial production, in consideration with the land’s proximity to population areas, and the possibility of more intense uses of land.

“Lowest floor” means the lowest floor of the lowest enclosed area (including basement and crawl space). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access, or storage in an area other than a basement area, is not considered a building’s lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this title.

“Maintenance” means those usual acts to prevent a decline, lapse, or cessation from a lawfully established condition without any expansion of or significant change from that originally established condition. For the purposes of this document, activities within landscaped areas within areas subject to native vegetation retention requirements may be considered maintenance only if they maintain or enhance the canopy and understory cover.

“Manufactured home/mobile home” means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes, the term “manufactured home/mobile home” also includes park trailers, travel trailers, and other similar recreational vehicles placed on a site for greater than 180 consecutive days. For insurance purposes, the term “manufactured home/mobile home” does not include park trailers, travel trailers, recreational vehicles, or other similar vehicles.

“Manufactured home park or subdivision” means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

“Mineral resource lands” means lands primarily devoted to the extraction of minerals or which have known or potential long-term commercial significance for the extraction of minerals.

“Minerals” include gravel, sand, or other resources that are extracted from the ground, and valuable metallic substances.

“Mitigation” means:

1. Avoiding the impact altogether by not taking a certain action or parts of an action;
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and
6. Monitoring the impact and taking appropriate corrective measures;

–“Mudflow” means a debris flow containing an abundance of fine particles.

“Native vegetation” or “native plants” means a mix of plant species comprising herbs, grasses, grass-like plants, shrubs and trees indigenous to the Puget Sound region that reasonably could be expected to naturally occur on the site.

“Natural resource lands” means agricultural and mineral resource lands, which have long-term commercial significance.

“New construction” means structures for which the “start of construction” commenced on or after the following:

1. For the purposes of determining flood insurance rates, the effective date of an initial FIRM (i.e., August 19, 1987, or August 4, 1988, specifically for Panel 350 only), and includes any subsequent improvements to such structures.
2. For floodplain management purposes, the effective date of this floodplain management ordinance and includes any subsequent improvements to such structures.
3. For all other cases, the effective date of the applicable critical areas ordinance.

“New manufactured home park or subdivision” means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of the adopted floodplain management regulations.

“Ordinance” means the ordinance, resolution, or other procedure used by the city to adopt regulatory requirements.

“Ordinary high water mark (OHWM)” means the mark on all lakes, streams and tidal waters that will be found by examining the beds and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland and vegetation, as that condition exists on the effective date of the ordinance codified in this title, or as it may naturally change thereafter. In any area where the ordinary high water mark cannot be found, the ordinary high water mark shall be the line of mean higher high tide in areas adjoining saltwater, and the line of mean high water in areas adjoining freshwater.

“Plat” means:

1. “Short subdivision” or “short plat” means the division or redivision of land into six or fewer lots, tracts, parcels, sites, or divisions for the purpose of sale, lease, or transfer of ownership.
2. “Subdivision” or “formal subdivision” means the division or redivision of land into seven or more lots, tracts, parcels, sites, or division for the purpose of sale, lease, or transfer of ownership. For floodplain management regulation purposes, this includes land over five acres in area situated within a flood hazard area.

“Ponds” means naturally occurring impoundments of open water less than 20 acres in size and larger than 2,500 square feet, which maintain standing water throughout the year. Also see “depressional pothole.”

“Professional engineer” means an engineer currently licensed and registered in the state of Washington.

“Reconstruction” means the rebuilding of an existing structure which has been partially or completely destroyed by any cause, such as but not limited to fire, wind, landslides, and water, without increasing the original floor area or square footage area.

“Recreational vehicle (RV)” means a vehicle built on a single chassis, 400 square feet or less when measured at the largest horizontal projection, designed to be self-propelled or permanently towable by a light duty truck, and designed primarily not for use as a permanent dwelling but as a temporary living quarters for recreational, camping, travel, or seasonal use.

“Regulated activities” means, but is not limited to, any of the following activities which are directly undertaken or originate in a regulated critical area or its buffer: building permit, commercial or residential; binding site plan; franchise right-of-way construction permit; site development permit; right-of-way permit; shoreline permits; short subdivision; use permits; subdivision; utility permits; or any subsequently adopted permit or required approval not expressly exempted by this title.

“Rehabilitation” means any improvements and repairs which are made to the interior and exterior of an existing structure, but which do not result in any increase in the floor area of the structure. This is also commonly referred to as a “remodel” of an existing structure.

“Restoration” means an action which returns habitat to a state in which its stability and functions approach its unaltered state as closely as possible. This may be accomplished through measures including, but not limited to, re-vegetation, removal of intrusive stream bank structures, and removal or treatment of toxic materials. Restoration does not imply a requirement for returning the critical area to aboriginal or pre-European settlement conditions.

“Revised Code of Washington (RCW)” means all laws of a general and permanent nature heretofore or hereafter enacted by the legislature, and assign permanent numbers as provided by law to all new titles, chapters, and sections thereof.

“Riparian” means the area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Riparian habitat begins at the ordinary high water mark and includes the entire extent of the floodplain and riparian areas of wetlands that are directly connected to the stream course.

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

“Sensitive areas” mean agricultural lands and mineral resource lands and all associated buffers.

“Shoreline” for this title means the line where a body of water and the shore meet or the strip of land along the shoreline. There are no waters within the city of Edgewood meeting the criteria of shorelines of statewide significance as defined by RCW 90.58.030.

“Single-family dwelling” means a detached building designed exclusively for occupancy by one family and containing one dwelling unit.

“Site” means a lot, parcel, tract, or combination of lots, parcels, or tracts on which a regulated activity is proposed.

“Slope” means an inclined earth surface, the inclination of which is expressed as the ratio of horizontal distance to vertical distance.

“Sludge” means a semisolid substance consisting of settled solids combined with varying amounts of water and dissolved materials generated from a wastewater treatment plant or system or other sources, including septage sludge, sewage sludge, and industrial sludge.

“Sludge land application site” means a site where stabilized sludge, septage, and other organic wastes are applied to the surface of the land in accordance with established agronomic rates for fertilization or soil conditioning.

“Slump” means the downward and outward movement of a mass of bedrock, colluvium, or other sediments along a distinct surface of failure.

“Small animal” means an animal with an average weight of less than 100 pounds.

“Special occupancy structures” means those structures that have the potential to provide capacity for large numbers of people or special groups of people or assemblies such as but not limited to schools, jails and detention facilities, and resident incapacitated patients.

“Species of local importance” means species that are of local concern due to their population status or their sensitivity to habitat manipulation.

“Soft armoring techniques” means the use of woody plants and limited structural-mechanical systems that are integrated in a structurally and environmentally sound manner to repair and protect slopes and shorelines against shallow mass wasting and surface erosion. Measures such as live stake, live fascine, brushlayer, live cribwall,

vegetated geogrid, branchpacking, live slope grading, beach berms, or earthen berms are examples of soft armoring techniques. Soft armoring techniques may also be referred to as soil bioengineering methods.

“Start of construction” includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement or other improvement was within 180 days of the permit date. The “actual start” means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the “actual start of construction” means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

“Stockpiling” means the placement of material with the intent to remove it later.

“Stream” means a feature where surface waters produce a defined channel or bed. A defined channel or bed is an area that demonstrates clear evidence of the passage of water and includes, but is not limited to, bedrock channels, gravel beds, sand and silt beds, and defined-channel swales. The channel or bed need not contain water year-round. This definition is not intended to include artificially created irrigation ditches, canals, storm or surface water devices, or other entirely artificial watercourses, unless they are used by salmonids or created for the purposes of stream mitigation.

“Structure” means a walled and roofed building, including a gas or liquid storage tank that is principally above ground.

“Substantial damage” means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

“Substantial improvement” means any repair, reconstruction, addition, rehabilitation, or other improvement of a structure, whereby the cost for the work exceeds 50 percent of the market value of the existing structure before the “start of construction” of the improvement. This term includes structures which have incurred “substantial damage,” regardless of the actual repair work performed.

The term does not, however, include either:

1. 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
2. Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places; provided, that the alteration will not preclude the structure’s continued designation as a “historic structure.”

Except for floodplain management regulation, the “cost” and “market value” may be determined using the current permit valuation. The building official shall determine the current permit valuation based on the cost per square foot values in effect at the time of permit application. Substantial improvement shall be accumulative from the effective date of the ordinance codified in this chapter.

“Talus” means a homogenous area of rock rubble ranging in average size 0.15 to 2.0 meters (0.5 to 6.5 feet), including riprap slides and mine tailings. Talus areas may be associated with cliffs.

“Toe of slope” means a distinct topographic break in slope at the lowermost limit of the landslide or erosion hazard area.

“TPCHD” means the Tacoma-Pierce County Health Department.

“Underground storage tank” means any one or a combination of tanks (including underground pipes connected thereto) which are used to contain or dispense an accumulation of hazardous substances or hazardous wastes, and the volume of which (including the volume of underground pipes connected thereto) is 10 percent or more beneath the surface of the ground.

“Urban governmental services” means those governmental services historically and typically delivered by cities, and includes storm and sanitary sewer systems, domestic water systems, street cleaning services, and other public utilities associated with urban areas and normally not associated with nonurban areas.

“Urban growth” means growth that makes intensive use of the land for the location of buildings, structures, and impermeable surfaces to such a degree as to be incompatible with the primary use of such land for the production of food, other agricultural products, or fiber, or the extraction of mineral resources. When allowed to spread over wide areas, urban growth typically requires urban governmental services. “Characterized by urban growth” refers to land having urban growth located on it or to land located in relationship to an area with urban growth on it as to be appropriate for urban growth.

“Utility line” means pipe, conduit, cable, or other similar facility by which services are conveyed to the public or individual recipients. Such services shall include, but are not limited to, water supply, electric power, gas, communications, and sanitary sewers.

“Variance” means a grant of relief from the requirements of this title that permits construction in a manner that would otherwise be prohibited by this title, per EMC 14.10.085.

“View corridor” means an area, which affords views of lakes, mountains, or other scenic amenities normally enjoyed by residential property owners.

“Violation” means the failure of a structure or other development activity to be fully compliant with the provisions of this title. With regard to the floodplain management regulations, projects without the elevation certificate, other certifications, or other evidence of compliance required in Chapter 14.70 EMC are presumed to be in violation until such time as that documentation is provided. See Chapter 1.10 EMC for penalties.

“Volcanic hazard areas” means those areas subject to pyroclastic flows, lava flows, and inundation by debris flows, mudflows, or related flooding resulting from geologic or volcanic events on Mount Rainier.

“Washington Administrative Code (WAC)” means state of Washington Administrative Code.

“Water dependent” means a structure for commerce or industry that cannot exist in any other location and is dependent on the water by reason of the intrinsic nature of its operations.

“Wellhead protection area” means the area within the 10-year time-of-travel zone boundary of a group A public water system well, as delineated by the water system purveyor or its designee, pursuant to WAC 246-290-135.

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

“Wetland category” means the numeric designation (I through IV) assigned to a wetland to indicate the wetland’s overall function and value. Wetland categories rank the city’s wetlands from highest (Category I) to lowest (Category IV) using the current version of the Washington State Wetland Rating System for Western Washington (Hruby, 2014)

“Wetland ~~class~~ “class” means the U.S. Fish and Wildlife Service wetland classification scheme that uses a hierarchy of systems, subsystems, classes, and subclasses to describe wetland habitat types (refer to USFWS, December 1979,

Classification of Wetlands and Deepwater Habitats of the United States for a complete explanation of the wetland classification scheme). These include, for example: forested, scrub-shrub, emergent, and aquatic bed.

“Wetland mosaic” means a patchwork of wetlands that is considered one unit where each patch of wetland is less than one acre and the areas delineated as vegetated wetland are more than fifty percent of the total area of the wetlands and uplands together.

“Wetland specialist” means a person that obtained Professional Wetland Scientist (PWS) or Wetland Professional In-Training (WPIT) certification from the Society of Wetland Scientists or a qualified wetland professional with experience and training in wetlands issues and with experience in performing delineations, analyzing wetland functions and values, analyzing wetland impacts, and recommending wetland mitigation and restoration.

A Qualified Wetland Professional is a person with experience and training that includes, at a minimum:

1. A B.S., B.A., or equivalent degree in biology, botany, environmental studies, fisheries, soil science, wildlife, agriculture, or related field; and

2. Two years of related work experience; and

3. One-year experience delineating wetlands using the Unified Federal Manual and preparing wetland reports and mitigation plans; OR

4. Four years of related work experience and training; and

5. Two years of experience delineating wetlands using the Unified Federal Manual and preparing wetland reports, and mitigation plans.

Wetland scientist with at least two years of full-time work experience as a wetlands professional, including delineating wetlands using the federal manual and supplements, preparing wetland reports, conducting function assessment, and development and implementing mitigation plans.

“Wildlife biologist” means a professional with a degree in wildlife, or certification by the Wildlife Society, or with five years’ professional experience as a wildlife biologist. (Ord. 17-492 § 2 (Exh. A); Ord. 16-461 § 2; Ord. 15-447 § 1 (Exh. A); Ord. 02-200 § 2).

Chapter 14.2030

USE AND ACTIVITY REGULATIONS

Sections:

- 14.230.010 Permitted uses.
- 14.230.020 Regulated uses and activities.
- 14.230.030 Exemptions.
- 14.230.040 Nonconforming uses and structures.
- 14.230.050 Reasonable use exceptions.
- 14.230.060 Current use assessment program.

14.230.010 Permitted uses.

Uses permitted on properties designated as critical areas shall be the same as those permitted in the zone classification shown in the City's Official Zoning Map unless specifically prohibited by this title. (Ord. 02-200 § 2).

14.230.020 Regulated uses and activities.

A. Unless the requirements of this title are met, the department shall not grant any approval or permission to alter the condition of any land, water, or vegetation, or to construct or alter any structure or improvement regulated through the following: building permit, commercial or residential; binding site plan; franchise right-of-way construction permit; site development permit; right-of-way permit; short subdivision; large lots; use permits; subdivision; utility permits; or any subsequently adopted permit or required approval not expressly exempted by this chapter.

B. The following activities are regulated within critical areas and/or their buffers, unless exempted by EMC

14.20.030:

1. Removing, excavating, disturbing, or dredging soil, sand, gravel, minerals, organic matter, or materials of any kind;
2. Dumping, discharging, or filling;
3. Draining, flooding, or disturbing the water level or water table. In addition, an activity which involves intentional draining, flooding, or disturbing the water level or water table in a wetland or stream in which the activity itself occurs outside the regulated area shall be considered a regulated activity;
4. Driving, piling or placing obstructions, including placement of utilities;
5. Constructing, reconstructing, installing, demolishing, or altering the size of any structure or infrastructure, including manufactured and/or mobile homes;
6. Altering the character of a regulated area by destroying or altering vegetation through clearing, harvesting, cutting, intentional burning, shading, or planting;
7. The division of land;
8. The creation of hard surfaces.

14.230.030 Exemptions.

A. Individuals, organizations or associated party's shall avoid potential impacts to critical areas and their buffers to the greatest degree feasible. To be exempt from this title does not give permission to degrade a critical area or its buffer or ignore risk from natural hazards. Any incidental damage to, or alteration of, a critical area or its buffer that is not a necessary outcome of the exempted activity shall be restored, rehabilitated, or replaced at the responsible party's expense.

B. The following activities are exempt from the provisions of this title:

1. Operation, maintenance, or repair of existing structures, infrastructure improvements, utilities, public or private roads, dikes, levees, or drainage systems, that do not require construction permits, if the activity does not further alter or increase the impact to, or encroach further within, the critical area or buffer and there is no increased risk to life or property as a result of the proposed operation, maintenance, or repair. Operation and maintenance includes vegetation management performed in accordance with best management practices that is part of ongoing maintenance of structures, infrastructure, or utilities, provided that such management actions are part of ongoing maintenance, do not expand further into the critical area or buffer, are not the result of an expansion of the structure or utility, and do not directly impact an endangered or threatened species.

2. Normal maintenance or repair of existing structures or developments, including damage by accident, fire, or elements. "Normal maintenance" includes those usual acts to prevent a decline, lapse, or cessation from a lawfully established condition. "Normal repair" means to restore a development to a state comparable to its original condition including, but not limited to, its size, shape, configuration, location, and external appearance, within a reasonable period after decay or partial destruction, except where repair causes substantial adverse effects to critical areas or their buffers. Replacement of a structure or development may be authorized as repair where such replacement is the common method of repair for the type of structure or development and the replacement structure or development is comparable to the original structure or development including, but not limited to, its size, shape, configuration, location, and external appearance and the replacement does not expand further into the critical area or buffer. Refer to EMC 14.20.040 (D) for requirements associated with repair of substantial damage of non-conforming structures.

3. Reconstruction, remodeling, or maintenance of existing single-family residential structures and accessory structures that are located outside a flood hazard area and active landslide hazard area; provided, that a one-time only expansion of the building footprint does not increase by more than 25 percent and that the new construction or related activity does not further intrude into the critical area or related buffer. The exemption shall not apply to reconstruction which is proposed as a result of structural damage associated with a critical area, such as slope failure in a landslide hazard area or flooding in a flood hazard area.

4. Reconstruction, remodeling, or maintenance of structures, other than single-family structures and accessory structures that are located outside a flood hazard area and active landslide hazard area; provided, that such reconstruction, remodeling, or maintenance does not increase the floor area nor extend beyond the existing ground coverage. The exemption shall not apply to reconstruction which is proposed as a result of site or structural damage associated with a critical area, such as slope failure in a landslide hazard area or flooding in a flood hazard area.

5. Site investigative work necessary for land use application submittals such as surveys, soil logs, percolation tests, and other related activities. Critical area impacts shall be minimized and disturbed areas shall be immediately restored.

6. Emergency actions necessary to prevent imminent threat or danger to public health or safety, or to public or private property, or serious environmental degradation.

a. The department shall review all proposed emergency actions to determine the existence of the emergency and reasonableness of the proposed actions taken; however, post-emergency actions, such as submittal of permits, completion of city review, modification or removal of the emergency repair work, or mitigation shall be required by the department.

b. Erosion protection measures shall only be allowed as an emergency action when the owner can demonstrate that there is an imminent threat to an existing residential, commercial, industrial, or agricultural structure. The owner shall retain either city staff or an engineering geologist to conduct a site investigation and provide adequate documentation that the situation is actually an emergency. An emergency action is not warranted when the structure is located outside the active landslide area.

c. After the emergency, the person or agency undertaking the action shall fully fund and conduct necessary restoration and/or mitigation for any impacts to the critical area and buffers resulting from the emergency action in accordance with an approved critical area report and mitigation plan. The person or agency undertaking the action shall apply for review, and the alteration, critical area report, and mitigation shall be

reviewed by the department in accordance with the review procedures contained herein. Restoration and/or mitigation activities must be initiated within 90 days of the date of the emergency activity, and completed within one (1) year.

7. Installation, construction, replacement, repair, operation or alteration of natural gas, cable and telecommunication facilities, electric facilities and lines, water, sewer or storm lines, pipes, mains, equipment or appurtenances in publicly owned right-of-way (which may be within or adjacent to a critical area or its buffer), subject to full review and approval of the department, including any mitigation and restoration requirements established by the department.

8. Removal by hand of manmade litter and control of noxious weeds that are included on the state noxious weed list (Chapter 16-750 WAC) or invasive plant species as identified by the city. Control may be conducted by clipping, pulling, or digging, or by an alternative non-mechanical method upon approval of a plan by the department.

9. Activities undertaken to comply with a United States Environmental Protection Agency superfund order, or a Washington Department of Ecology order, pursuant to the Model Toxics Control Act, including the following activities:

- a. Remediation or removal of hazardous or toxic substances;
- b. Source control; and
- c. Natural resource damage restoration.

10. Activities within a portion of a wetland buffer or fish and wildlife habitat conservation area buffer located landward of an existing, substantially developed area, such as a paved area, dike, levee, or permanent structure which eliminates or greatly reduces the impact of the proposed activities on the wetland or fish and wildlife habitat conservation area. The department shall review the proposal to determine the likelihood of associated impacts.

11. Passive recreation such as hunting, hiking, fishing, and wildlife viewing that does not involve the construction of trails.

12. Enhancement actions that do not involve clearing, grading, or construction activities (e.g., revegetation with native plants and installation of nest boxes). Enhancement activity proposals shall be reviewed by the department.

13. Forest practices conducted in accordance with the requirements of the Forest Practice Act (Chapter 76.09 RCW) and its rules, with the exception of the conversion of forest land to a use other than commercial forestry (Class IV conversions).

14. Existing and ongoing agricultural activities, provided that they implement applicable Best Management Practices (BMPs) contained in the latest editions of the USDA Natural Resources Conservation Service Field Official Technical Guide; or develop a farm conservation plan in coordinate with the local conservation district. BMPs and/or farm plans should address potential impacts to critical areas from livestock, nutrient and farm chemicals, soil erosion and sediment control and agricultural drainage infrastructure. BMPs and/or farm plans should ensure that ongoing agricultural activities minimize their effects on water quality, riparian ecology, salmonid populations, and wildlife habitat.

(Ord. 02-200 § 2).

14.230.040 Nonconforming uses and structures.

An established use or existing structure located in a wetland, fish and wildlife habitat conservation area, landslide or erosion hazard area, flood hazard area, and their associated buffers that was lawfully permitted prior to the effective date of this title, but which is not currently in compliance with this title, may continue subject to the following:

A. Nonconforming Use Expansion. Nonconforming uses shall not be expanded or changed in any way that increases the nonconformity without a permit issued pursuant to the provisions of this title.

B. Nonconforming Structure Expansion. Existing structures shall not be expanded or altered in any manner that will increase the nonconformity without a permit issued pursuant to the provisions of this title, except as provided in EMC 14.20.030(B).

C. Discontinued Uses. Activities or uses which are discontinued for 12 consecutive months shall be allowed to resume only if they are in compliance with this title.

D. Substantial Damage. Nonconforming structures, except for structures located in a flood hazard area or active landslide hazard area which are damaged or destroyed by fire, explosion, flood, or other casualty, may be restored or replaced if reconstruction is commenced within one year of such damage and is substantially completed within 18 months of the date such damage occurred. The reconstruction or restoration shall not serve to expand, enlarge, or increase the nonconformity except as allowed through the provisions in EMC 14.20.030(B). Structures in a floodway or active landslide hazard area may be allowed to be restored only up to the limits of substantial improvement, as set forth in each chapter. (Ord. 02-200 § 2).

14.230.050 Reasonable use exceptions.

~~A. General Requirements.~~

A. If the application of this chapter would deny all reasonable use of the property, the applicant may apply for a Reasonable Use Exception pursuant to this subsection. The director may approve alterations to critical areas, critical area buffers and setbacks to allow a reasonable use not otherwise allowed by this chapter when the following criteria are met:

1. The application of this chapter would deny all reasonable use of the property;
2. There is no other reasonable use with less impact on the critical area;
3. The proposed development does not pose an unreasonable threat to the public health, safety, or welfare on or off the development proposal site and is consistent with the general purposes of this chapter and the public interest; and
4. Any alterations permitted to the critical area or buffer shall be the minimum necessary to allow for reasonable use of the property; and any authorized alteration of a critical area under this subsection shall be subject to conditions established by the department including, but not limited to, mitigation under an approved mitigation plan.

~~If, after a property owner makes application for a variance, and the variance is denied, the property owner may apply for a reasonable use exception. A reasonable use exception may be requested when it is alleged that that the application of this title would deny all reasonable use of a site. Approval of a reasonable use exception allows development which development which is consistent with the general purposes of this title and the public interest. Nothing in this title is intended to preclude all reasonable use of property.~~

~~2. The provisions outlined in this section shall only be used when application of this title would deny all reasonable use of a site.~~

~~3. Applications for a reasonable use shall automatically constitute an application for a variance to reduce front, side, or rear yard setback requirements. The decision maker shall examine the feasibility of reducing setbacks as a method of locating a structure outside a critical area or its associated buffer prior to granting a reasonable use exception for allowing construction to occur within a critical area or its associated buffer. Reductions in setback requirements shall be given preference over granting of a reasonable use exception.~~

~~5. The proposed impact to the critical area shall be the minimum necessary to allow for reasonable use of the property.~~

~~6. Mitigation may be required to assure that the proposal will result in no net loss of critical area functions and values, consistent with the best available science.~~

~~7. The creation of new lots within critical areas and their associated buffers is prohibited.~~

~~8. The proposal must comply with all provisions in Chapter 14.70 EMC, Flood Hazard Areas, and Chapter 14.80 EMC, Landslide Hazard Areas.~~

B. Application Requirements. A complete application for a reasonable use exception shall include the following information:

1. A description of the areas of the site that contains a critical area, buffers, or within setbacks required under this title;
2. A description of the amount of the site that is within setbacks required by other standards of the zoning code;
3. A description of the proposed development, including a site plan;
4. An analysis of the impact that the amount of development described in subsection (B)(3) of this section would have on the critical area(s);
5. An analysis of whether any other reasonable use with less impact on the critical area(s) and associated buffer(s) is possible;
6. A design of the proposal so that the amount of development proposed as reasonable use will have the least impact practicable on the critical area(s);
7. An analysis of the modifications needed to the standards of this title to accommodate the proposed development;
8. A description of any modifications needed to the required front, side, and rear setbacks; building height; and buffer widths to provide for a reasonable use while providing greater protection to the critical area(s);
9. Such other information as the department determines is reasonably necessary to evaluate the issue of reasonable use as it relates to the proposed development, such as but not limited to a wetland analysis report, mitigation plan, habitat evaluation study, and/or a buffer enhancement plan.

C. Review. A reasonable use exception is a ~~Type III~~ Process I permit and shall be processed according to the procedures in ~~EMC chapter Section 18.40.080-190~~ EMC.

~~1. Public Hearing Required. The department shall set a date for a public hearing after all requests for additional information or plan correction, as set forth in EMC 18.40.150, have been satisfied. The public hearing shall follow the procedures set forth in EMC 18.40.190, Notice of public hearing.~~

~~2. Decision Criteria. The decisionmaker may approve a reasonable use exception if the decisionmaker determines that the applicant has demonstrated that all of the following criteria are met:~~

~~a. The proposed development is located on an existing lot of record that was created prior to the effective date of the ordinance codified in this title and there is no other reasonable use or feasible alternative to the proposed development with less impact on the critical area(s) and/or associated buffers including phasing or project implementation, change in timing of activities, buffer averaging or reduction, setback variance, relocation of driveway, or placement of structure; and~~

~~b. The development cannot be located outside the critical area and/or its associated buffer due to topographic constraints of the parcel or size and/or location of the parcel in relation to the limits of the critical area and/or its associated buffer and a building setback variance or road variance has been reviewed, analyzed, and rejected as a feasible alternative; and~~

c. The proposed development does not pose a threat to the public health, safety, or welfare on or off the site, nor shall it damage nearby public or private property; and

d. Any alteration of the critical area(s) shall be the minimum necessary to allow for reasonable use of the property; and

e. The inability of the applicant to derive reasonable use of the property is not the result of actions by the applicant in subdividing the property or adjusting a boundary line thereby creating the undevelopable condition after February 1, 1992; and

f. The proposal mitigates the impacts on the critical area(s) to ensure no net loss of critical area functions, while still allowing reasonable use of the site; and

g. The proposed activities will not jeopardize the continued existence of species listed by the state or federal government as endangered, threatened, sensitive, or documented priority species or priority habitats; and

h. The proposed activities will not cause significant degradation of groundwater or surface water quality.

3. Decisionmaker's Authority. The decisionmaker has the authority to approve an application for a reasonable use exception, approve with additional requirements above those specified in this title, require modification of the proposal to comply with specified requirements or local conditions, or deny the application if it fails to comply with the requirements of this section

4D. Required Written Findings and Determinations. A reasonable use exception may be approved by the decisionmaker only if all of the findings are made in writing regarding the proposal and are supported by the record, as outlined in the decision criteria identified within EMC 14.20.050 (C)(2).

14.230.060 Current use assessment program.

A. An owner of agricultural land, timberland, or open space desiring current use classification under Chapter 84.34 RCW may file for such current use classification with the Pierce County assessor-treasurer's office.

B. The department shall notify the assessor-treasurer's office when restrictions on development occur on a particular site.

C. The assessor-treasurer's office shall consider the critical areas and buffering requirements of this title in determining the fair market value of land. Any owner of an undeveloped buffer which has been placed in a separate tract or tracts, protective easement, public or private land trust dedication, or other similarly preserved area shall have that portion of land assessed consistent with those restrictions. (Ord. 02-200 § 2).

Chapter 14.340

WETLANDS

Sections:

- 14.340.010 Purpose.
- 14.340.020 Wetland identification, delineation, and rating.
- 14.340.025030 Buffer standards—Wetlands
- 14.340.0340 Wetland review procedures.
- 14.340.0450 Allowed activities.
- 14.340.060 Mitigation requirements.
- 14.340.070 Appendices.

14.340.010 Purpose.

The purpose of this chapter is to avoid or, in appropriate circumstances, to minimize, rectify, reduce, or compensate for impacts arising from land development and other activities affecting wetlands, and to maintain and enhance the biological and physical functions and values of wetlands with respect to water quality maintenance, stormwater and floodwater storage and conveyance, fish and wildlife habitat, primary productivity, recreation, education, and historic and cultural preservation. When wetland impacts occur, mitigation will be required to achieve no net loss of wetlands in terms of acreage, function, and value. (Ord. 02-200 § 2).

14.340.020 Wetland identification, delineation, and rating.

A. Designation. All areas within the city meeting the meeting the definition of “wetland” in Chapter 14.15 EMC are hereby designated critical areas.

B. Identification and Delineation. Wetlands shall be identified and delineated by a qualified wetland scientist in accordance with the approved federal wetland delineation manual and applicable regional supplements. Wetland delineations are valid for 5 years, after which date the City shall require verification that the wetland boundaries and prior conditions have not changed.

C. Mapping. The approximate location and extent of wetlands are shown on maps maintained by the city. These maps are useful as a guide for project applicants and/or property owners but do not provide a conclusive or definitive indication of wetland presence or extent. Other wetlands may exist that do not appear on the maps, and some wetlands that appear on the maps may not meet all of the wetland designation criteria. The city shall update the maps periodically as new wetland areas are identified and as new wetland information becomes available

D. Wetland Categories. Wetlands shall be categorized by a qualified wetland scientist in accordance with the current version of the Washington State Wetland Rating System for Western Washington (Hruby, 2014) and the appropriate rating forms approved by the Washington State Department of Ecology. The wetland shall also be classified according to the U.S. Fish and Wildlife Service “Classification of Wetlands and Deep Water Habitats in the U.S”.

14.340.02530 Buffer standards – Wetlands.

A. Determining buffer widths. Buffer widths shall be measured horizontally from the perpendicular line established at the wetland edge as shown in Table 14.240.0530(1).

Table 14.440.02530(1)
Buffer Standards - Wetlands

Wetland Category	Buffer Width (Wetlands scores 3-4 habitat points)	Buffer Width (Wetland scores 5 habitat points)	Buffer Width (Wetland scores 6-7 habitat points)	Buffer Width (Wetland scores 8-9 habitat points)
Category I: Based on total score	75 ft.	105 ft.	165 ft.	225 ft.
Category I: Bogs and Wetlands of High Conservation Value	190 ft.	190 ft.	190 ft.	225 ft.
Category I: Forested	75 ft.	105 ft.	165 ft.	225 ft.
Category II (all)	75 ft.	105 ft.	165 ft.	225 ft.
Category III (all)	60 ft.	105 ft.	165 ft.	225 ft.
Category IV (all)	40 ft.	40 ft.	40 ft.	40 ft.

B. Required Measures to Minimize Impacts to Wetlands. Measures to minimize the impacts of the land use adjacent to wetlands shall be applied, as shown in Table 14.240.0530(2).

Table 14.440.02530(2)
Wetland Impact Minimization Measures

Disturbance	Required Measures to Minimize Impacts
Lights	Direct lights away from wetland
Noise	- Locate activity that generates noise away from wetland - For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10-foot 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 feet of wetlands - 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 Impact Development 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 vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion

	Place wetland and its buffer in a separate tract or protect with a conservation easement
Dust	Use best management practices to control dust

C. Modification of Buffer Widths. The standard buffer widths of subsection (A) of this section may be modified by averaging, reducing, or increasing.

1. Buffer Averaging. Buffer width averaging may be allowed only where the applicant demonstrates all of the following:

- a. Buffer encroachment is unavoidable.
- b. The wetland contains variations in sensitivity due to existing physical characteristics.
- c. Width averaging will provide equal or greater protection of current wetland functions and values.
- f. The total buffer area after averaging is no less than the buffer area prior to averaging.
- g. The minimum width of the buffer at any given point shall be at least seventy-five percent (75%) of the standard width, or twenty-five (25) feet, whichever is greater.
- h. The averaging is accomplished within the project boundaries.

2. Buffer Width Reductions. Buffer width reduction up to a maximum of twenty-five (25) percent may be allowed when the applicant demonstrates the following circumstances:

- a. Buffer encroachment is unavoidable.
- b. All exposed areas are stabilized with native vegetation, as appropriate.
- c. The project includes a buffer enhancement plan as part of the mitigation required by EMC 14.30.060. The buffer enhancement plan shall use plant species which are native, noninvasive to the project area.
- d. Buffer reduction with enhancement will provide equal or greater protection of current wetland functions and values.
- e. Buffer reductions may not be used in combination with buffer averaging.

3. Buffer Increases. The department may require increased buffer width(s) when any of the following are identified:

- a. A larger buffer is necessary to maintain viable populations of existing species;
- b. The wetland is used by, or associated with, species listed by the federal government or the state as endangered, threatened, sensitive, or as documented priority species or habitats, or essential or outstanding potential sites such as heron rookeries or raptor nesting areas;
- c. The adjacent land is susceptible to severe erosion and erosion control measures will not effectively prevent adverse wetland impacts;
- d. The adjacent land has minimal vegetative cover, or slopes greater than 20 percent. (Ord. 02-200 § 2).

14.340.0340 Wetland review procedures.

A. Wetland Report Requirements. When the department's maps, sources, or field investigations indicate that the proposed project area is located within 300 feet of a known or suspected wetland, an applicant shall submit a wetland critical areas report prepared by a qualified wetland scientist. The requirement to provide a wetland critical areas report may be waived if the department determines that there are no potential direct and/or indirect impacts on wetlands or their buffers that would result from the proposed development. Wetland critical areas reports shall comply with the requirements established in EMC 14.340.070, Appendix A.

B. Single-Family Dwelling Wetland Review. Construction of a single-family dwelling and regulated activities accessory to a single-family dwelling (such as driveways, gardens, fences, walls, lawns, and on-site septic systems) may utilize an alternative wetland review procedure, subject to the following:

1. Prior to issuance of a building permit, site development permit, or on-site sewage system permit, the applicant shall submit a single-family wetland certification form completed by a wetland specialist that certifies either:
 - a. No regulated wetlands are present within 300 feet of the project area; or
 - b. Wetlands are present within 300 feet of the project area, but the buffer does not extend onto the project site.
2. The single-family certification form may be used only to authorize single-family dwellings and accessory structures. It may not be used for new agricultural activities, expansion of existing agricultural activities, forest practices activities, commercial projects, land divisions, and buffer width modifications.

C. Time Limitation. Wetland delineations and reports that have been accepted by the city shall be valid for a period of five (5) years, unless the department determines that new information warrants revision of the delineation or report.

14.340.0450 Allowed activities.

A. The following wetlands are exempt from the requirement to avoid impacts in EMC 14.10.080(B) and may be altered if the impacts are fully mitigated based on the remaining mitigation sequencing actions in EMC 14.10.080(B). In order to verify the following conditions, a wetland critical areas report meeting the requirements of EMC 14.30.070, Appendix A must be submitted.

1. All isolated Category IV wetlands less than 4,000 square feet that:
 - a. Are not associated with riparian areas or their buffers;
 - b. Are not part of a wetland mosaic;
 - c. Are not associated with shorelines of the state or their associated buffers;
 - d. Do not score 5 or more points for habitat functions based on current version of the Washington State Wetland Rating System for Western Washington (Ecology, 2014).
 - e. Do not contain a Priority Habitat or a Priority Area for a Priority Species identified by the Washington Department of Fish and Wildlife, federally listed species or their critical habitat, or habitats or species of local importance as identified in EMC 14.40.030(A).
2. Wetlands less than 1,000 square feet that meet the criteria specified in subsection (A)(1) of this section.
3. Utility projects within wetland buffers which have minor or short-duration impacts, as determined by the department in accordance with the criteria below, and which do not significantly impact the function or values of wetlands; provided, that such projects are constructed with best management practices and additional restoration measures are provided. Minor activities shall not result in the transport of sediment or increased stormwater. Such allowed minor utility projects shall meet the following criteria:
 - a. There is no practical alternative to the proposed activity with less impact on wetlands;
 - b. The activity involves the placement of a utility pole, street signs, anchor, or vault or other small component of a utility facility; and
 - c. The activity involves disturbance of an area less than 75 square feet.

B. The activities listed below are allowed in wetlands and their buffers, and do not require submission of a critical area report, except where such activities would result in a loss of the functions and values of a wetland or wetland buffer. These activities include:

1. Activities in wetlands in areas managed according to a special area management plan or other plan adopted by the department and specifically designed to protect wetland resources.
2. Trimming of vegetation for purposes of providing view corridors will be allowed; provided, that trimming shall be limited to view corridors of a maximum 20-foot width and that benefit to fish and wildlife habitat are not reduced. Trimming shall be limited to hand pruning of branches and vegetation. Trimming shall not include felling, topping, or removal of trees. (Ord. 02-200 § 2).
3. Drilling for utilities/utility corridors under a wetland, with entrance/exit portal located completely outside of the wetland buffer, provided that the drilling does not interrupt the ground water connection to the wetland or percolation of surface water down through the soil column. Specified studies by a hydrologist are necessary to determine whether the ground water connection to the wetland or percolation of surface water down through the soil column will be disturbed.

14.340.060 Mitigation requirements.

A. Mitigation. Compensatory mitigation is required for all unavoidable alterations to wetlands or their buffers, except for buffer averaging when done in accordance with **EMC 14.30.025(C)(1)**. Compensatory mitigation actions shall replace functions affected by the alteration and shall provide equal or greater functions compared to the impacted wetland. All projects must first demonstrate compliance with **EMC 14.10.080(B)** (Mitigation Sequencing) prior to development of compensatory mitigation plans.

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B. Preference of Mitigation Actions. Compensatory wetland mitigation shall occur in the following order of preference:

1. Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former or degraded wetland. For the purpose of tracking net gains in wetland acres, restoration is divided into:

- a. Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former wetland. Re-establishment results in a gain in wetland acres (and functions). Activities could include removing fill material, plugging ditches, or breaking drain tiles.

- b. Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of 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

2. Creation: The manipulation of the physical, chemical, or biological characteristics of a site to develop a wetland on an upland or deepwater site where a wetland did not previously exist. Creation results in a gain in wetland acres. Activities typically involve excavation of upland soils to elevations that will produce a wetland hydroperiod, create hydric soils, and support the growth of hydrophytic plant species.

3. Enhancement: The manipulation of the physical, chemical, or biological characteristics of a wetland site to heighten, intensify, or improve specific function(s) or to change the growth stage or composition of the vegetation present. Enhancement is undertaken for specified purposes such as water quality improvement, flood water retention, or wildlife habitat. Enhancement results in a change in some wetland functions and can lead to a decline in other wetland functions, but does not result in a gain in wetland acres. Activities typically consist of planting vegetation, controlling non-native or invasive species, modifying site elevations or the proportion of open water to influence hydroperiods, or some combination of these activities

C. Approaches to Compensatory Mitigation. Mitigation for alterations to wetland and their buffers shall rely on the approaches listed below.

1. Wetland Mitigation Banks. Credits from a certified wetland mitigation bank may be used to compensate for impacts within the service area specified in the mitigation bank instrument. Use of credits from a wetland mitigation bank certified under Chapter 173-700 WAC is allowed if:

- a. The department determines that it would provide appropriate compensation for the proposed impacts; and
 - b. The impact site is located in the service area of the bank.
 - c. The proposed use of credits is consistent with the terms and conditions of the certified bank instrument.
 - d. Replacement ratios for projects using bank credits is consistent with replacement ratios specified in the certified mitigation bank instrument.
2. In-Lieu Fee Mitigation. Credits from an approved in-lieu-fee program may be used when all the following apply:
- a. The approval authority determines that it would provide environmentally appropriate compensation for the proposed impacts.
 - b. The proposed use of credits is consistent with the terms and conditions of the approved in-lieu-fee program instrument.
 - c. Project using in-lieu-fee credits shall have debits associated with the proposed impacts calculated by the applicant's qualified wetland scientist using the credit assessment method specified in the approved instrument for the in-lieu-fee program.
 - d. The impacts are located within the service area specified in the approved in-lieu-fee instrument.
3. Permittee-responsible mitigation. In this situation, the permittee performs the mitigation after the permit is issued and is ultimately responsible for implementation and success of the mitigation. Permittee-responsible mitigation may occur at the site of the permitted impacts or at an off-site location within the same watershed. If available, the use of wetland mitigation banks and in-lieu-fee programs are preferable to permittee-responsible mitigation.

D. Wetland mitigation ratios. The ratios listed in Table 14.340.060 apply to permittee-responsible mitigation. The first number specifies the acreage of replacement wetlands required, and the second number specifies the acreage of wetlands altered or relocated.

Table 14.340.060
Wetland Mitigation Ratios

Category and Type of Wetland	Creation or Re-establishment	Rehabilitation	Enhancement
Category I: High conservation value/bog	Not considered possible	Not considered possible	Not considered possible
Category I: Mature and old growth forest	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

The director may increase the ratios under the following circumstances:

1. Uncertainty as to the probable success of the proposed restoration or creation;
2. Significant period of time between destruction and replication of wetland values;
3. Projected losses in functional value;
4. The compensatory mitigation is off site.

E. Wetland buffer mitigation. To mitigate unavoidable impacts to functions and values of wetland buffers, a minimum buffer ratio of 1:1 (alteration area: mitigation area) is required. This ratio assumes that creation/restoration of a wetland buffer with appropriate native vegetation is sufficient to compensate for the wetland buffer functions and values affected by alteration of an existing wetland buffer. If enhancement of an existing wetland buffer is proposed as mitigation, a higher mitigation ratio may be required. For any proposed wetland buffer activities, the applicant must demonstrate that the functions and values of the altered wetland buffer will be fully replaced by the proposed mitigation. The department may increase the buffer mitigation ratios under the following circumstances:

1. The replacement ratio needed to recover the lost functions and values of buffer area is greater than 1:1 based upon the existing type of vegetative cover of either the impact site or the proposed mitigation site.
2. Uncertainty exists as to the probable success of the proposed restoration or creation;
3. A significant period of time will elapse between impact and replication of wetland functions;
4. The impact was an unauthorized impact.

F. Wetland and buffer mitigation plans. Compensatory wetland mitigation plans shall be consistent with Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans (Ecology, 2006); and Selecting Wetland Mitigation Sites Using a Watershed Approach (Ecology, 2009), or as revised. Mitigation plans shall comply with the requirements established in EMC 14.340.070, Appendix B.

14.340.070 Appendices.

A. Wetland Report.

B. Wetland Mitigation Plan

APPENDIX A

WETLAND REPORT

A. A wetland critical areas report shall, at a minimum, include the following:

1. The general critical areas report requirements in **EMC 14.10.082**;
2. Map showing the location of all wetlands and required buffers within three hundred (300) feet of the proposed development;
3. An analysis of the onsite wetland(s) include the following site- and proposal-related information:

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- a. Documentation of any fieldwork performed on the site, including, but not limited to, field delineation data sheets for delineations and wetland rating forms;
 - b. Wetland acreage;
 - c. Wetland category;
 - d. A discussion of the water sources supplying the wetland and documentation of hydrologic regime (locations of inlet and outlet features, water depths throughout the wetland, evidence of recharge or discharge);
 - e. A discussion of the functions of existing wetlands, including vegetative, faunal, and hydrologic conditions; and
 - f. A description of the methodologies used to conduct the wetland delineations;
4. A discussion of measures, including avoidance, minimization, and mitigation, proposed to preserve existing wetlands;
 5. A detailed discussion of the direct and/or indirect potential impacts on the wetland by the project; and
 6. The wetland mitigation plan requirements of EMC 14.340.070, Appendix B, if the activity will result in unavoidable impacts to wetlands or their buffers.

APPENDIX B

WETLAND MITIGATION PLAN

A. A wetland mitigation plan shall, at a minimum, include the following:

1. The general mitigation plan requirements in **EMC 14.10.083** and the following information:
2. Existing and proposed wetland acreage;
3. Vegetative and faunal conditions;
4. Surface and subsurface hydrologic conditions including an analysis of existing and future hydrologic regime and proposed hydrologic regime for enhanced, created, or restored mitigation areas;
5. Relationship within watershed and to existing waterbodies;
6. Soils and substrate conditions, topographic elevations;
7. Existing and proposed adjacent site conditions;
8. Required wetland buffers (including any buffer reduction or averaging and mitigation proposed to enhance buffers);
9. Property ownership;
10. A discussion of ongoing management practices that will protect wetlands after the project site has been developed, including proposed monitoring and maintenance programs;
10. A bond estimate for the installation (including site preparation, plant materials and installation, fertilizers, mulch) and the proposed monitoring and maintenance work for the required number of years, pursuant to **EMC 14.10.080(E)**.

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Chapter 14.450

CRITICAL FISH AND WILDLIFE HABITAT CONSERVATION AREAS

Sections:

- 14.450.010 Purpose.
- 14.450.020 Fish and wildlife habitat conservation area identification and classification.
- 14.450.02530 Buffer standards—Fish and wildlife habitat conservation areas.
- 14.450.0340 Fish and wildlife habitat conservation area review procedures.
- 14.450.0450 Allowed activities.
- 14.450.0560 Alteration of Watercourses.
- 14.450.0670 Mitigation requirements.
- 14.450.0780 Appendix

14.450.010 Purpose.

Many land use activities can impact the habitats of fish and wildlife. Special care must be taken in the management of lands that support fish and wildlife species to ensure that development occurs in a manner that is sensitive to their habitat needs. The purpose of this chapter is to identify fish and wildlife habitat conservation areas and establish habitat protection procedures and mitigation measures that are designed to result in no net loss of habitat functions and values. (Ord. 02-200 § 2).

14.450.020 Fish and wildlife habitat conservation area identification and classification.

A. Designation. Fish and wildlife habitat conservation areas include:

1. Waters of the state. Waters of the state include lakes, rivers, ponds, streams, and all other surface waters and watercourses within jurisdiction of the state of Washington, as classified in WAC 222-16-030.
2. Areas with which federally designated endangered, threatened, and sensitive species have a primary association. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service should be consulted for current federal listing status.
3. Areas with which state designated endangered, threatened, and sensitive species have a primary association. The Washington State Department of Fish and Wildlife should be consulted for current state listing status.
4. State priority habitats and areas associated with state priority species. The state Department of Fish and Wildlife should be consulted for current listing of priority habitats and species.
5. Habitats and species of local importance. The following fish and wildlife species and their associated habitat areas shall be regulated under this chapter:
 - a. Fish. Coho salmon (*Oncorhynchus kisutch*), pink salmon (*Oncorhynchus gorbuscha*), chum salmon (*Oncorhynchus keta*), cutthroat trout (*Oncorhynchus clarkia*), and steelhead (*Oncorhynchus mykiss*).
 - b. Birds. Great blue heron (*Ardea herodias*) and green heron (*Butorides virescens*).
 - c. Areas with which state-listed monitor or candidate fish or wildlife species or federally listed candidate fish or wildlife species have a primary association, and which if altered may reduce the likelihood that the species will survive and reproduce over the long term.
 - d. Heron rookeries.

B. Habitat boundary survey. If the department determines that a regulated habitat conservation area may be present within the project vicinity, the department may require the habitat area to be delineated and/or mapped by a qualified fisheries biologist or wildlife biologist who is knowledgeable of fish and wildlife habitat within western Washington,

or by the Washington Department of Fish and Wildlife. The boundary of aquatic habitats shall be the ordinary high water mark of the waterbody. The management recommendations for Washington's priority habitats and species or federal equivalent should be used as a tool for identifying and delineating wildlife habitat boundaries. The city may waive this requirement if there is adequate information available on the area proposed for development to determine the impacts of the proposed development and appropriate mitigating measures.

C. Mapping. The approximate location and extent of waters of the state and fish presence within the city are shown on maps maintained by the city. The city shall update the maps periodically as new information becomes available. The approximate location and extent of other fish and wildlife habitat conservation areas are shown on maps maintained by the Washington State Department of Fish and Wildlife and other state and federal agencies. These maps are to be used as a guide and do not provide definitive information about fish and wildlife habitat conservation area size or presence. Fish and wildlife habitat conservation areas may exist that do not appear on the maps.

D. Waters of the state classification. The city hereby adopts the water typing system specified in WAC 222-16-030, as described below:

1. Type S. All waters, within their ordinary high water mark, meeting the criteria as "shorelines of the state" and "shorelines of statewide significance" under RCW Chapter 90.58. As of the effective date of this title, there are no Type S streams within city jurisdiction.
2. Type F: segments of natural waters other than Type S Waters, which are within the bankfull widths of defined channels and periodically inundated area of their associated wetlands, or within lakes, ponds, or impoundments having a surface area of 0.5 acre or greater at seasonal low water and which in any case contain fish habitat.
3. Type Np: all segments of natural waters within the bankfull width of defined channels that are perennial non-fish habitat stream. Perennial stream waters 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.
4. Type Ns: All segments of natural waters within the bankfull width of the defined channels that are not Type S, F, or Np waters. These are seasonal, non-fish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np Water. Ns Waters must be physically connected by an above-ground channel system to Type S, F, or Np Waters.

14.450.02530 Buffer standards—Fish and wildlife habitat conservation areas.

A. Determining buffer widths. Buffers shall be required as set forth for each habitat type. The required buffers shall be delineated, both on a site plan or plat, and on the property prior to approval of any regulated activity.

1. Aquatic habitat conservation areas.

- a. Buffers for aquatic habitat conservation areas shall be based upon the water type classification of the water body as specified in WAC 22-16-030. Refer to Table 14.450.02530 for the water types and the associated buffer requirements.
- b. The required buffer width shall be measured in all directions from the ordinary high water mark.
- c. The required buffer shall be extended to include any adjacent regulated wetland(s), landslide hazard areas, and/or erosion hazard areas and required buffers.

2. Non-aquatic habitat conservation areas. Appropriate buffers for critical habitat areas and species not listed in Table 14.450.02530 shall be determined by the Washington Department of Fish and Wildlife or by a qualified wildlife biologist and documented in an approved habitat management plan.

Table 14.450.02530
Buffer Standards

Water Type	Buffer Width ¹
Type S	150 ft. ²
Type F	100 ft.
Type Np	60 ft.
Type Ns	35 ft.

¹ In the event that buffers for any habitat conservation area or other critical area are contiguous or overlapping, the landward-most edge of all such buffers shall apply.

² As of the effective date of this title, there are no Type S streams within city jurisdiction.

BC. Modification to Buffer Width Requirements. The standard buffer widths of subsection (A) of this section may be modified as follows:

1. Buffer Width Reductions. A buffer width reduction may be proposed through submittal of a habitat management plan. Buffer reductions of up to a maximum of 25 percent may be allowed when the applicant demonstrates the following circumstances:

- a. Buffer encroachment is unavoidable.
- b. The existing buffer is predominately un-vegetated, composed of nuisance species, or is in an otherwise highly disturbed condition.
- c. Buffer reduction with enhancement will provide equal or greater protection of current habitat functions and values, and will not adversely affect salmon habitat.
- d. The buffer reduction will not increase the risk of slope failure or downslope stormwater drainage impacts.
- e. The minimum width of the buffer at any given point shall be at least seventy-five (75) percent of the standard width, or twenty-five (25) feet, whichever is greater.
- f. The project includes a buffer enhancement plan as part of the mitigation required by **EMC 14.40.060**. The buffer enhancement plan shall use native plant species.

2. Buffer Width Increases. The department may require increased buffer width(s) when any of the following are identified:

- a. A larger buffer is necessary to maintain viable populations of existing species or protect the existing functions of the habitat area;
- b. The adjacent land is susceptible to severe erosion and erosion control measures will not effectively prevent adverse habitat impacts;
- c. The adjacent land has minimal vegetative cover or slopes greater than 20 percent; or
- d. The habitat area is in an area of high tree blow down potential. In these cases the habitat area may be expanded an additional 50 feet on the windward side.

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14.40.030 Fish and wildlife habitat conservation area review procedures.

A. Habitat management plan. When the department's maps, sources, or field investigations indicate that the proposed project area is located within 300 feet of a known or suspected fish or wildlife habitat conservation area, an applicant shall submit a habitat management plan prepared by a qualified fisheries biologist or wildlife biologist. The requirement to provide a habitat conservation plan for habitat conservation areas may be waived if the department determines that there are no potential direct and/or indirect impacts on designated species or habitats that would result from the proposed development. Habitat management plans shall comply with the requirements established in EMC 14.40.070, Appendix A.

14.40.040 Allowed activities.

A. The following activities may be permitted in habitat conservation areas and/or their buffers when all reasonable measures have been taken to avoid and mitigate adverse effects on species and habitats and a net loss of habitat functions will not occur. In order to verify the following conditions, a habitat management plan meeting the requirements of EMC 14.40.070, Appendix A must be submitted.

1. Stream Erosion Control Measures. New or replacement stream erosion control measures shall be subject to the following standards:

- a. The proposal complies with the provisions set forth in Chapter 14.110 EMC.
- b. The required habitat management plan demonstrates the following:
 - i. Natural stream processes will be maintained. The project will not result in increased beach erosion or alterations to, or loss of, stream substrate within one-quarter mile of the site.
 - ii. The stream erosion control measure will not adversely impact fish or wildlife habitat conservation areas or associated wetlands.

2. Docks and launching ramps. Construction, reconstruction, repair, and maintenance of docks and public or private launching ramps are subject to all of the following:

- a. The dock or ramp is located and oriented and constructed in a manner that minimizes adverse effects on water quality, movement of aquatic and terrestrial life, ecological processes, spawning habitat, and wetlands.
- b. Docks and ramps shall meet or exceed all relevant state and federal permit requirements.

3. Roads, Trails, Bridges, and Rights-of-Way. Construction of trails, roadways, bridges, and culverts may be allowed subject to the following standards:

- a. There is no other feasible alternative route with less impact on the environment.
- b. The crossing minimizes interruption of downstream movement of wood, ice, and gravel and the movement of all fish and wildlife.
- c. Stream crossings, where necessary, shall only occur as near to the perpendicular with the stream as possible and be limited to the minimum width necessary.
- d. Road bridges and culverts are designed according to the latest versions of the Washington Department of Fish and Wildlife Water Crossing Design Guidelines (Washington Department of Fish and Wildlife) the Anadromous Salmonid Passage Facility Design guidelines (National Marine Fisheries Service).
- e. Trails and associated viewing platforms shall be made of pervious materials.

4. Utility Facilities. New utility lines and facilities are permitted to cross habitat conservation areas if they comply with the following standards

- a. Avoid fish and wildlife habitat conservation areas to the maximum extent possible.
- b. Cross at an angle greater than 60 degrees to the centerline of the channel in streams or perpendicular to the channel centerline whenever boring under the channel is not feasible.
- c. Crossings are contained within the footprint of an existing road or utility crossing where possible.
- d. Avoid paralleling the stream or following a down-valley course near the channel.
- e. Do not increase or decrease the natural rate of shore migration or channel migration.
- f. Bore beneath the scour depth and hyporheic zone of the water body and channel migration zone (CMZ) where feasible.

5. Public Flood Protection Measures. New public flood protection measures and expansion of existing facilities may be approved, subject to the department's review and approval of a habitat management plan.

6. Instream Structures. New instream structures (e.g., such as, but not limited to, high flow bypass, sediment ponds, instream ponds, retention and detention facilities, dams, weirs, etc.) shall be allowed only as part of an approved mitigation or restoration project or watershed basin plan approved by the department and upon acquisition of any required state or federal permits. The structure shall be designed to avoid modifying flows and water quality in ways that may adversely affect critical fish species. Proposals for placement of water quality, water quantity, or other instruments or structures within a stream to gather data, or as a mitigation measure, shall be exempt from the provisions of this title upon review and approval by the department.

7. Stormwater Conveyance Facilities. Conveyance structures whose sole purpose is to convey stormwater already treated for quality, or water bypassed around water quality treatment facilities pursuant to an approved stormwater plan, may be constructed subject to the following standards:

- a. No other feasible alternatives with less impact exist;
- b. Mitigation for impacts is provided;
- c. Stormwater conveyance facilities shall incorporate fish habitat features;
- d. Vegetation shall be maintained and, if necessary, added adjacent to all open channels and ponds in order to retard erosion, filter out sediments, and shade the water.

8. On-Site Sewage Systems and Wells.

- a. New on-site sewage systems and individual wells are permitted if accessory to an approved structure.
- b. Repairs to failing on-site sewage systems associated with an existing structure shall be accomplished by utilizing one of the following methods that result in the least impact:
 - i. Connection to an available public sewer system;
 - ii. Replacement with a new on-site sewage system located in a portion of the site that has already been disturbed by development and is located landward as far as possible, provided the proposed sewage system is in compliance with the provisions in Chapter 14.70 EMC; or
 - iii. Repair to the existing on-site septic system.

B. The activities listed below are allowed in habitat conservation areas and their buffers, and do not require submission of a habitat management plan, except where such activities would result in a loss of the functions and values of habitat conservation areas or buffers.

1. Vegetation Removal, Disturbance, and Introduction. Limited vegetation removal shall be allowed subject to EMC 18.90.180 (tree preservation) and the following standards:

a. Hazard trees may be cut; provided, that:

i. The applicant submits a report from a certified arborist, licensed architect, or professional forester that documents the hazard and provides a replanting schedule for the replacement trees and receives written approval from the city authorizing the tree removal;

ii. Tree cutting shall be limited to limbing and crown thinning, unless otherwise justified by the landowner's expert. Where limbing or crown thinning is not sufficient to address the hazard, trees should be topped to remove the hazard rather than cut at or near the base of the tree. All vegetation cuttings (tree stems, branches, tops, etc.) shall be left within the habitat area or buffer unless removal is warranted due to the potential for disease transmittal to other healthy vegetation;

iii. The landowner shall replace any trees that are felled or topped with new trees at a ratio of two replacement trees for each tree felled or topped. Tree species that are native and indigenous to the site shall be used;

iv. Hazard trees determined to pose an imminent threat or danger to public health or safety, or to public or private property, or serious environmental degradation may be removed or topped by the landowner prior to receiving written approval from the department; provided, that within 14 days following such action, the landowner shall submit the necessary report and replanting schedule demonstrating compliance with subsections (B)(1)(a)(i) through (iii) of this section.

b. Trimming of vegetation for purposes of providing view corridors will be allowed; provided, that trimming shall be limited to view corridors of 20 feet in width or less, that no more than 30 percent of the live crown is removed, and that benefits to fish and wildlife habitat are not reduced. Trimming shall be limited to hand pruning of branches and vegetation. Trimming shall not include felling, topping, or removal of trees.

2. Fencing. Fencing shall be placed in such a manner as to maintain wildlife movement corridors and not create any fish passage blockages. The department shall approve the location, type, and height of any proposed fencing.

14.40.050 Alteration of Watercourses

Alteration of Watercourses. Any alteration of a watercourse shall comply with the following standards:

1. The city will notify adjacent communities and the Washington State Department of Ecology prior to any alteration or relocation of a watercourse proposed by the applicant and submit evidence of such notification to the Federal Insurance Administration.

2. The city shall require that maintenance be provided within the altered or relocated portion of said watercourse, so that the flood-carrying capacity is not diminished. Therefore, if the maintenance program calls for future cutting of planted native vegetation used in performing the alteration, the system shall be oversized at the time of construction to compensate for said vegetation growth or any other natural factor that may need future maintenance.

3. Alterations and relocations, including stabilization projects, shall not degrade fish habitat and shall be subject to the following provisions:

a. Structures that cross all watercourses and water bodies shall meet fish habitat requirements of the Washington Department of Fish and Wildlife.

b. Any culverts that are used on fish-bearing watercourses shall be arch/bottomless culverts or equivalent that provide comparable fish protection, and must meet fish habitat requirements of the latest edition of Washington Department of Fish and Wildlife's Design Manual for Culverts.

c. Bridges or other crossings shall allow for uninterrupted downstream movement of wood and gravel, be as close to perpendicular to the watercourse as possible, and be designed to minimize fill and to pass the base flood flows.

d. Watercourse alterations shall maintain natural meander patterns, channel complexity, and floodplain connectivity. Where feasible, such characteristics shall be restored as part of the watercourse alteration.

e. The applicant shall identify the channel migration zone for the watercourse at the project site and for a reasonable reach upstream and downstream of the site, and shall not undertake actions as part of the alteration that would in any way inhibit movement of the channel.

f. Existing culverts that do not meet fish habitat requirements shall be removed or replaced as part of the approved watercourse alteration project.

g. Watercourse alteration projects shall not result in a fish blockage of side channels. Known fish barriers into side channels shall be removed as part of the approved watercourse alteration project.

h. For any watercourse alteration of a Type S or F water (pursuant to EMC 14.40.020(D)) whose channel is subject to migration, bioengineered (soft) armoring of streambanks is required to allow for woody debris recruitment, gravels for spawning, and creation of side channels. The bioengineering technique used must be designed in accordance with the latest edition of Washington Department of Fish and Wildlife's Integrated Streambank Protection Guidelines.

4. The project engineer shall design the watercourse alteration so the activity does not increase the water surface elevation (zero-rise); decrease the capacity, storage, and conveyance of the watercourse; or cause an adverse impact to adjacent, cross-channel, or upstream or downstream properties. (Ord. 17-492 § 2 (Exh. A); Ord. 02-200 § 2).

14.40.060 Mitigation requirements.

A. Mitigation. Compensatory mitigation is required for all unavoidable alterations to fish and wildlife habitat conservation areas or their buffers. Mitigation of alteration to habitat areas shall achieve equivalent or greater biological functions. Mitigation shall address each functional attribute affected by the alteration to achieve functional equivalency or improvement on a per function basis. Mitigation elements to be addressed may include, but are not limited to: restoration of previously degraded areas and key habitat features, restoration of riparian vegetation communities to provide shade and large woody debris, addition of large woody debris, and installation of upland habitat features. All projects must first demonstrate compliance with EMC 14.10.080(B) (Mitigation Sequencing) prior to development of compensatory mitigation plans.

B. Type of mitigation required. In determining the extent and type of mitigation required, the department may consider all of the following:

1. The ecological processes that affect and influence habitat structure and function within the watershed or sub-basin;
2. The individual and cumulative effects of the action upon the functions of the critical area and associated watershed;
3. Observed or predicted trends regarding the gains or losses of specific habitats or species in the watershed, in light of natural and human processes;
4. The likely success of the proposed mitigation measures;
5. Effects of the mitigation actions on neighboring properties; and
6. Opportunities to implement restoration actions formally identified by an adopted shoreline restoration plan, watershed planning document prepared and adopted pursuant to Chapter [90.82](#) RCW, a salmonid

recovery plan or project that has been identified on the Salmon Recovery Board Habitat Project List or by the Washington State Department of Fish and Wildlife as essential for fish and wildlife habitat enhancement.

C. Location. Compensatory mitigation shall be provided on-site or off-site in the location that will provide the greatest ecological benefit to the species and/or habitats affected and have the greatest likelihood of success. Mitigation shall occur as close to the impact site as possible, within the same sub-basin, and in a similar habitat type as the permitted alteration unless the applicant demonstrates to the satisfaction of the department through a watershed- or landscape-based analysis that mitigation within an alternative sub-basin of the same watershed would have greater ecological benefit.

D. Mitigation plans. When required by this chapter, the applicant shall submit a fish and wildlife habitat conservation area mitigation plan meeting the requirements of EMC 14.40.060.

14.40.070. Appendix.

APPENDIX A

HABITAT MANAGEMENT PLAN

A. A habitat management plan shall, at a minimum, include the following:

1. The general critical areas report requirements in EMC 14.10.082.
2. Identification of any endangered, threatened, sensitive, or candidate species that have a primary association with habitat on the project area;
3. Map showing the location of the ordinary high water mark and/or locations of wildlife habitat conservation area(s) and their buffers in accordance with EMC 14.40.025;
4. The vegetative, faunal, topographic, and hydrologic characteristics of the habitat conservation area;
5. A discussion of any federal, state, or local special management recommendations, including Washington Department of Fish and Wildlife habitat management recommendations, that have been developed for species or habitat located on or adjacent to the project area;
6. A detailed discussion of the direct and/or indirect potential impacts on the habitat conservation area by the project. Such discussion shall include a discussion of the ongoing management practices that will protect habitat after the project site has been developed;
7. The mitigation plan requirements of EMC 14.10.083 if the activity will result in unavoidable impacts to habitat conservation areas. Mitigation measures may include:
 - a. Prohibition or limitation of use and development activities within the habitat conservation area;
 - b. Retention of vegetation and/or re-vegetation of areas/habitats critically important to species;
 - c. Special construction techniques;
 - d. Implementation of erosion and sediment control measures;
 - e. Habitat restoration or enhancement (i.e., fish passage barrier removal);
 - f. Seasonal restrictions on construction activities on the subject property;
 - g. Clustering of development activities on the subject property; and/or
 - h. Any other requirements and/or recommendations from federal, state, or local special management recommendations, including the Washington State Department of Fish and Wildlife's habitat management guidelines.

Chapter 14.50

CRITICAL AQUIFER RECHARGE AREAS

Sections:

- 14.50.010 Purpose.
- 14.50.020 Critical aquifer recharge area identification.
- 14.50.030 Critical aquifer recharge area review procedures.
- 14.50.040 Critical aquifer recharge area standards.

14.50.010 Purpose.

The purpose of this chapter is to protect critical aquifer recharge areas from degradation or depletion resulting from new or changed land use activities. Due to the exceptional susceptibility and/or vulnerability of groundwater underlying aquifer recharge areas to contamination and the importance of such groundwater as sources of public water supply, it is the intent of this chapter to safeguard groundwater resources and wellhead protection areas by mitigating or precluding future discharges of contaminants from new land use activities. (Ord. 02-200 § 2).

14.50.020 Critical aquifer recharge area identification.

A. General. Critical aquifer recharge areas are areas that have a critical recharging effect on groundwater used for potable water supplies and/or that demonstrate a high level of susceptibility or vulnerability to groundwater contamination from land use activities. These areas include the following:

1. Aquifer Recharge Areas. The boundaries of the two highest DRASTIC zones that are rated 180 and above on the DRASTIC index range, as identified in Map of Groundwater Pollution Potential, Edgewood, Washington, National Water Well Association, U.S. Environmental Protection Agency;
2. Wellhead Protection Areas. Wellhead protection areas that lie within the 10-year time of travel zone boundary of a group A public water system well, as delineated by the water system purveyor or its designee, pursuant to WAC 246-290-135; and
3. Sole Source Aquifers. Sole source aquifers are areas that have been designated by the U.S. Environmental Protection Agency pursuant to the Federal Safe Water Drinking Act. As of the effective date of this title, there are no designated sole source aquifers within city limits.

14.50.030 Critical aquifer recharge area review procedures.

A. General Requirements

1. The city's critical aquifer recharge area map provides an indication of where critical aquifer recharge areas are located within the city and the map is updated as necessary.
2. Any proposed development located within protection critical aquifer recharge area shall comply with the standards set forth in EMC 14.50.040.
3. Any hazardous uses, as defined in EMC 14.50.040, shall require the submittal of a hydrogeologic assessment, as set forth in subsection (B) of this section.
4. The department may waive some of the critical area protective measure provisions contained in EMC 14.10.080, as deemed appropriate by the Department Director and can be shown to meet the requirements associated with Best Available Science, if required.

B. Hydrogeologic Assessment.

1. The hydrogeologic assessment shall be prepared, signed, and dated by a state licensed geologist/hydrogeologist.

2. The hydrogeologic assessment shall be submitted in the form of a report detailing the subsurface conditions, the design of a proposed land use action, and the facilities operation which indicates the susceptibility and potential for contamination of groundwater supplies. The hydrogeologic assessment shall, at a minimum, include the general critical area report requirements of EMC 14.10.082 in addition to the following:

- a. Information sources;
- b. Geologic setting – includes well logs or borings used to identify information;
- c. Background water quality;
- d. Groundwater elevations;
- e. Location/depth to perched water tables;
- f. Recharge potential of facility site (permeability/transmissivity);
- g. Groundwater flow direction and gradient;
- h. Current available data on wells located within one-quarter mile of the site;
- i. Current available data on any spring within one-quarter mile of the site;
- j. Surface water location and recharge potential;
- k. Water source supply to facility (e.g., high capacity well);
- l. Any sampling schedules necessary;
- m. Discussion of the effects of the proposed project on the groundwater resource;
- n. Discussion of potential mitigation measures, should it be determined that the proposed project will have an adverse impact on groundwater resources; and
- o. Any other information as required by the TPCHD, including information required under Washington Department of Ecology Publication 97-30.

C. Storage Tank Permits. In addition to the requirements set forth in this title, the following agencies also have the authority to regulate the installation, repair, replacement, or removal of underground storage tanks:

1. The Pierce County Fire Prevention Bureau regulates and authorizes permits for underground storage tanks, pursuant to the International Fire Code (Article 79) and this chapter.
2. The Washington Department of Ecology regulates and authorizes permits for underground storage tanks (Chapter 173-360 WAC).
3. The TPCHD regulates and authorizes permits for the removal of underground storage tanks (Pierce County Code, Chapter 8.34). (Ord. 02-200 § 2).

14.50.040 Critical aquifer recharge area standards.

A. General. All regulated activities that are not exempt or prohibited under the provisions of this chapter shall ensure sufficient groundwater recharge. In order to achieve sufficient groundwater recharge, the applicant shall comply with city's adopted stormwater manual (Chapter 13.05 EMC) and demonstrate that the total post-development infiltration rate for the project area will be equal to or better than the predevelopment rate.

B. Prohibited Uses. Landfills (other than inert and demolition landfills), Class I, III, and IV underground injection wells, metals mining, wood treatment facilities, pesticide manufacturing, petroleum refining facilities (including distilled petroleum facilities), the storage of large volumes of petroleum products, and other uses or activities

determined by the department to have a significant adverse impact on ground water are prohibited within critical aquifer recharge areas.

C. Exemptions. In addition to the general exemptions listed in EMC 14.20.030, the following uses or activities are exempt from the requirements of this chapter:

1. Sewer lines and appurtenances;
2. Biosolids and sludge land application sites; provided, that these activities comply with the requirements established in Chapters 173-200, 173-216, and 173-304 WAC; and
3. Single-family and two-family dwellings and associated accessory structures.

D. Agricultural Activities. New agricultural activities that do not involve hazardous substance handling or application are allowed within an aquifer recharge or wellhead protection area subject to the following:

1. The applicant is required to submit a farm management plan prepared by the USDA, NRCS, Pierce County Conservation District, or Washington State University, Cooperative Extension Office, that certifies that water quality and quantity within the aquifer recharge area is maintained. The farm management plan shall at a minimum address the following:
 - a. The limits of the proposed agricultural activities.
 - b. The proposed scope of agricultural activities, including the use of any pesticides, fertilizers, or other chemicals.
 - c. The existing nitrate levels on the site and any proposed increases in nitrate levels.
2. Integrated pest management (IPM) practices for pest control and best management practices (BMPs) for the use of fertilizers, as described by the Washington State University, Pierce County Cooperative Extension Office, shall be utilized.
3. Nitrate levels at down-gradient property line shall not exceed 2.5 mg/L or, if the background nitrate concentration exceeds 2.5 mg/L, that the concentration will not be increased more than 0.1 mg/L.
4. Additional protective measures may be required if deemed necessary by the department or TPCPD to protect public health or safety.

ED. Nonhazardous Uses. Subdivision of land as defined in EMC Title 16, residential structures housing three or more units and all commercial and industrial sites or activities that do not include or involve hazardous substance processing or handling in protection critical aquifer recharge area are allowed subject to the following standards:

1. Stormwater quality treatment and flow control shall be provided in conformance with the city's adopted stormwater management manual.
2. Floor drains shall not be allowed to drain to the stormwater system and must be designed and installed to meet the Uniform Plumbing Code (UPC) Section 303.
3. If any roof venting carries contaminants, then the portion of the roof draining from this area must go through pretreatment pursuant to UPC Section 304(b).
4. All nonresidential vehicle washing must be self-contained or be discharged to a sanitary sewer system, if approved by the sewer utility, and is subject to UPC Sections 708 and 711.
5. Integrated pest management (IPM) practices for pest control and best management practices (BMPs) for the use of fertilizers as described by the Washington State University, Pierce County Cooperative Extension Office, shall be utilized.

6. For new or changes in regulated activities served by on-site sewage systems, the applicant must demonstrate to the TPCHD that nitrate levels at the down-gradient property line will not exceed 2.5 mg/L or that if the background nitrate concentration exceeds 2.5 mg/L the concentration will not be increased more than 0.1 mg/L.

7. Additional protective measures may be required if deemed necessary by the department or TPCHD to protect public health or safety.

EE. Hazardous Uses – General. Hazardous substance processing or handling, hazardous waste treatment and storage facilities, animal containment areas, and solid waste facilities that require a solid waste handling permit from the TPCHD, requiring approval from the city, shall be allowed only in protection critical aquifer recharge area subject to review and approval of a hydrogeologic assessment by the department and review by the TPCHD. The department has the authority to apply whatever standards deemed necessary to mitigate any negative impacts that may be associated with the proposed development and will consider comments by TPCHD.

GF. Hazardous Uses – Storage Tanks. In addition to the requirement to submit a hydrogeologic assessment, the following standards apply to storage tanks in protection critical aquifer recharge area:

1. Underground Tanks. All new underground storage facilities used or to be used for the underground storage of hazardous substances or hazardous wastes shall be designed and constructed so as to:

- a. Prevent releases due to corrosion or structural failure for the operational life of the tank;
- b. Be protected against corrosion, constructed of noncorrosive material, steel clad with a noncorrosive material, or designed to include a secondary containment system to prevent the release or threatened release of any stored substance;
- c. Use material in the construction or lining of the tank which is compatible with the substance to be stored; and
- d. The installation of underground storage tanks shall also be subject to other state and local permit requirements.

2. Aboveground Tanks.

- a. No new aboveground storage facility or part thereof shall be fabricated, constructed, installed, used, or maintained in any manner which may allow the release of a hazardous substance to the ground, groundwater, or surface waters of the city within a critical aquifer recharge area.
- b. A new aboveground tank that will contain a hazardous substance will require both a double-walled tank and a secondary containment system separate from the tank that will hold 110 percent of the tank's capacity. The secondary containment system or dike system must be designed and constructed to contain material stored in the tank(s). (Ord. 16-482 § 2 (Exh. C); Ord. 02-200 § 2).

Chapter 14.60

VOLCANIC HAZARD AREAS

Sections:

- 14.60.010 Purpose.
- 14.60.020 Volcanic hazard areas.
- 14.60.030 Volcanic hazard area review procedures.
- 14.60.040 Volcanic hazard area standards.

14.60.010 Purpose.

At over 14,411 feet high, Mount Rainier dominates the skyline of the southern Puget Sound region. This glacier-clad mountain is a dormant volcano capable of generating large floods and lahars which have historically reached the floors of the lowlands south of the city of Seattle and out to Commencement Bay in the Port of Tacoma, spewing ash from pyroclastic eruptions. The purpose of this chapter is to promote the public health, safety, and general welfare of the citizens of Edgewood by providing standards that minimize the loss of life that may occur as a result of volcanic events emanating from Mount Rainier. (Ord. 02-200 § 2).

14.60.020 Volcanic hazard areas.

A. General. Volcanic hazard areas are areas subject to pyroclastic flows, lava flows, and inundation by debris flows, mudflows, or related flooding resulting from geologic and volcanic events on Mount Rainier.

B. Volcanic Hazard Area Categories. Volcanic hazard areas are areas that have been historically inundated by Case I, Case II, or Case III lahars or other types of debris flow; affected by pyroclastic flows, pyroclastic surges, lava flows, or ballistic projectiles in future eruptions; or are located in other drainages expected to be inundated by a future Case I, Case II, or Case III debris flow. Volcanic hazard areas are classified into the following categories:

1. Inundation Zone for Case I Lahars. Areas that could be affected by cohesive lahars that originate as enormous avalanches of weak chemically altered rock from the volcano. Case I lahars can occur with or without eruptive activity. The average reoccurrence rate for Case I lahars on Mount Rainier is about 500 to 1,000 years.
2. Inundation Zone for Case II Lahars. Areas that could be affected by relatively large non-cohesive lahars, which most commonly are caused by the melting of snow and glacier ice by hot rock fragments during an eruption, but which can also have a non-eruptive origin. The average time interval between Case II lahars from Mount Rainier is near the lower end of the 100- to 500-year range, making these flows analogous to the so-called "100-year flood" commonly considered in engineering practice.
3. Inundation Zone for Case III Lahars. Areas that could be affected by moderately large debris avalanches or small non-cohesive lahars, glacial outburst floods, or other types of debris flow, all of non-eruptive origin. The average time interval between Case III lahars at Mount Rainier is about one to 100 years.
4. Pyroclastic Flow Hazard Zone. Areas that could be affected by pyroclastic flows, pyroclastic surges, lava flows, and ballistic projectiles in future eruptions. During any single eruption, some drainages may be unaffected by any of these phenomena, while other drainages are affected by some or all phenomena. The average time interval between eruptions of Mount Rainier is about 100 to 1,000 years.

C. Time Travel Zones. The ability to evacuate people from within a volcanic hazard area correlates to the distance from the source of an event (i.e., those areas closest to the event will have less time to evacuate than those areas farther away from the source of an event). The amount of time that is anticipated for a debris flow, lahar, flood, or avalanche to travel geographically has been classified into the following time travel zones:

1. Time Zone A. Time Zone A is an estimated one-hour travel distance from the source of the event.
2. Time Zone B. Time Zone B is an estimated one and one-half hour travel distance from the source of the event.
3. Time Zone C. Time Zone C is an estimated two-hour travel distance from the source of the event.

4. Time Zone D. Time Zone D is an estimated two hours or greater travel distance from the source of the event. (Ord. 02-200 § 2).

14.60.030 Volcanic hazard area review procedures.

A. The City's Critical Areas Atlas – Volcanic Hazard Area Map provides an indication of where volcanic hazard areas are located within the city.

B. The department will complete a review of the volcanic hazard area maps for any development proposal to determine whether the proposed project area for a regulated activity falls within a volcanic hazard area.

C. When the department's maps or sources indicate that the proposed project area for a regulated activity is located within a volcanic hazard area, the department shall apply the standards for regulated activities in volcanic hazard areas, as set forth in EMC 14.60.040.

14.60.040 Volcanic hazard area standards.

The following standards apply within the inundation zones for Case I, II, and III lahars and within the pyroclastic flow hazard zone (refer to Table 14.60.040):

A. Bonus densities, as set forth in EMC 18.90.080, Housing incentives program, shall be prohibited.

B. All critical facilities, as defined in Chapter 14.15 EMC, shall be prohibited, except sewer collection facilities and any other utilities that are located underground or not likely to cause harm to people or the environment if inundated by a lahar.

C. Special occupancy structures, as defined in Chapter 14.15 EMC, are subject to the following:

1. Time Travel Zone A. Special occupancy structures located within the Time Travel Zone A area shall be limited to a maximum 100-person occupancy.
2. Time Travel Zone B. Special occupancy structures located within the Time Travel Zone B area shall be limited to a maximum 500-person occupancy.
3. Time Travel Zone C. Special occupancy structures located within the Time Travel Zone C area shall be limited to a maximum 1,000-person occupancy.
4. Time Travel Zone D. Special occupancy structures located within the Time Travel Zone D area shall be limited to a maximum 5,000-person occupancy.

Table 14.60.040 Volcanic Hazard Area Standards

Facility/Occupancy List	Case I Lahar Inundation Zone	Case II Lahar Inundation Zone	Case III Lahar Inundation Zone	Pyroclastic Flow Hazard Zone
Bonus Densities ⁽¹⁾	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Critical Facilities ⁽²⁾	Not Allowed	Not Allowed	Not Allowed	Not Allowed
Special Occupancies ⁽³⁾	In Time Travel Zone A – Limited to 100 person occupant load. In Time Travel Zone B – Limited to 500 person occupant load. In Time Travel Zone C – Limited to 1,000 person occupant load. In Time Travel Zone D – Limited to 5,000 person occupant load.			
Other Occupancies	No Limitation	No Limitation	No Limitation	No Limitation

(1) Bonus density as set forth in EMC 18.90.080, Housing incentives program.

I

- (2) Essential facility as defined in EMC Chapter 14.15 EMC.
- (3) Special occupancy structures as defined in Chapter 14.15 EMC
(Ord. 02-200 § 2).

Chapter 14.70

FLOOD HAZARD AREAS

Sections:

- 14.70.010 Purpose.
- 14.70.015 Flood Insurance Study Adoption
- 14.70.020 Flood hazard areas.
- 14.70.030 Flood hazard area review procedures.
- 14.70.040 Flood hazard area standards.
- 14.70.050 Appendices.

14.70.010 Purpose.

The purpose of this chapter is to promote the public health, safety, and general welfare of the citizens of Edgewood. The standards contained in this chapter are intended to minimize public and private losses due to flood conditions in flood hazard areas and provide special criteria necessary for regulated activities located within flood hazard areas of the city. The following statements describe the purpose of this chapter:

- A. Protect human life and health;
- B. Minimize expenditure of public money and costly flood control projects;
- C. Minimize the need for rescue and relief efforts associated with flooding;
- D. Minimize prolonged business interruptions;
- E. Minimize damage to public infrastructure, facilities and utilities;
- F. Minimize damage to critical fish and wildlife habitat areas;
- G. Minimize net loss of ecological functions of floodplains;
- H. Ensure that potential buyers are notified that property is in a flood hazard area;
- I. Ensure that those who occupy flood hazard areas assume responsibility for their actions; and
- J. Qualify Edgewood for participation in the National Flood Insurance Program, thereby giving the citizens of Edgewood the opportunity to purchase flood insurance with particular emphasis to those in flood hazard areas. (Ord. 02-200 § 2).

14.70.015 Flood Insurance Study Adoption

The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for Pierce County, Washington and Incorporated Areas" dated March 7, 2017, with accompanying FIRMs and any map amendments or corrections are hereby adopted by reference and declared to be a part of this title. The Flood Insurance Study and FIRMs are on file at Edgewood City Hall, 2224 104th Avenue East, Edgewood, Washington, 98371. The city may add or delete land from areas of special flood hazard or revise base flood elevations, utilizing best-available information for flood hazard identification in accordance with federal regulations.

14.70.020 Flood hazard areas.

Edgewood regulates the following flood hazard areas:

A. Potential Flood Hazard Areas.

1. Potential flood hazard areas, as depicted on the Critical Areas Atlas – Flood Hazard Area Map, include:

a. Detailed Study Areas.

i. FEMA Flood Insurance Rate Map and Floodway Map AE and AH zones.

ii. Areas within 300 feet horizontal distance from the base flood elevation established for the mapped AE and AH zones.

iii. Areas within five feet of vertical height from the base flood elevation established for the mapped AE and AH zones.

b. Unstudied Areas. FEMA Flood Insurance Rate Map A zones and shaded X zones, and areas within 300 feet horizontal distance from said mapped areas.

c. Natural Waters/Watercourse. Areas within five feet of vertical height above the ordinary high water mark of an identified natural watercourse.

d. Groundwater Flooding Areas. Areas within 300 feet horizontal distance from a mapped groundwater flooding area.

e. Potholes. Areas not identified as a mapped flood hazard area as described above, but within 10 feet of vertical relief from the bottom of an identified pothole or within two feet of vertical relief of a potential surface water spillway or other type of outlet. Potholes may be identified by city topographic mapping, field survey, or site inspections.

f. Channel Migration Zones (CMZs). Channel migration zones shall apply only to those watercourses specifically identified by the city or listed in subsection (B)(4) of this section. In those areas where detailed CMZ studies have been completed and accepted by the department, additional horizontal and vertical review threshold criteria (i.e., 300 feet horizontal and five feet vertical) shall not apply.

2. The Critical Areas Atlas – Flood Hazard Areas Map may not show all potential flood hazard areas that may be necessary for a specific site analysis. The department may make interpretations, where needed, as to the approximate location of the boundaries of potential flood hazard areas. When there is a conflict between the elevations and the mapped potential flood hazard area boundaries, the elevations shall govern.

3. Where there is insufficient information shown on the potential flood hazard area maps, the department may require the applicant to verify that the site is out of the flood hazard area using the flood hazard area review procedures set forth in EMC 14.70.030.

B. Floodway. A floodway is an extremely hazardous area due to the depth and/or velocity of floodwaters, which carry debris, potential projectiles, and have erosion potential. The following areas are regulated by the city as floodways:

1. Regulatory Floodway. Regulatory floodway designated by flood hazard area maps.

2. Deep and/or Fast Flowing Water Areas. Areas of deep and/or fast flowing water shall be regulated as a floodway. Based on the criteria set forth in EMC 14.70.030(E), the department shall make the determination after review and approval of applicant's analysis of whether the project site falls within the floodway area based on deep and/or fast flowing waters.

3. Potholes and Shaded X Zones. That portion of a pothole ~~and—zone~~and zone area that is three feet or greater in depth shall be regulated as a floodway.

4. Channel Migration Zones (CMZs).

a. Channel migration zones shall be regulated as a floodway.

b. Channel migration zones are equivalent to the base flood elevation limits (i.e., 100-year floodplain limits).

C. Flood Fringe. All areas subject to inundation by the base flood, but outside the limits of the floodway as set forth in subsection (B) of this section. Those portions of the A, AE, AH, and shaded X zones not defined as floodway, and that portion of a pothole and FEMA shaded X zone area that is between zero feet (base flood elevation) and three feet in depth shall be regulated as a flood fringe.

D. Other Areas of Special Flood Hazard.

1. Groundwater Flooding Areas. Groundwater flooding areas are those areas identified by Edgewood and shown on flood hazard maps and are subject to flood inundation from subsurface waters that result from a fluctuation of the groundwater table. Groundwater flooding areas shall be regulated as a floodway or flood fringe pothole.

2. Natural Waters/Watercourse. Natural waters/watercourse as identified on city topographic, planimetric or orthophoto maps, WDNR stream classification maps, USGS quadrangle maps, or other source maps that are not identified as a flood hazard area on the FEMA maps. That portion of the natural watercourse located between the ordinary high water mark and a topographic elevation five feet above the ordinary high water mark shall be regulated as a floodway or flood fringe. If the applicant chooses to accept the five-foot topographic elevation line above the ordinary high water mark as the base flood elevation (i.e., floodplain elevation limits), a flood study shall not be required for a natural water/watercourse.

3. Frequently Flooded Areas. See EMC 14.70.030(A)(9) as the areas defined by this section. (Ord. 17-492 § 2 (Exh. A); Ord. 02-200 § 2).

14.70.030 Flood hazard area review procedures.

A. General Requirements.

1. The city's Critical Areas [MapAtlas](#) – Flood Hazard Area Map provides an indication of where potential flood hazard areas are located within the city. The actual presence or location of a flood hazard area shall be determined using the procedures and criteria contained in this chapter.

2. The department will complete a review of the flood hazard area maps, and other source documents, for any development proposal to determine whether the proposed project area for a regulated activity falls within a potential flood hazard area. When there is a conflict between the elevations and the mapped 100- or 500-year floodplain or floodway boundaries, the elevations shall govern. In the instance where base flood elevation data has not been provided within a mapped A zone, the department shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal, state, or other source to complete their review.

3. When the department's maps or sources indicate that the proposed project area for a regulated activity is or may be located within a potential flood hazard area (except for coastal flood hazard areas), the department shall require a flood boundary verification survey as outlined in subsection (C) of this section, and may require a flood study as outlined in subsection (D) of this section, a deep and/or fast flowing water analysis as outlined in subsection (E) of this section, and/or a zero-rise analysis as outlined in subsection (F) of this section.

4. Any proposed development located within a flood hazard area shall comply with the flood hazard area standards set forth in EMC 14.70.040.

5. Prior to approval of any proposed flood hazard area development, all necessary permits from those governmental agencies from which prior approval is required by federal or state law, including but not limited to Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334, must be provided to the city by the applicant.

6. A FEMA letter of map amendment (LOMA) or letter of map revision (LOMR) shall not be submitted to FEMA until review and approval has been granted by the department. The city shall not recognize any LOMA or LOMR as an amendment to the department's flood hazard maps unless the department has granted prior approval.

7. Unless otherwise stated in this chapter, the critical area protective measure provisions contained in EMC 14.10.080 shall apply.

8. The Federal Emergency Management Agency (FEMA) administers the nation's floodplain management program. FEMA has identified some of the flood prone areas in the city; however, it is generally recognized that FEMA's Flood Insurance Rate Maps (FIRMs) may not accurately reflect the degree or frequency of flooding within all areas of the city. Therefore, information available through FEMA may not meet best available science criteria and cannot be used exclusively to address frequently flooded areas.

9. The city has determined that the following documents and sources are the most current and accurate information concerning frequently flooded areas within the city, and therefore represent best available science:

- a. The city's Surface Water Management Plan, 1997, or as amended thereafter.
- b. Aerial photographs of the city, especially those taken in wintertime 1996 and 1997.
- c. The city's two-foot elevation contour mapping performed by Nies Mapping Group, Inc., 1999, or as subsequently updated.
- d. Relevant and verifiable information from the city's Capacity Analysis Technical Review [AdHocAdhoc](#) Committee draft report, 2000.
- e. Relevant and verifiable government and citizen photographs, notes, observations, etc., regarding historic ponding/flooding levels, including but not limited to the City of Edgewood Potholes Water Level Monitoring 2006-2007 report prepared by Robinson Engineers, LLC.
- f. Relevant and verifiable information available through Pierce County.
- g. Relevant and verifiable information available through FEMA.

10. Flooding conditions within the city generally fall into three distinct hydrologic settings: (a) upland areas within enclosed depressions, (b) streams that flow off the upland areas, and (c) valley lowlands. Accordingly, the city manages frequently flooded areas within these three zones, as described below:

- a. Upland Areas Within Enclosed Depressions. From the above list use the historic ponding elevation, determined by subsection (A)(9) of this section, or the FEMA 100-year base flood elevation, whichever is highest.
- b. Streams Which Flow Off the Upland Areas. From the above list use the historic flood elevation, determined by subsection (A)(9) of this section, or the FEMA 100-year base flood elevation, whichever is highest.
- c. Valley Lowlands. From the above list use the historic flood elevation determined by subsection (A)(9) of this section, or the FEMA 100-year base flood elevation, whichever is highest.

11. The city will provide local flood information to FEMA, and request FEMA's assistance in accurately mapping and evaluating frequently flooded areas.

12. Warning and Disclaimer of Liability. 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 frequently flooded areas or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of 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 hereunder.

B. Channel Migration Zone Study.

1. In areas where Edgewood has not conducted a detailed channel migration zone study, an applicant may submit an independent channel migration zone study to demonstrate that the channel migration zone limits for those watercourses listed in EMC 14.70.020(B)(4) are located inside the 100-year floodplain limits.

2. The channel migration zone study shall be prepared, signed, and dated by a professional engineer or professional geologist with at least five years of experience in fluvial geomorphology, river dynamics, or geotechnical engineering.

3. The channel migration zone study shall, at a minimum, contain the information set forth in EMC 14.70.050, Appendix B.

4. The department shall review the channel migration zone study and either accept the new channel migration zone limits or reject the study and require the use of the 100-year floodplain limits. Once the department has reviewed and approved the channel migration zone study, the applicant shall be required to provide a flood boundary verification survey, as outlined in subsection (C) of this section, utilizing the newly established channel migration zone limits as the floodway limits.

C. Flood Boundary Verification Survey.

1. A flood boundary verification survey that delineates the horizontal and vertical limits of the base flood elevation shall be submitted to the department when the department's maps or sources indicate that the proposed project area for a regulated activity is located within a potential flood hazard area.

a. Where a base flood elevation has not been determined, a flood study shall be required pursuant to subsection (D) of this section.

b. A base flood elevation that has been established through a detailed flood study accepted by the department may be used in lieu of conducting a flood study.

c. The base flood elevation for a natural watercourse as set forth in EMC 14.70.020(D)(2) shall be established at the five-foot topographic elevation line above the ordinary high water mark.

2. The requirement to submit a flood boundary verification survey may be waived at the department's discretion, when the department can determine, using contour elevations, base flood data, orthophotos, and parcel data, that the extent of the regulated activity is clearly above the base flood elevation.

3. The flood boundary verification survey shall be prepared, signed, and dated by a registered land surveyor.

4. The department shall review the flood boundary verification survey to determine if the proposed development is located within a flood hazard area.

5. If the proposed development lies within the flood hazard area, the limits of the floodway, as well as the base flood elevation, shall be shown on the flood boundary verification survey.

D. Flood Study.

1. A flood study shall be conducted when the department's maps or sources indicate that the proposed project area for a regulated activity is, or may be located within, a potential flood hazard area where base flood elevation data is not available through the flood insurance study or other authoritative sources, or when an established base flood elevation is contested. A full engineering analysis to determine the base flood elevation shall be required by the department. Base flood elevations shall be determined using the detailed methods established in EMC 14.70.050, Appendix A. The department may approve alternative methods.

2. The flood study shall be prepared, signed, and dated by a professional engineer.

3. Once the department has reviewed and approved the flood study, the applicant shall be required to provide a flood boundary verification survey, utilizing the newly established base flood elevation, as outlined in subsection (C) of this section.

4. Flood studies shall not be required for coastal flood hazard areas.

E. Deep and/or Fast Flowing Water Analysis.

1. When the department determines that a proposed project area for a regulated activity is located within a flood hazard area, a deep and/or fast flowing water analysis based on EMC 14.70.050, Appendix A, shall be required to determine the floodway limits.
2. The floodway limits and flood fringe limits identified in the deep and/or fast flowing water analysis shall be depicted on the flood boundary verification survey, as outlined in subsection (C) of this section.
3. The deep and/or fast flowing water analysis shall be prepared, signed, and dated by a professional engineer.
4. Deep and/or fast flowing water analysis shall not be required for coastal flood hazard areas.

F. Zero-Rise Analysis.

1. When the department determines that a proposed project area for a regulated activity is located within a flood hazard area, a zero-rise analysis shall be required to determine that no increase in base flood elevation, displacement of flood volume, or flow conveyance reduction will occur as a result of the development.
2. The zero-rise analysis shall be conducted utilizing HEC-RAS (Hydrologic Engineering Center – River Analysis System) modeling methodology (for stream/channel floodways), the Western Washington Hydrology Model (i.e., WWHM, for pothole/closed depression floodways), or by other alternative methodologies approved by the city (see EMC 14.70.050, Appendix A). HEC-RAS can be found at the following website: <http://www.hec.usace.army.mil/software/hec-ras/>. WWHM can be found here: <http://www.ecy.wa.gov/programs/wq/stormwater/wwhmtraining/index.html>. The analysis shall show that no rise (0.01 foot or less) has occurred as a result of the proposed development. The proposed development may need to be reduced or specially engineered (such as utilizing piers or pilings) to achieve zero-rise.
3. The zero-rise analysis shall be prepared, signed, and dated by a professional engineer.
4. The zero-rise analysis shall be documented on the zero-rise analysis form, as set forth in EMC 14.70.050, Appendix A, and shall be attached to the flood hazard area permit.
5. Zero-rise analysis shall not be required for coastal flood hazard areas.
6. When structures are elevated by pier or pilings and no fill is placed in the flood hazard area, the requirement to submit a zero rise analysis may be waived at the department's discretion. (Ord. 17-492 § 2 (Exh. A); Ord. 02-200 § 2).

14.70.040 Flood hazard area standards.

A. General.

1. New construction done by or for the city, such as bridges, roads, flood control works, revetments, retaining walls, drainage structures, sewer or water lines, parks, or other structures necessary to promote the public's health, safety, and welfare shall be allowed in a flood hazard area when:
 - a. The project is prepared, dated, and stamped by a registered professional engineer in the state of Washington and is designed so the project does not result in any increase in flood levels during the occurrence of the base flood discharge (zero-rise) and shall not obstruct the floodway or cause an adverse impact to critical fish or wildlife habitat or adjacent, cross-channel, or upstream or downstream properties; and
 - b. The improvements utilize appropriate flood hazard protection standards.
2. Elevation Certificate. A Federal Emergency Management Agency (FEMA) elevation certificate shall be required for new construction, additions affixed to the side of a structure, and substantial improvements located within flood hazard areas. The most current version of the FEMA elevation certificate must be completed and certified by a professional land surveyor, currently licensed in the state of Washington, kept on file by the city for public inspection, recording the actual (as-built) elevation (in relation to mean sea level) of:

a. The lowest floor (including basement) of all new or substantially improved structures, whether or not the structure contains a basement;

b. For flood proofed nonresidential structures, where the structure was flood proofed (including flood proofing certifications).

B. Floodways. Any development, encroachments, filling, clearing or grading, new construction, and substantial improvements shall be prohibited within the floodway (including structures that do not require a building permit), except as allowed in the following standards:

1. Agricultural activities that do not require the installation of structures and that do not have any associated fill.

2. Park and recreational uses and facilities that do not require the installation of structures and that do not have any associated fill.

3. Individual recreational vehicles, not located in an RV park, that are licensed and ready for highway use, on wheels or jacking system, and are not permanently attached to the site (attached only by quick disconnect type utilities and security devices, with no permanently attached additions).

4. Habitat enhancement/stream restoration activities are permitted subject to the provisions outlined in subsection (D) of this section.

5. Rehabilitation, reconstruction, or an upper story addition to an existing structure that does not exceed the limits for a substantial improvement.

6. Private bridges may be allowed to cross the floodway; provided, that the structure meets the requirements contained in EMC 14.70.030 and the following:

a. The lowest structural member of a private bridge proposed to cross a channel migration zone shall be a minimum of six feet above the base flood elevation.

b. The lowest structural member of a private bridge proposed to cross the floodway portion of any other watercourse shall be a minimum of one foot above the base flood elevation.

C. Flood Fringe Areas. All activities allowed in subsection (B) of this section shall be permitted in a flood fringe area. Any other proposed development, encroachments, filling, clearing or grading, new construction, and substantial improvements are prohibited in a flood fringe area except as permitted under the following standards:

1. Structures that do not require a building permit and that do not have any associated fill are allowed, subject to flood hazard area review and permitting.

2. All other regulated activities shall only be allowed when the proposed development is located on an existing lot of record that was created prior to the effective date of the ordinance codified in this chapter. Applicants shall demonstrate there are no other feasible alternatives that would allow the proposed development to occur completely outside the flood hazard area. At a minimum, the following shall be demonstrated:

a. The development cannot be located outside the flood hazard area due to topographic constraints of the parcel or size and/or location of the parcel in relation to the limits of the flood hazard area and a building setback variance has been reviewed, analyzed, and rejected as a feasible alternative to encroachment into the flood hazard area; and

b. The proposed development shall not cause an adverse impact to adjacent, cross-channel, or upstream or downstream properties.

3. Roads, Bridges, Trails, and Parking Lots.

a. Roads, bridges, driveways, trails, emergency vehicle access, and access routes and easements, where allowed, shall be constructed and armored based on the standards in subsection (C)(4) of this section and elevated a minimum of one foot above the base flood elevation.

b. Parking lots shall be elevated to a minimum of one-half foot below the base flood elevation.

4. Grading and Filling. When development is permitted under this subsection, it shall be designed to a zero-rise standard as set forth in EMC 14.70.030(F) and 14.70.050, Appendix A. Any filling, grading, or clearing associated with the permitted development shall not increase flood hazards, water velocities, or flood elevations. In addition to meeting the requirements for zero-rise, all permitted development must also meet the following requirements:

a. Compensatory Storage. New excavated storage volume shall be equivalent to the flood storage capacity eliminated by filling or grading within the flood fringe. Equivalent shall mean that the storage removed shall be replaced by equal live storage volume between corresponding one-foot contour intervals that are hydraulically connected to the floodplain through their entire depth.

b. Flow Conveyance. New excavated conveyance areas shall be equivalent to existing conveyance within the flood fringe. Equivalent shall mean a mechanism for transporting water from one point to another using an open channel system.

c. Erosion Protection. Development shall be protected from flow velocities greater than two feet per second through the use of bio-engineering methods or, when bioengineering methods have been deemed insufficient to protect development, then hard armoring may be utilized. All erosion protection shall extend one to three feet, depending on development requirements, above the base flood elevation and shall be covered with topsoil and planted with native vegetation.

5. Critical Facilities.

a. New construction, additions affixed to the side of an existing structure, and substantial improvement of hazardous facilities, and special occupancy structures are prohibited.

b. New construction of an essential facility, reconstruction of an existing essential facility, or additions to an existing essential facility that exceed the threshold for substantial improvement shall be permitted when no feasible alternative site is available outside the flood hazard area. Such regulated activities are subject to the following:

i. Essential facilities with a crawlspace elevated by fill shall have the lowest floor and any utilities and ductwork elevated a minimum of three feet above base flood elevation, or to the height of the 500-year flood, whichever is higher.

ii. Essential facilities elevated by piers or pilings shall have the finished floor and any utilities and ductwork elevated a minimum of three feet above the base flood elevation (or to the height of the 500-year flood, whichever is higher) and must be designed by a professional structural engineer.

iii. Access to and from the critical facility shall be protected to the height utilized under subsections (C)(5)(b)(i) and/or (ii) of this section. Access routes shall be elevated to or above the same elevation to the maximum extent possible.

iv. Essential facilities shall be armored based on the standards in subsection (C)(4) of this section.

v. Flood proofing and sealing measures must be taken to ensure that toxic or explosive substances will not be displaced or released into floodwaters.

6. Structures. Single-family, two-family, multifamily, mobile/manufactured homes, commercial, industrial, etc., except for critical facilities as set forth in subsection (C)(5) of this section, shall be allowed subject to the following standards:

a. New construction, additions affixed to the side of an existing structure, and substantial improvement of any structure with a crawlspace shall have the lowest floor elevated a minimum of two feet above base flood elevation.

b. New construction, additions affixed to the side of an existing structure, and substantial improvement of any structure elevated by piers or pilings shall have the bottom of the lowest horizontal structural member elevated a minimum of two feet above the base flood elevation and must be designed by a professional structural engineer. Electrical, heating, ventilation, plumbing, air-conditioning equipment, and other service facilities and associated ductwork shall be elevated a minimum of two feet above base flood elevation; however, the department may approve a lesser minimum distance above base flood elevation; provided, that the systems are designed to prevent floodwater from entering or accumulating within the components. Areas below the lowest horizontal structural member shall not be enclosed and shall remain free of obstructions.

c. Mobile/manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement, and shall be installed using methods and practices to minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This is in addition to applicable state and local anchoring requirements for resisting wind forces.

7. Agricultural Accessory Structures. The lowest floor in an agricultural accessory structure shall be located at the base flood elevation or higher; provided, that the structure be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a professional engineer in the state of Washington or must meet or exceed the following minimum criteria:

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

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

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

8. Construction Standards.

a. Construction of a basement is prohibited.

b. Crawl spaces shall be backfilled with clean earth material and shall meet International Building Code requirements. Finished grade within the crawlspace shall be at least two feet above the base flood elevation.

c. Flood proofing in lieu of elevating the structure is prohibited.

d. All single-family, two-family, multifamily, mobile/manufactured homes, commercial, and industrial structures shall be placed on standard concrete stemwall/footing foundations or piles, piers, or column foundations and engineered pursuant to International Building Code requirements.

9. Sewage Disposal and Potable Water Installation.

a. New and replacement public water sources (i.e., wells and water supply lines) and public sanitary sewage conveyance systems are allowed. These systems shall be designed to withstand scour resulting from flow velocity, minimize or eliminate infiltration of floodwaters into the systems, and minimize or eliminate discharge from the systems into floodwaters

b. All replacement wells and replacement on-site sewage system (OSS) shall be designed to minimize or eliminate impairment to them or contamination from/to them during flooding (i.e., infiltration of floodwaters into or discharge out of the systems). They shall not be located in pothole or no-outlet floodplains.

c. All new individual wells and new on-site sewage system (OSS) shall be prohibited. Conveyance systems from a structure to a well or OSS located outside of the flood hazard area shall be allowed provided these systems are designed to meet the standards in subsection (C)(4) of this section.

14.70.050 Appendices.

A. Floodplain/Floodway Analysis.

B. Channel Migration Zone Study.

APPENDIX A

FLOODPLAIN/FLOODWAY ANALYSIS

This Appendix describes the flood hazard analyses and studies as required by Chapter 14.70 EMC, Flood Hazard Areas. Flood hazard studies establish the base flood elevation and delineate floodplain and/or floodway(s) when a proposed project contains or is adjacent to a river, stream, lake, or closed depression.

Flood hazard studies must conform to FEMA regulations described in Part 65 of 44 Code of Federal Regulations (CFR). In addition, the following information must be provided and procedures performed for flood hazard studies used under Chapter 14.70 EMC to examine development proposals or improvements within a floodplain.

Article I. Floodway Determination

The city recognizes two distinct floodways. The FEMA floodway describes the limit to which encroachment into the natural conveyance channel can cause one foot or less rise in water surface elevation. The deep and/or fast flowing (DFF) water floodways are hazardous areas and conditions of the floodplain for both people and habitable structures. Life safety and protection to improved properties are compromised if encroached upon. Encroachment cannot occur within these areas.

A. FEMA Floodways.

1. FEMA floodways are determined through the procedures outlined in the FEMA publication Guidelines and Specifications for Study Contractors using the one-foot maximum allowable rise criteria.
2. Transitions shall take into account obstructions to flow such as road approach grades, bridges, piers, culverts, or other restrictions. General guidelines for transitions may be found in HEC-RAS, Water Surface Profiles – User's Manual, Appendix IV, Application of HEC-RAS Bridge Routines, published by the Hydrologic Engineering Center, Davis, California.

B. Deep and/or Fast Flowing (DFF) Floodways.

1. DFF floodways are generally assumed to include the entire 100-year floodplain until the department approves a detailed floodway analysis that defines areas of DFF within the entire floodplain area based on the criteria.
2. The hydraulic model must adequately be calibrated to known or recorded stage elevations of past flood events with computed recurrence frequency intervals for the 100-year flood recurrence interval. This is to ensure model accuracy.

Article II. Flood Study Content and Required Information

Three copies of the completed floodplain/floodway analysis study report and the modeling digital files shall be submitted. The report submittal must be stamped by a licensed professional civil engineer and include the following information in addition to that required for the drainage plan of a proposed project:

A. Floodplain/Floodway Map.

1. A scaled survey base map stamped by a licensed professional land surveyor registered in the state of Washington. The map must accurately locate the proposed development with respect to

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the floodplain and floodway, the channel of the subject stream, river, and/or pothole location, and the existing improvements within the subject study area. It must also supply all pertinent information such as the nature of the proposed project, legal description of the property on which the project would be located, fill quantity, limits and elevation, the building floor elevations, and use of compensatory storage.

2. The map must show elevation contours at a minimum of two-foot vertical intervals and shall comply with survey and map guidelines published in the FEMA publication Guidelines and Specifications for Study Contractors. The map must show the following:

- a. Elevations and ground contours, spot elevations, and vertical datum NAVD 88 (North American Vertical Datum of 1988) (or most recent vertical datum accepted by the department).
- b. Elevations and dimensions of existing structures, fill, and compensatory storage areas.
- c. Size, location, elevation and spatial arrangement of all proposed structures on the site.
- d. Location and elevations of roadways, drainage facilities, water supply lines, and sanitary sewer facilities.
- e. Areas of DFF must clearly be shown and plotted on the map sheet depicting the bounded area of the floodway on both sides of the study channel through the subject site. DFF floodway studies must reflect all transitions as referenced above as well.
- f. The base maps must also be accompanied by all field survey notes/computations, drawings, etc., for each cross-section with water surface elevation at the time the cross-section field survey was done.

B. Study Report.

1. Soil maps, groundcover maps, and photographs.
2. A narrative report containing the purpose of the study and description of the study area, data collection, methodology for both the hydrology and hydraulics, detailed discussion on the input parameters used, modeling results, and conclusions.
3. A floodplain/floodway analysis must include calculations and all computer analysis input and output information, supporting graphical illustrations, as well as the following additional information:
 - a. Scaled cross-sections showing the current/existing conditions of the river/stream channel, the floodplain adjoining each side of the channel, the computed floodway, the cross-sectional area to be occupied by any proposed development and all historic high water information.
 - b. Profiles showing the bottom of the channel, the top of both left and right banks and computed base flood water surface elevations for the 10-, 25-, 50- and 100-year events.
 - c. Plans and specifications of any flood protection for structures, construction areas, filling, dredging, channel improvements, storage of materials, water supply, and sanitary facilities within the floodplain.
 - d. Complete printout of input and output data of the model that was used for the analysis. Liberal use of comments and written discussion will assist considerably in understanding the model logic and minimize misinterpretations and/or questions.
 - e. A map, showing the graphical/plotted location and limits of the computed floodway and/or floodplain.
 - f. Three copies of ready-to-run digital files of both the hydrologic and hydraulic model and its input and output files used in the study. Data shall be submitted on a disk in standard ASCII format, ready to use on an IBM-compatible personal computer and in the applicable software application (i.e., HEC-RAS, HSPF – Hydrological Simulation Program – FORTRAN, SBUH, etc.).

g. A section on the flood flow including computer modeling and/or calculations (see below for additional requirements on flood flow determinations).

h. Aerial photographs of the site including pre-February 1996 and post-February 1996 photos of the site.

i. All field survey notes/computations, maps, and drawings for each cross-section with water surface elevation at the time of the cross-section field survey.

C. Computer Modeling Information. Floodway/floodplain studies submitted to the city for review must include output summary tables and include the following (but not limited to) items:

1. Cross-section(s) identification number.
2. Range of flows being examined.
3. Computed water surface elevation at each cross-section.
4. Energy grade line at each cross-section.
5. Graphical plots of the channel cross-sections with computed water surface elevations for all model runs including calibrated model runs.
6. All model input and output printouts.
7. Graphical plots of the model output data that show the points and segments along each cross-section where deep and/or fast flowing water occurs. This shall include cross-section plots of depth and velocity in one-unit increments. The plots shall also be accompanied with a table listing the station distance (right and left bank), flow rate, area, hydraulic depth, velocity, and whether each point is a floodway.
8. A plan sheet clearly showing the graphical representation of the bounded area of the floodway based on DFF criteria through the entire study site and reach. Note that identified islands or pockets within the middle of the bounded floodway area are generally considered as part of the floodway, unless otherwise approved by the department.
9. Discussion on the starting water surface elevation for the hydraulic model.

Article III. Determining Flood Flows

The three techniques used to determine the flows used in a flood study depend on whether gauge data is available, whether a basin plan has been adopted, or a detailed flood study has been done and approved for use by the Department. The first technique is for basins with adopted basin plan areas. The second technique is used if a gauging station exists on the stream. The third technique is used on ungauged catchments or those with an insufficient length of record. In all cases, the engineer shall be responsible for assuring that the hydrologic methods used are technically reasonable, conservative, conform to the FEMA publication, Guidelines and Specifications for Study Contractors, and are acceptable by FEMA and the department.

A. Flood Flows from Adopted Basin Plan Information. Flood flows may be determined using information from the city's basin plan. The hydrologic model used in the basin plan shall be updated to include the latest changes in zoning or any additional information regarding the basin which has been acquired since the adoption of the basin plan.

B. Flood Flows from Stream Gauge Data. Determining flood flows from stream gauge data uses the Log-Pearson Type III distribution method as described in the Guidelines for Determining Flood Flow Frequency, Bulletin 17B of the Hydrology Committee, United States Water Resources Council (revised October 1981).

1. This technique may be used only if data from a gauging station in the basin is available for a period of at least 10 years.

2. If the difference in the drainage area on the stream at the study site and the drainage area to a gauging station on the stream at a different location in the same basin is less than or equal to 50 percent, the flow at the study site shall be determined by transferring the calculated flow at the gauge to the study site using a drainage area ratio raised to the 0.86 power, as in the following equation:

where

Q_{ss} = estimated flow for the given return frequency on the stream at the study site.
Q_G = flow for the given return frequency on the stream at the gauge site.
A_{ss} = drainage area tributary to the stream at the study site.
A_G = drainage area tributary to the stream at the gauge site.

3. If the difference in the drainage area at the study site and the drainage area at a gauging station in the basin is more than 50 percent and a basin plan has not been prepared, a continuous model shall be used as described below to determine the flood flows at the study site.

4. In all cases where dams or reservoirs, floodplain development, or land use upstream may have altered the storage capacity or runoff characteristics of the basin so as to affect the validity of this technique, a continuous model shall be used to determine flood flows at the study site.

C. Flood Flows from a Calibrated Continuous Model. Flood flows may be determined by utilizing a continuous flow simulation model such as HSPF or other equivalent continuous flow simulation model, as approved by the city. Where flood elevation or stream gauging data are available, the model shall be calibrated to the known data. Otherwise, regional parameters may be used.

Article IV. Determining Flood Elevations, Profiles and Floodways (Hydraulic Model)

A. Reconnaissance. The applicant's project engineer is responsible for the collection of all existing data with regard to flooding in the study area. This shall include a literature search of all published reports in the study area and adjacent communities and an information search to obtain all unpublished information on flooding in the immediate and adjacent areas from federal, state, and local units of government. This search shall include specific information on past flooding in the area, drainage structures such as bridges and culverts that affect flooding in the area, available topographic maps, available community maps, photographs of past flood events, and general flooding problems within the community. Documented discussions with nearby property owners should also be done to obtain a witness account of the flooding extent. A field reconnaissance shall be made by the applicant's project engineer to determine hydraulic conditions of the study area, including type and number of structures, locations of cross-sections, and other parameters including the roughness values necessary for the hydraulic analysis.

B. Base Data. Channel cross-sections used in the hydraulic analysis shall be current/existing at the time the study is performed and shall be obtained by field survey. Topographic information obtained from aerial photographs/mapping may be used in combination with surveyed channel cross-sections in the hydraulic analysis. The elevation datum of all information used in the hydraulic analysis shall be verified. All information shall be referenced directly to NAVD 1988 (and include local correlation to NGVD) unless otherwise approved by the city.

C. Methodology. Flood studies and analysis (including deep and/or fast flowing floodways and zero-rise analysis) shall be calculated using the U.S. Army Corps of Engineers HEC-RAS computer model (or subsequent revision) unless otherwise approved by the city.

D. Adequacy of the Hydraulic Model. Edgewood considers the following (but not limited to) factors when determining the adequacy of the hydraulic model for use in the floodway/floodplain model:

1. Cross-section of a downstream starting location and spacing.

2. Differences in energy grade line (significant differences in the energy grade line from cross-section to cross-section are an indication that cross-sections should be more closely spaced or that other inaccuracies exist in the hydraulic model).
3. Methods and results for analyzing the hydraulics of structures such as bridges and culverts.
4. Lack of flow continuity.
5. Use of a gradually varied flow model. In certain cases, rapidly varied flow techniques may need to be used in combination with a gradually varied flow model such as weir flow over a levee, flow through a spillway of a dam, or special application of bridge flow (pressure flow if bridge superstructure is shown to be submerged for the study event).
6. Manning's "n" value.
7. Calibration of hydraulic model to known and/or observed flow stage elevations including past flood events.
8. Special applications. In some cases, steady state one-dimensional hydraulic models may not be sufficient for preparing the floodplain/floodway analysis. This may occur where sediment transport, two-dimensional flow, or other unique hydraulic circumstances affect the accuracy of the model. In these cases, the project engineer must propose and obtain department approval of alternative models for establishing the water surface elevations.
9. All reported error and/or warning messages by the model must be properly and adequately addressed and/or resolved and included in the report for review verification.

Article V. Zero-Rise Analysis (ZRA)

A. Zero-rise analysis (ZRA) is required where encroachment within the flood fringe area is allowed and approved by the department. The ZRA must show that the proposed development encroachment in the flood fringe area will not show a measurable rise in the base flood elevation (i.e., less than 0.01 foot), resulting from a comparison of existing conditions and proposed conditions. This is directly attributable to development in the floodplain but not attributable to manipulation of mathematical variables such as roughness factors, coefficients, discharge, and other hydraulic parameters.

B. In addition to those items listed in subsection (A) of this article, the following shall be included in a ZRA:

1. Floodway boundaries (based on zero-rise) are to follow the stream lines and reasonably balance the rights of property owners on either side of the floodway. Use of the automatic equal conveyance encroachment option in the model will be considered equitable.
2. The ZRA must include a sufficient number of cross-sections in order to accurately model the subject fill and compensatory storage areas of the site. In all cases, cross-sections shall be located downstream, through the subject site and upstream of the site at a very minimum. They shall also be located where changes in channel and the fill material characteristics occur, such as slope, shape, and roughness. The sections shall also be located perpendicular to the flow path in the channel and the outside overbank areas. The department shall review and approve the proposed number and location of cross-sections. All cross-sections and surveys shall be prepared and certified by a professional land surveyor or registered professional engineer in the state of Washington.
3. The difference between two profiles of water surface elevation at the cross-section (e.g., difference between existing and encroached water surface). The model must report 0.01 feet or less an allowable change in the water surface elevation. This must be shown in the profile graphical plot as well.
4. The difference between profiles of the energy grade line at the cross-section. The model must report 0.01 feet or less. This is the allowable change in the energy grade line. This must be shown in the profile graphical plot as well.

C. Conveyance Capacity.

1. The ZRA must also show that the proposed development encroachment in the flood fringe area will not show a measurable decrease (less than 0.01 CFS) in the conveyance capacity of the channel, resulting from a comparison of existing conditions and proposed conditions, for each of the cross-sections. This is also directly attributable to development in the floodplain but not attributable to manipulation of mathematical variables such as roughness factors, coefficients, discharge, and other hydraulic parameters.

2. The analysis must provide calculations of the reduction in conveyance caused by the proposed development encroachment, assuming no change in the water surface elevation, and using the roughness coefficient value(s) appropriate for the proposed development.

3. The analysis must then provide calculations for the increase in conveyance of the proposed compensatory measure, using the roughness coefficient value(s) appropriate for the proposed development.

4. Include a comparison analysis and discussion from subsections (C)(2) and (3) of this article. The comparison must adequately show that the conveyance capacity has not measurably decreased between the existing condition and proposed development condition.

Floodplain/Floodway Zero-Rise Certification

This is to certify that I am a duly qualified professional engineer licensed to practice in the state of Washington.

This is to further certify that the attached floodplain/floodway zero-rise analysis conclusively shows that the proposed development of:

(Name of Development) Parcel Number

will not increase the 100-year base flood elevation(s) and widths nor reduce the conveyance capacity of the floodplain/floodway and its associated channel to the

(Name of River, Stream, Pothole or other Watercourse)

Supporting Data

Base Flood Elevation (Pre-Development) = _____ FT (NAVD 88)

Base Flood Elevation (Post-Development) = _____ FT (NAVD 88)

Conveyance Capacity (Pre-Development) = _____ CFS

Conveyance Capacity (Post-Development) = _____ CFS

with compensatory storage)

Signature Date

Title Firm Name

Address

City

State Zip Code

APPENDIX B

CHANNEL MIGRATION ZONE STUDY REQUIREMENTS

The channel migration zone (CMZ) is the area within the lateral extent of likely stream channel movement due to stream bank destabilization and erosion, rapid stream incision, and shifts in location of stream channels. The CMZ will define areas in which, to the best information available, development should be regulated due to the dangers expected from erosion.

Article I. Determining Channel Migration Zone Limits

A. The CMZ shall be based on available historic records of channel migration, or 100 years of calculated channel migration whichever is greater, and will generally include those areas that encompass:

1. The limit of geologic controls, such as hill slope, bedrock outcrop, or abandoned floodplain terrace;
2. Side channels, abandoned channels, and oxbows; and
3. Outside edges of progressive bank erosion at meander bends.

B. Channel migration over the 100-year time frame can be estimated and predicted from geomorphic analysis of annual bank erosion rates, historic meander belt width, and measured meander bend amplitudes, potential avulsion sites, and previous river channel locations as depicted on historic aerial photographs and maps. The 100-year time span represents the time required to grow mature trees that can provide functional large woody debris to streams.

C. The CMZ boundaries will be determined using the following specific criteria:

1. The representative average annual rate of channel migration in the affected river reach is calculated by dividing the lateral distance eroded with the corresponding elapsed time shown in sequential aerial photographs or historic maps (distance/time equals channel movement). Measurements from reaches that have had some form of bank armoring shall not be included. Historical records will need to be checked closely for this information.
2. Identify the width of the channel migration zone by multiplying the representative average annual erosion rate by 100 years.

D. Areas separated from the active channel by legally existing artificial channel constraints (levees, roads, driveways, etc.) that limit bank erosion and channel avulsion to the 100-year recurrence interval flood elevation plus three feet of freeboard shall serve as a boundary for the outer limit of the CMZ.

Article II. Channel Migration Zone Study Content and Required Information

Three copies of the completed channel migration zone study shall be submitted. The study submittal must be stamped by a licensed professional engineer or professional geologist with five years' experience in fluvial geomorphology, river dynamics, or geotechnical engineering. The CMZ study shall include the following information in addition to that required for the drainage plan of a proposed project. The CMZ study will consist of a written technical report including:

- A. Detailed methods, techniques, and assumptions used in determining the location of the CMZ.
- B. A vicinity map and site with scale, north arrow, and parcel number(s) or specific site being studied.
- C. A clear statement of the requested revision to the county's determination of the 100-year floodplain limits as the CMZ.

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D. A clearly stated conclusion of the study results that support the requested revision. The conclusion needs to document the basis for the revision, show how the data presented refutes the 100-year floodplain limits as the CMZ, and calculates the new results using the new information.

E. A map clearly delineating the subject property and the CMZ of the adjacent watercourse. In addition to providing a hard copy of the CMZ map, the CMZ map shall also be provided in ARC-View shapefile format. Contact the city GIS department for mapping and aerial imaging standards. (Ord. 02-200 § 2).

Chapter 14.80

LANDSLIDE HAZARD AREAS

Sections:

- 14.80.010 Purpose.
- 14.80.020 Landslide hazard areas.
- 14.80.030 Landslide hazard area review procedures.
- 14.80.040 Landslide and erosion hazard area standards.
- 14.80.050 Buffer requirements.
- 14.80.060 Appendices.

14.80.010 Purpose.

The following statements describe the purpose of this chapter is to:

- A. Protect human life and health.
- B. Regulate uses of land in order to avoid damage to structures and property being developed and damage to neighboring land and structures.
- C. Identify and map active landslide hazard areas.
- D. Minimize the ill effects on wetlands and critical fish and wildlife habitat that can result from landslides.
- E. Establish permit requirement and review procedures for development proposals in areas with potential landslides. (Ord. 02-200 § 2).

14.80.020 Landslide hazard areas.

A. Landslide Hazard Areas Indicators. Landslide hazard areas are areas potentially subject to mass movement due to a combination of geologic, seismic, topographic, hydrologic, or manmade factors. Landslide hazard areas can be identified by the presence of any of the following indicators:

1. Areas of historic failures, including areas of unstable, old and recent landslides or landslide debris within a head scarp.
2. Areas with all of the following characteristics:
 - a. Slopes steeper than 15 percent with a vertical relief of 20 feet or more; and
 - b. Hillsides that intersect geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and
 - c. Springs or groundwater seepage.
3. Areas exhibiting geomorphological features indicative of past slope failure within the last 10,000 years, such as hummocky ground, back-rotated benches on slopes, tension cracks, etc.
4. Any area with a slope of 40 percent or steeper and with a vertical relief of 15 or more feet. Manmade slopes of 40 percent or steeper with a vertical relief of 15 feet or more may be exempted from the requirements of this section of the code provided that it can be demonstrated by a qualified geotechnical professional that such an exemption does not result in an increased risk of landsliding or damage to the subject site, nearby properties, or existing structures and, any associated hazards to proposed structures are suitably mitigated. For the purposes of determining whether a slope is considered to be a landslide hazard area, the horizontal and vertical distance between the top and toe of slope are utilized.
5. Areas that are at risk of mass movement due to seismic events.

B. Potential Landslide Hazard Areas. Potential landslide hazard areas, as depicted on the Geologically Hazardous Areas map, are those areas where the suspected risk of slope instability and landslide is sufficient to require a geological assessment to assess the potential for active landslide activity. Potential landslide hazard areas are determined by using the following criteria:

1. Areas that possess one or more of the landslide hazard area indicators (stratigraphy, topography, emergent groundwater seepage, etc.) as set forth in subsection (A) of this section and any adjacent area within a distance of 65 feet. These areas include, but are not necessarily limited to, those areas designated on the City's Geologically Hazardous Areas map as moderate or steep slope areas.

14.80.030 Landslide hazard area review procedures.

A. General Requirements.

1. The city's Geologically Hazardous Areas map provides an indication of where potential landslide hazard areas are located within the city. The actual presence or location of landslide hazard areas that have not been mapped, but may be present on or adjacent to a site, shall be determined using the geological assessment procedures established in this chapter.
2. The department will complete a review of the Geologically Hazardous Areas map and other source documents for any proposed regulated activity to determine whether the site is, or may be, located within a landslide hazard area or potential landslide hazard area. Identification of a landslide hazard area or potential landslide hazard area may also occur as a result of field investigations conducted by department staff.
3. When the department's maps or sources indicate that the site for a proposed regulated activity is or may be located within a landslide hazard area or potential landslide hazard area, the department shall require the submittal of a geological assessment as outlined in subsection (B) of this section.
4. Unless otherwise stated in this chapter, the critical protective measure provisions contained in EMC 14.10.080 shall apply.

B. Geological Assessment. A geological assessment is a site investigation process to evaluate the on-site geology affecting a subject property. The findings of the geological assessment shall be presented in a Landslide Hazard Geotechnical Verification or Geotechnical Report.

1. Geological assessments shall be submitted to the department for review and approval together with a landslide hazard area application and associated fee.
2. A geological assessment shall include a field investigation and may include the use of historical air photo analysis, LiDAR mapping, review of regional geologic mapping, review of public records and documentation, and interviews with adjacent property owners, etc.
3. The geological assessment shall include the following information and analysis:
 - a. A determination of which areas on the site or within the vicinity of the site meet the criteria for a landslide hazard area as set forth in EMC 14.80.020(A).
 - b. Consider the run-out hazard of landslide debris to the proposed development that starts upslope (whether part of the subject property or on a neighboring property) and/or the impacts of landslide run-out on down slope properties.
 - c. The geological assessment shall include a detailed review of the field investigations, published data and references, data and conclusions from past geological assessments, or geotechnical investigations of the site, site-specific measurements, tests, investigations, or studies, as well as the methods of data analysis and calculations that support the results, conclusions, and recommendations.
4. Geological assessments shall be prepared, signed, and dated by a geotechnical professional (as defined in Chapter 14.15 EMC and established in this chapter) and the format shall be pre-approved by the department.

5. A geotechnical professional shall complete a field investigation and geological assessment to determine whether or not a landslide hazard area is likely to exist within 300 feet of the site. Where access to off-site properties is not available by the geotechnical professional, evaluation of off-site landslide hazards must include review of regional geologic mapping and LiDAR based topographic mapping.

a. The geological assessment shall be submitted in the form of geotechnical verification when the geotechnical professional finds that no landslide hazard area exists within 300 feet of the project area. The geotechnical verification shall meet the requirements contained in EMC 14.80.060, Appendix A.

b. The geological assessment shall be submitted in the form of a geotechnical report when the geotechnical professional finds that a landslide hazard area exists within 300 feet of the proposed project area or when a geotechnical professional determines that mitigation measures are necessary in order to construct or develop within a potential landslide hazard area. The geotechnical report shall meet the requirements contained in EMC 14.80.060, Appendix B.

6. Geological assessments that do not contain the minimum required information or comply with the landslide hazard area standards set forth in EMC 14.80.030 will be returned to the geotechnical professional for revision.

7. The department shall review the geological assessment and either:

a. Accept the geological assessment; or

b. Reject the geological assessment and require revisions or additional information.

8. When the geological assessment has been accepted, the department shall issue a decision on the landslide hazard area application.

9. A geological assessment for a specific site may be valid for a period of up to five years when the proposed land use activity and surrounding site conditions are unchanged. However, if any environmental conditions associated with the site change during that five-year period, the applicant may be required to submit an amendment to the geological assessment. (Ord. 02-200 § 2).

14.80.040 Landslide and erosion hazard area standards.

A. Landslide Hazard Areas. Any development, encroachment, filling, clearing or grading, building structures, impervious surfaces, and vegetation removal shall be prohibited within landslide hazard areas and associated buffers except as specified in the following standards:

1. Stormwater Conveyance. Stormwater conveyance shall be allowed when it is conveyed through a high-density polyethylene stormwater pipe with fuse-welded joints and when no other stormwater conveyance alternative is available. The pipe shall be located on the surface of the ground and be properly anchored so that it will continue to function in the event of an underlying slide.

2. Utility Lines. Utility lines will be permitted when no other conveyance alternative is available. The line shall be located above ground and properly anchored and/or designed so that it will continue to function in the event of an underlying slide.

3. Roads, Bridges, and Trails. Roads, bridges, and trails shall be allowed when all of the following conditions have been met:

a. Mitigation measures are provided that ensure the roadway prism and/or bridge structure will not be susceptible to damage from landslide-induced ground deformation or impact/coverage by landslide debris. Mitigation measures shall be designed for static and seismic loading conditions in accordance with the most recent version of the American Association of State Highway and Transportation Officials (AASHTO) Manual.

b. The road is not a sole access for a development.

c. The removal or disturbance of vegetation, clearing or grading shall be prohibited during the wet season (November 1st to May 1st).

B. Landslide Hazard Management Areas. All regulated activities may be allowed in areas located within 300 feet of a landslide hazard area subject to the following standards:

1. The department reviews and approves a geological assessment – geotechnical report and determines that the potential landslide hazard area is stable.
2. The proposed development is located outside of a landslide hazard area and any required buffer, as set forth in EMC 14.80.050.
3. The proposed recommendations and mitigation measures contained within the geotechnical report are adequate to reduce or mitigate risks to health and safety.
4. The proposed development shall not decrease the factor of safety for landslide occurrence below the limits of 1.5 for static conditions and 1.1 for dynamic conditions. Analysis of dynamic (seismic) conditions shall be based on a minimum horizontal acceleration as established by the current version of the International Building Code.
5. The removal and disturbance of vegetation, clearing or grading shall be limited to the area of the approved development and shall not be allowed during the wet season (November 1st through May 1st) unless adequate provisions for wet season erosion have been addressed in the geotechnical report and approved by the department.
6. Surface drainage from developed areas, including downspouts and runoff from paved or unpaved surfaces up slope, shall not be directed through a landslide hazard area or its associated buffer unless it is conveyed in conformance with the provisions in EMC 14.80.030.
7. Stormwater retention facilities, including infiltration systems utilizing perforated pipe, are prohibited unless the slope stability impacts of such systems have been analyzed and mitigated by a geotechnical professional and the impacts have been determined to be negligible.
8. The proposed development shall not create a need for larger landslide hazard area buffers and setbacks on neighboring properties unless approved through a notarized written agreement with the affected property owner(s).
9. The proposed development shall be sited far enough from regressing slope faces to project 120 years of useful life for the proposed structure(s) or infrastructure.
10. Any proposed lots must be completely located outside any identified landslide hazard areas or their associated buffers.
11. Landslide hazard areas that are directly adjacent to any riparian areas, or wetlands, may be subject to additional buffer requirements and standards as set forth in Chapter 14.40 EMC, Fish and Wildlife Habitat Conservation Areas, or wetlands as set forth in Chapter 14.30 EMC, Wetlands. (Ord. 02-200 § 2).

14.80.050 Buffer requirements.

A. Determining Buffer Widths.

1. The buffer width shall be measured on a horizontal plane from a perpendicular line established at the edge of the landslide hazard area limits (both from the top and toe of the slope).
2. A buffer of undisturbed vegetation shall be required for a landslide hazard area. The required buffer width is the greater amount of the distances described in EMC 14.80.050:
 - a. Fifty feet from all edges of the active landslide hazard area limits;

b. A distance of one-third the height of the slope at the top of the active landslide hazard area and a distance of one-half the height of the slope at the bottom of an active landslide hazard area; or

c. The buffer widths may be reduced below the widths specified in EMC 14.80.050, or eliminated upon approval by the department of a geotechnical report that demonstrates that such a reduction would not result in an increased risk of landslide activity either on or off of the subject property.

B. Modification of Buffer Widths. The department may require a larger buffer width than the buffer distance, as determined in subsection (A) of this section, if any of the following are identified:

1. The adjacent land is susceptible to severe erosion and erosion control measures will not effectively prevent adverse impacts.
2. The area has a severe risk of slope failure or downslope stormwater drainage impacts. (Ord. 02-200 § 2).

14.80.060 Appendices.

A. Geological Assessment – Landslide Hazard Geotechnical Verification.

B. Geological Assessment – Landslide Hazard Geotechnical Report.

APPENDIX A

GEOLOGICAL ASSESSMENT – LANDSLIDE HAZARD GEOTECHNICAL VERIFICATION

A. A geotechnical verification shall include the following:

1. The general critical areas report requirements in EMC 14.10.082.
2. A description of the surface and subsurface geology, hydrology, soils, and vegetation at the site and a list of the landslide hazard area indicators, as set forth in EMC 14.80.020(A), that were found on or in the vicinity of the site.
3. A summary of the results, conclusions, and recommendations resulting from the geological assessment of the landslide hazards on or in the vicinity of the site. This summary shall address all of the information required in EMC 14.80.030(B). The summary should include a description of observations during the site visit and a discussion of information obtained from review of the listed documents in EMC 14.80.030(B)(2)
4. An accurate site plan drawn at a scale of one inch equals 20 feet, one inch equals 30 feet, one inch equals 50 feet (or other scale deemed appropriate by the department) is required. The department may require that the site plan information listed below be based on a field survey by a licensed surveyor. The site plan shall include:
 - a. The limits/location of the active landslide hazard area(s).
 - b. The limits/location of the required landslide hazard buffer based upon the requirements set forth in EMC 14.80.050(A).
 - c. The location of any existing and proposed structures, utilities, on-site septic systems, wells, and stormwater management facilities.
 - d. The full geographical limits of the proposed project area (area to be developed).
 - e. Dimension the closest distance between the identified active landslide hazard area boundary and the project area.
 - f. Existing topography on the site presented in two-foot contours.
 - g. Property lines for the site.
 - h. North arrow and plan scale.

B. The geotechnical professional who prepared the verification document shall stamp the verification with his or her license stamp/seal.

C. Geotechnical verifications shall be in conformance with a format that is pre-approved by the department.

APPENDIX B

GEOLOGICAL ASSESSMENT – LANDSLIDE HAZARD GEOTECHNICAL REPORT

A. At a minimum, a geotechnical report shall include the following:

1. The general critical areas report requirements in EMC 14.10.082.
2. A description of the surface and subsurface geology, hydrology, soils, and vegetation of the site and a list of the landslide hazard area indicators, as set forth in EMC 14.80.020(A), that were found on or in the vicinity of the site.
3. A summary of the results, conclusions, and recommendations resulting from the geological assessment of the landslide hazards on or in the vicinity of the site. This summary shall address all of the information required in EMC 14.80.030(B).
4. An accurate site plan drawn at a scale of one inch equals 20 feet, one inch equals 30 feet, one inch equals 50 feet (or other scale deemed appropriate by the department) is required. The department may require that the site plan information listed below be based on a field survey by a licensed surveyor. The site plan shall include:
 - a. The limits/location of the landslide hazard area(s) within the site. Delineation of the landslide hazard area limits shall identify any areas of historic landslide activity.
 - b. The limits/location of the required landslide hazard buffer based upon the requirements set forth in EMC 14.80.050(A).
 - d. The location of any existing and proposed structures, utilities, on-site septic systems, wells, and stormwater management facilities.
 - e. The full geographical limits of the proposed project area (area to be developed).
 - f. Location and unique identifier of geotechnical borings, CPT soundings, or other surveys or explorations used to characterize subsurface conditions.
 - g. Extent of cross-section(s) used to evaluate the three-dimensional subsurface geologic and groundwater conditions at the site.
 - h. Extent of cross-section(s) used in the evaluation of slope instability.
 - i. Existing topography on the site presented in two-foot contours.
 - j. Property lines for the site.
 - k. North arrow and plan scale.
5. Subsurface characterization data must be provided. The data shall be based on both existing and new information that may include soil borings, test pits, geophysical surveys, or other appropriate subsurface exploration methods, development of site-specific soil and/or rock stratigraphy, and measurement of groundwater levels including variability resulting from seasonal changes, alterations to the site, etc.
 - a. Geotechnical borings or CPT soundings will be advanced to a depth sufficient to characterize geologic conditions within and below the existing or potential landslide mass.

b. Other methods used for subsurface characterization shall be assigned a unique identifier, and the basic data presented in appropriate graphical and/or tabular format.

c. The three-dimensional subsurface conditions at the site shall be presented using one or more cross-sections showing location and depth penetration of geotechnical borings, CPT soundings, or other subsurface characterization methods, interpretation of the geometry of major soil units, and projected location of the static groundwater surface determined from the subsurface exploration. The cross-sections shall be presented at a scale of one inch equals 20 feet, one inch equals 30 feet, one inch equals 50 feet (or other scale deemed appropriate by the department). Each cross-section shall have a legend with a description of the various major soil units.

6. A detailed description of any prior grading activity, soil instability, or slope failure.

7. Where deemed appropriate by the geotechnical professional assessments and conclusions regarding slope stability for both the existing and developed conditions shall be presented and documented. These assessments and conclusions shall include the information provided below in EMC 14.80.060, Appendix B. The project geotechnical professional must provide justification for not including a slope stability analysis if one is excluded. The City's geotechnical professional reserves the right to request a slope stability analysis based on site conditions. If a dispute arises between the project geotechnical professional and the City's geotechnical professional regarding the need for a slope stability analysis, then the City reserves the right to require an independent, third party review to be paid for by the applicant to resolve the dispute.

a. Determination of the potential types of landslide failure mechanisms (e.g., debris flow, rotational slump, translational slip, etc.) that may affect the site.

b. Quantitative stability evaluation of slope conditions of the various failure mechanisms using state-of-the-practice modeling techniques. Limiting equilibrium methods of analysis shall state the stability conditions as a factor of safety. The most unstable failure geometry(ies) shall be presented in the form of a cross-section(s), with the least stable failure geometry for each failure mechanism clearly indicated. The stability evaluation shall also consider dynamic (earthquake) loading, and shall use a minimum horizontal acceleration as established by the current version of the International Building Code.

c. An analysis of slope regression rate shall be presented in those cases where stability is impacted or influenced by erosional processes (e.g., wave cutting, stream meandering, etc.) acting on the toe of the slope.

8. Mitigation recommendations using engineered measures to protect the proposed structure(s) and any adjacent structures, infrastructure, adjacent wetlands, or critical fish and wildlife habitat from damage or destruction as a result of proposed construction activities shall be designed by a professional engineer. Design plans and detailed geotechnical recommendations may be provided in a document separate from the geotechnical report. When appropriate, such recommendations/plans may include, but are not necessarily limited to:

a. Design plans and associated design calculations for engineered structures or drainage systems (e.g., structural foundation requirements, retaining wall design, etc.).

b. Recommendations and requirements pertaining to the handling of surface and subsurface runoff in the developed condition.

c. Identification of necessary geotechnical inspections to assure conformance with the report mitigation and recommendations.

d. Proposed angles of cut and fill slopes, site grading requirements, final site topography (shown as two-foot contours), and the location of any proposed structures, on-site septic systems, wells, and stormwater management features or facilities associated with the development detailed within the body of the report and shown on a site map at the same scale as that required in subsection (A)(8) of this appendix.

e. Soil compaction criteria and compaction inspection requirements.

f. An analysis that indicates how the proposal meets the standards outlined in EMC 14.80.040.

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g. Structural foundation requirements and estimated foundation settlement shall be provided if structures are proposed.

h. Lateral earth pressures.

i. Suitability of on-site soil for use as fill.

j. Mitigation measures for building construction on each lot for short plats, large lots, or formal plats such that additional geotechnical professional involvement is minimized during building construction.

B. The geotechnical report shall be prepared by an engineering geologist and shall be co-written by both an engineering geologist and professional engineer where both geological interpretations and engineering analyses and designs are necessary or prudent in the mitigation of the landslide hazard.

C. The geotechnical professional(s) who prepared the geotechnical report shall stamp the report with his or her license stamp/seal.

D. The department may request a geotechnical professional to provide additional information in the geotechnical report based upon existing conditions, changed conditions, or unique circumstances occurring on a case-by-case basis.

E. Geotechnical reports shall be in conformance with a format that is pre-approved by the department. (Ord. 05-247 § 1; Ord. 02-200 § 2).

Chapter 14.90

SEISMIC (EARTHQUAKE) HAZARD AREAS

Sections:

- 14.90.010 Purpose.
- 14.90.020 Seismic hazard areas.
- 14.90.030 Seismic hazard area review procedures.
- 14.90.040 Seismic hazard area standards.
- 14.90.050 Buffer requirements.
- 14.90.060 Appendices.

14.90.010 Purpose.

Earthquakes have historically occurred throughout the Puget Sound region. Large earthquakes have caused loss of life and over a billion dollars in property damage. The purpose of this chapter is to protect the public health, safety, and general welfare of the citizens of Edgewood from the damaging effects of earthquakes. This chapter provides standards to ensure life safety and minimize public and private losses that may occur within a seismic hazard area. (Ord. 02-200 § 2).

14.90.020 Seismic hazard areas.

A. General. Seismic hazard areas are areas subject to severe risk of damage as a result of earthquake-induced landsliding, seismic ground shaking, dynamic settlement, fault rupture, or soil liquefaction.

B. Potential Seismic Hazard Areas. Potential seismic hazard areas are those areas where the suspected risk of earthquake induced landsliding, dynamic settlement, fault rupture, ground deformation caused by soil liquefaction, or flooding is sufficient to require a further seismic hazard area review as set forth in EMC 14.90.030. These potential seismic hazard areas are determined using the following criteria:

1. Earthquake Induced Landslide Hazard Areas. Areas identified as potential landslide hazard areas in EMC 14.80.020.
2. Liquefaction and/or Dynamic Settlement Hazard Areas. Areas identified as high and moderate liquefaction and dynamic settlement hazard areas on the Geologically Hazardous Areas map.
3. Fault Rupture Hazard Areas.

C. Seismic Hazard Area Categories.

1. Earthquake Induced Landslide Hazard Areas. Earthquake induced landslide hazard areas include slopes that can become unstable as a result of strong ground shaking, even though these areas may be stable under non-seismic conditions.
2. Liquefaction and/or Dynamic Settlement Hazard Areas.
 - a. Liquefaction hazard areas are areas underlain by unconsolidated (corrected Standard Penetration Test blow counts, $[(N_1)_{60}]$ less than 30) sandy or silt soils (Unified Soil Classification System S or M soil-types) and a shallow groundwater table (static groundwater depth less than 30 feet) capable of liquefying in response to earthquake shaking.
 - b. Dynamic settlement hazard areas are areas underlain by a significant thickness (more than 10 feet) of loose or soft soil not susceptible to liquefaction (e.g., peats or organic silts and clays, unsaturated loose sands or silts), but that could result in vertical settlement of the ground surface in response to earthquake shaking.
3. Fault Rupture Hazard Areas. Fault rupture hazard areas include:

- a. Active fault rupture hazard areas are areas where displacement (movement up, down, or laterally) of the ground surface has occurred during past earthquake(s) in the Holocene Epoch; and
- b. Areas adjacent to the active fault rupture hazard area that may be potentially subject to ground surface displacement in a future earthquake.

14.90.030 Seismic hazard area review procedures.

A. General Requirements.

1. The city's Geologically Hazardous Areas map provides an indication of where potential seismic hazard areas are located within the city.
2. The department will complete a review of the Critical Areas Atlas – Seismic Hazard Area Map for any regulated activity to determine whether the site for a proposed regulated activity is located within a seismic hazard area.
3. When the department's maps indicate that the site for a proposed regulated activity is located within a potential liquefaction or dynamic settlement hazard area, the department shall require the submittal of a geological assessment as outlined in subsection (B) of this section.
4. When the department's maps indicate that the site for a proposed regulated activity is located within a potential fault rupture hazard area, the department shall require the submittal of a geological assessment as outlined in subsection (B) of this section. The requirement to submit a geological assessment may be waived at the department's discretion when it is determined that the proposed project area for the regulated activity is located outside the potential fault rupture hazard area.
5. When the department's maps indicate that the site for a proposed regulated activity is or may be located within a potential earthquake-induced landslide hazard area, the department shall conduct a review pursuant to the requirements set forth in EMC 14.80.030.
6. Unless otherwise stated in this chapter, the critical area protective measure provisions contained in EMC 14.10.080 shall apply.

B. Geological Assessments. A geological assessment is a site investigation process to evaluate the on-site geology affecting a subject property and define the extent and severity of potential seismic hazards.

1. A geological assessment shall be required when the department's maps, sources, or field investigation indicate a site contains a potential liquefaction, dynamic settlement, or fault rupture hazard area. Geological assessments shall be submitted to the department for review and approval together with a seismic hazard area application.
2. A geotechnical professional(s) shall complete a field investigation and geological assessment to determine whether or not the site for a proposed regulated activity is located within a liquefaction or dynamic settlement hazard area.
 - a. The geological assessment shall be submitted in the form of a geotechnical verification when the geotechnical professional(s) finds that no liquefaction or dynamic settlement hazard area exists within the proposed project area. The geotechnical verification shall meet the requirements contained in EMC 14.90.060, Appendix A.
 - b. The geological assessment shall be submitted in the form of a geotechnical report when the geotechnical professional(s) finds that a liquefaction or dynamic settlement hazard area exists within the proposed project area. The geotechnical report shall meet the requirements contained in EMC 14.90.060, Appendix A.
3. A geotechnical professional shall complete a field investigation and geological assessment presented in the form of a geotechnical report to determine whether or not the site for a proposed regulated activity is located within a fault rupture hazard area. The geological assessment shall meet the requirements contained in EMC 14.90.060, Appendix B. Any structural recommendations proposed to mitigate the fault rupture hazard that are included in the geotechnical report shall be prepared by an engineer.

4. All geological assessments for seismic hazards submitted under this chapter shall include, at a minimum, the following:

- a. The dates when the geological assessment was conducted and when the assessment was prepared.
- b. The parcel number(s) of the subject property.
- c. Site address, if the city has assigned one.
- d. A brief description of the project (including the proposed land use) and the area to be developed.
- e. A map showing the property lines for the site, existing two-foot contours of the existing site topography, and the location of any existing structures, utilities, wells, stormwater or septic systems, or other developments.
- f. A site plan delineating the limits of the proposed development and the location of all areas of the site subject to potential seismic hazards based on the Geologically Hazardous Areas map and, if applicable, limits of associated buffers.
- g. A description of the surface and subsurface geology, hydrology, soils, and vegetation of the site.
- h. A detailed overview of the field investigations, published data and references, data and conclusions from past geological assessments or geotechnical investigations of the site, site-specific measurements, tests, investigations, or studies, as well as the methods of data analysis and calculations that support the determination regarding whether liquefaction and/or dynamic settlement hazards are present on the site.
- i. The results, conclusions, and recommendations resulting from the geological assessment of the liquefaction and/or dynamic settlement hazards on the subject property as prepared by a geotechnical professional(s).

5. Geological assessments shall be prepared, signed, stamped, and dated by the appropriate geotechnical professional(s) (as defined in Chapter 14.15 EMC and established in this chapter) and the format shall be pre-approved by the department.

6. Geological assessments that do not contain the minimum required information will be returned to the geotechnical professional(s) for revision.

7. The department shall review the geological assessment and either:

- a. Accept the geological assessment and approve the application; or
- b. Reject the geological assessment and require revisions or additional information.

8. A geological assessment for a specific site may be valid for a period of up to five years when the proposed land use activity and surrounding site conditions are unchanged. However, if any environmental conditions associated with the site change during that five-year period, the applicant may be required to submit an amendment to the geological assessment. (Ord. 02-200 § 2).

14.90.040 Seismic hazard area standards.

A. Earthquake Induced Landslide Hazard Areas. All standards set forth in Chapter 14.80 EMC shall apply to earthquake induced landslide hazard areas.

B. Liquefaction and/or Dynamic Settlement Hazard Areas.

1. All building structures shall conform to the standards set forth in EMC Title 15, Buildings and Construction.
2. Utility Lines. Utility lines, except for gas pipelines, which are prohibited, will be permitted when no other conveyance alternative is available. The line shall be located above ground and properly anchored and/or

designed so that it will continue to function in the event of seismically induced ground deformation. Provision for automatic shut-off of utilities in a ground-rupturing event will be required.

3. Roads, Bridges, and Trails. Roads, bridges, and trails shall be allowed when mitigation measures are provided that ensure the roadway prism and/or bridge structure will not be susceptible to damage from seismic induced ground deformation. Mitigation measures shall be designed for static and seismic loading conditions in accordance with the most recent version of the American Association of State Highway and Transportation Officials (AASHTO) Manual and also for an estimated range of ground surface offset presented in the geotechnical report.

C. Fault Rupture Hazard Areas. Any development, encroachment, filling, grading, or building structures shall be prohibited within fault rupture hazard areas and associated buffers except as specified in the following standards:

1. Utility Lines. Utility lines, except for gas pipelines, which are prohibited, will be permitted when no other conveyance alternative is available. The line shall be located above ground and properly anchored and/or designed so that it will continue to function in the event of seismically-induced ground deformation. Provision for automatic shutoff of utilities in a ground-rupturing event will be required.

2. Roads, Bridges, and Trails. Roads, bridges, and trails shall be allowed when all of the following conditions have been met:

a. Mitigation measures are provided that ensure the roadway prism and/or bridge structure will not be susceptible to damage from seismically-induced ground deformation. Mitigation measures shall be designed for static and seismic loading conditions in accordance with the most recent version of the American Association of State Highway and Transportation Officials (AASHTO) Manual and also for an estimated range of ground surface offset presented in the geotechnical report.

b. The road is not a sole access for a development. (Ord. 02-200 § 2).

14.90.050 Buffer requirements.

A. Determining Buffer Widths.

1. The buffer width shall be measured on a horizontal plane from a perpendicular line established at the edge of the fault rupture hazard area limits.

2. A buffer is an area that is adjacent to a fault rupture hazard area that may be potentially subject to ground surface displacement in a future earthquake. No development shall be permitted within a fault rupture hazard area and its associated buffer. The required buffer width is the greater amount of the following distances:

a. Fifty feet from all edges of a fault rupture hazard area, except for high occupancy or essential facilities, where the minimum buffer distance shall be 100 feet; or

b. The required buffer width is the minimum distance recommended by the geotechnical professional(s).

B. Modification of Buffer Widths. The Department may require a larger buffer width than the buffer distance, as determined in subsection (A) of this section, if the department determines the standard or proposed buffer is not adequate to protect the health, safety, or welfare of any proposed development. (Ord. 02-200 § 2).

14.90.060 Appendices.

A. Geological Assessments – Liquefaction or Dynamic Settlement Hazard Areas.

B. Geological Assessments – Fault Rupture Hazard Area Geotechnical Report.

APPENDIX A

GEOLOGICAL ASSESSMENTS – LIQUEFACTION OR DYNAMIC SETTLEMENT HAZARD AREAS

Article I. Geotechnical Verification

A. A geotechnical verification shall, at a minimum, include the following:

1. The general critical areas report requirements in EMC 14.10.082.
2. The geotechnical verification shall include all mandatory items listed in EMC 14.90.030(B)(4).
3. The geological assessment must include a determination that no liquefaction and/or dynamic settlement hazard exists within the proposed project area.
4. The verification shall include an accurate site plan drawn at a scale of one inch equals 20 feet, one inch equals 30 feet, one inch equals 50 feet (or other scale deemed appropriate by the department) is required. The department may require that the site plan information be based on a field survey by a licensed surveyor. The site plan shall include:
 - a. Property lines for the site, and the location of any existing structures.
 - b. The full geographical limits of the proposed project area or conceptual project area (i.e., area to be developed) and the location of any proposed structures, on-site septic systems, wells, and stormwater management features or facilities associated with the development, if known.

B. The geotechnical professional(s) who prepared the geotechnical verification shall stamp the verification with his or her license stamp/seal.

C. Hold harmless clauses, disclaimers, and limitations are not allowed within a geotechnical verification.

Article II Geotechnical Report

A. A geotechnical report shall, at a minimum, include the following:

1. The general critical areas report requirements in EMC 14.10.082.
2. The document shall include all mandatory items listed in EMC 14.90.030(B)(4). The report shall be prepared by an engineer and shall be co-written by an engineering geologist where geological interpretations and conclusions critical to the assessment of liquefaction and/or dynamic settlement hazard and potential effects are necessary or prudent. The report shall specify the desired performance level of the structures and other development facilities (e.g., safety to building occupants, minimal damage to structure, post-earthquake serviceability for pre-earthquake operations, no damage, etc.).
3. The results, conclusions, and recommendations resulting from the geological assessment of the liquefaction and/or dynamic settlement hazards on the subject property as prepared by the geotechnical professional(s).
4. The geological assessment-geotechnical report shall include:
 - a. A statement that the proposed project area falls within a liquefaction and/or dynamic settlement hazard area.
 - b. A detailed engineering evaluation of expected ground displacements or other liquefaction and/or dynamic settlement effects (e.g., bearing failures, flotation of buried tanks, etc.) and proposed mitigation measures to ensure an acceptable level of risk for the proposed structure type or other development facilities, as well as the proposed land use type (i.e., occupancy category). The minimum level of acceptable risk for any proposed structure or development facility shall ensure the life safety of any occupant. Where appropriate, a range of mitigation options should be considered depending on site conditions, the intended use of the structures, and acceptable levels of settlement.
5. The report shall include a site plan drawn to scale. The department may require that the site plan information be based on a field survey by a licensed surveyor. The site plan shall include:
 - a. Property lines for the site and the location of any existing structures.

b. The limits/location of any liquefaction and/or dynamic settlement hazard area(s) as set forth in EMC 14.90.020(C)(2).

c. The full geographical limits of the proposed project area or conceptual project area (i.e., area to be developed) and the location of any proposed structures, on-site septic systems, wells, and stormwater management features or facilities associated with the development, if known.

d. Location and unique identifier of geotechnical explorations used to characterize subsurface conditions.

6. The geotechnical study shall include field exploration sufficient to assess the potential for liquefaction or dynamic settlement hazards and options for mitigation of those hazards. Copies of the exploration logs shall be provided in the report. The geotechnical study shall include field exploration sufficient to assess the potential for liquefaction or dynamic settlement hazards and options for mitigation of those hazards. Copies of the exploration logs shall be included in the report. The project geotechnical professional must provide justification for the scope of the field exploration program. The City's geotechnical professional reserves the right to request additional exploration if deemed appropriate. If a dispute arises between the City's geotechnical professional and the project geotechnical professional regarding the scope of the field exploration, the City reserves the right to require an independent, third party review to be paid for by the applicant to resolve the dispute.

7. If beneficial to the assessment of seismic hazards for the project, the three-dimensional subsurface conditions at the site shall be presented using one or more cross-sections showing location and depth penetration of borings or CPT soundings, interpretation of the geometry of major soil units, and projected location of the static groundwater surface determined from the subsurface exploration. The cross-sections shall be presented at a scale of one inch equals 20 feet, one inch equals 30 feet, one inch equals 50 feet (or other scale deemed appropriate by the department). Each cross-section shall have a legend with a description of the various major soil units. The City's geotechnical professional reserves the right to request inclusion of one or more cross sections in the geotechnical report. If a dispute arises between the project geotechnical professional and the City's geotechnical professional regarding this issue, then the City reserves the right to require an independent, third party review to be paid for by the applicant to resolve the dispute.

8. All assessments of liquefaction and/or dynamic settlement hazards and effects will be based on a design earthquake using ground motion parameters consistent and equivalent to those specified in the most current version of the International Building Code. These assessments shall use the shallowest groundwater table observed during or inferred from subsurface exploration and characterization (e.g., the measured depth of static groundwater immediately prior to abandonment of borings, observation of iron-oxide mottling of soils samples, etc.).

9. Results of laboratory testing of samples retrieved during drilling and sampling shall be presented in order to support the values of fines contents used in subsequent analysis of liquefaction and/or dynamic settlement hazard. Where only CPT methods are used in site assessment, the correlation between fines content and CPT measurements will be discussed and documented. This documentation will require rigorous correlation of CPT and fines content measurements from similar geological deposits within the Puget Sound region.

10. The geotechnical report shall include a detailed assessment of the liquefaction and/or dynamic settlement hazard based on analysis of available subsurface data using state-of-the-practice methodologies. The results of the analysis shall be documented, and all results of intermediate and final calculations and results, including factors of safety, shall be included.

11. When appropriate, the geotechnical report shall include an assessment of the potential for large lateral spreads or flow failures, bearing failures, settlement, limited lateral displacement, and flotation of buried facilities. The methodologies used must be, at a minimum, state-of-the-practice, and the conclusions regarding the potential and severity of the possible liquefaction and/or dynamic settlement induced failure modes shall be presented.

12. Alternative mitigative measures including structural and foundation design options and/or soil improvement techniques shall be evaluated and compared for their effectiveness in reaching the level of performance specified in the report introduction. Effectiveness of soil improvement techniques shall be specified in terms of post-treatment densification or strength improvement as measured by appropriate subsurface investigation and

testing. The extent of the post-treatment verification testing shall be provided on a site map at the same scale as the map presented in subsection (A)(4) of this article. Geotechnical review of all final plans is required and the findings of the review shall be documented in writing.

B. The geotechnical professional(s) who prepared the geotechnical report shall stamp the report with his or her license stamp/seal.

C. Hold harmless clauses, disclaimers, and limitations are not allowed within a geotechnical report.

APPENDIX B

GEOLOGICAL ASSESSMENTS – FAULT RUPTURE HAZARD AREA GEOTECHNICAL REPORT

A. A geotechnical report shall, at a minimum, include the following:

1. The general critical areas report requirements in EMC 14.10.082.
2. The document shall include all mandatory items listed in EMC 14.90.030(B)(4). The report shall be prepared by an engineer and shall be co-written by an engineering geologist where geological interpretations and conclusions critical to the assessment of liquefaction and/or dynamic settlement hazard and potential effects are necessary or prudent.
3. The following topics should be considered and addressed in detail where essential to support opinions, conclusions, and recommendations in any geologic report on faults. It is not expected that all the topics or investigative methods would be necessary in a single investigation. In specific cases, it may be necessary to extend some of the investigative methods well beyond the site or property being investigated.
 - a. Purpose and scope of investigation; description of proposed development.
 - b. Geologic and tectonic setting. Include seismicity and earthquake history.
 - c. Site description and conditions, including dates of site visits and observations. Include information on geologic units, graded and filled areas, vegetation, existing structures, and other factors that may affect the choice of investigative methods and interpretation of data.
 - d. Methods of Investigation.
 - i. Review of published and unpublished literature, maps, and records concerning geologic units, faults, groundwater barriers, and other factors.
 - ii. Stereoscopic interpretation of aerial photographs, review of LiDAR based topography, and other remotely sensed images to detect fault-related topography (geomorphic features), vegetation and soil contrasts, and other lineaments of possible fault origin. The area interpreted usually should extend beyond the site boundaries.
 - iii. Surface observations, including mapping of geologic and soil units, geologic structures, geomorphic features and surfaces, springs, deformation of engineered structures due to fault creep, both on and beyond the site.
 - iv. Subsurface Investigations.
 - (A) Trenching and other excavations to permit detailed and direct observation of continuously exposed geologic units, soils, and structures; must be of adequate depth and be carefully logged (Taylor & Cluff 1973, Hatheway & Leighton 1979, McCalpin 1996b).
 - (B) Borings and test pits to permit collection of data on geologic units and groundwater at specific locations. Data points must be sufficient in number and spaced adequately to permit valid correlations and interpretations.

(C) Cone penetrometer testing (CPT) (Grant et al., 1997, Edelman et al., 1996). CPT must be done in conjunction with continuously logged borings to correlate CPT results with on-site materials. The number of borings and spacing of CPT soundings should be sufficient to adequately image site stratigraphy. The existence and location of a fault based on CPT data are interpretative.

v. Geophysical Investigations. These are indirect methods that require a knowledge of specific geologic conditions for reliable interpretations. They should seldom, if ever, be employed alone without knowledge of the geology (Chase & Chapman 1976). Geophysical methods alone never prove the absence of a fault nor do they identify the recency of activity. The types of equipment and techniques used should be described and supporting data presented (California Board of Registration for Geologists and Geophysicists, 1993).

(A) High-resolution seismic reflection (Stephenson et al., 1995, McCalpin, 1996b).

(B) Ground penetrating radar (Cai et al., 1996).

(C) Other methods include: seismic refraction, magnetic profiling, electrical resistivity, and gravity (McCalpin, 1996b).

vi. Age-dating techniques are essential for determining the ages of geologic units, soils, and surfaces that bracket the time(s) of faulting (Pierce 1986, Birkeland et al., 1991, Rutter & Catto, 1995, McCalpin, 1996a).

(A) Radiometric dating (especially ¹⁴C).

(B) Soil-profile development.

(C) Rock and mineral weathering.

(D) Landform development.

(E) Stratigraphic correlation of rocks/minerals/fossils.

(F) Other methods – artifacts, historical records, tephrochronology, fault scarp modeling, thermoluminescence, lichenometry, paleomagnetism, dendrochronology, etc.

vii. Other methods should be included when special conditions permit or requirements for critical structures demand a more intensive investigation.

(A) Aerial reconnaissance overflights.

(B) Geodetic and strain measurements.

(C) Microseismicity monitoring.

e. Conclusions.

i. Location and existence (or absence) of hazardous faults on or adjacent to the site; ages of past rupture events.

ii. Type of faults and nature of anticipated offset, including sense and magnitude of displacement, if possible.

iii. Distribution of primary and secondary faulting (fault zone width) and fault-related deformation.

iv. Probability of, or relative potential for, future surface displacement. The likelihood of future ground rupture seldom can be stated mathematically, but may be stated in semiquantitative terms such as low, moderate, or high, or in terms of slip rates determined for specific fault segments.

v. Degree of confidence in, and limitations of data and conclusions.

f. Recommendations.

i. The recommended increase from the standard buffer distance (50 feet) of proposed structures from fault rupture hazard areas. The recommended buffer distance generally will depend on the quality of data and type and complexity of fault(s) encountered at the site and the proposed land use type (i.e., occupancy). In order to establish an appropriate buffer distance from a fault located by indirect or interpretative methods (e.g., borings or cone penetrometer testing), the area between data points also should be considered underlain by a fault unless additional data are used to more precisely locate the fault. Additional measures (e.g., strengthened foundations, engineering design, and flexible utility connections) to accommodate warping and distributive deformation associated with faulting (Lazarte and others, 1994).

ii. Risk evaluation relative to the proposed development.

iii. Limitations of the investigation; need for additional studies.

g. References.

i. Literature and records cited or reviewed; citations should be complete.

ii. Aerial photographs or images interpreted – list type, data, scale, source, and index numbers.

iii. Other sources of information, including well records, personal communications, and other data sources.

h. Illustrations. The following illustrations should be provided:

i. A location map that identifies site locality, significant faults, geographic features, regional geology, seismic epicenters, and other pertinent data; 1:24,000 scale is recommended.

ii. A site development map that shows site boundaries, existing and proposed structures and limits of the proposed project area, graded areas, streets, exploratory trenches, borings geophysical traverses, locations of faults, and other data; recommended scale is 1:2,400 (one inch equals 200 feet), or larger.

iii. A geologic map that shows the distribution of geologic units (if more than one), faults and other structures, geomorphic features, aerial photo graphic lineaments, and springs; on topographic map 1:24,000 scale or larger; can be combined with subsection (B)(h)(i) or (ii) of this appendix.

iv. Geologic cross-sections, if needed, to provide three-dimensional picture.

v. Logs of exploratory trenches and borings that show details of observed features and conditions (note: these should not be generalized or diagrammatic). Trench logs should show topographic profile and geologic structure at a 1:1 horizontal to vertical scale; scale should be 1:60 (one inch equals five feet) or larger.

vi. Geophysical data and geologic interpretations.

i. Appendix. Attach any supporting data not included above (e.g., water well data, photographs, aerial photographs).

4. The geotechnical professional who prepared the geotechnical shall stamp the report with his or her license stamp/seal.

5. The department may request a geotechnical professional to provide additional information in the geotechnical report based upon existing conditions, changed conditions, or unique circumstances occurring on a case-by-case basis.

6. Hold harmless clauses, disclaimers, and limitations are not allowed to be included, neither expressly nor implied, within a geological assessment. (Ord. 02-200 § 2).

Chapter 14.110

EROSION HAZARD AREAS

Sections:

- 14.110.010 Purpose.
- 14.110.020 Erosion hazard areas.
- 14.110.030 Erosion hazard area review procedures.
- 14.110.040 Erosion hazard area standards.
- 14.110.050 Buffer requirements.
- 14.110.060 Appendices.

14.110.010 Purpose.

The following statements describe the purpose of this chapter:

- A. Protect human life and health;
- B. Regulate uses of land in order to avoid damage to structures and property being developed and damage to neighboring land and structures;
- C. Identify and map erosion hazard areas;
- D. Minimize impacts on wetlands and critical fish and wildlife species and their associated habitat that can result from erosion;
- E. Establish a permit requirement and review procedures for development proposals in areas with potential erosion hazards;
- F. Strike a balance between the need to maintain natural shoreline erosion/regression processes and the need to protect existing and proposed development. (Ord. 02-200 § 2).

14.110.020 Erosion hazard areas.

A. Shoreline Erosion Hazard Indicators. Shoreline erosion hazard areas are areas potentially subject to land regression or retreat due to a combination of geologic, seismic, and/or hydrologic or manmade factors. Shoreline hazard areas can be identified by indicators of active land retreat as a result of fluvial processes.

B. Erosion Hazard Area Categories.

1. Potential Erosion Hazard Areas. Potential erosion hazard areas, as depicted on the Geologically Hazardous Areas map, are those areas where the suspected risk of erosion through either loss of soil, slope instability, or land regression is sufficient to require additional review to assess the potential for active erosion activity or apply additional standards. These potential erosion hazard areas are determined using the following criteria:

- a. Shoreline Erosion Hazard Areas. Areas within 200 feet of a freshwater (lake, pond, or shoreline) as measured landward perpendicularly from the edge of the ordinary high water mark.
- b. Riverine Erosion Hazard Areas. The rivers subject to regulation as a channel migration zone listed in EMC 14.70.020(B)(4).
- c. Soil Erosion Hazard Areas. Areas identified as having slopes of 20 percent or greater and that are classified as having severe, or very severe erosion potential by the Soil Conservation Service, United States Department of Agriculture (USDA).

2. Active Shoreline Erosion Hazard Areas. Land areas located directly adjacent to surface water bodies that, through the geological assessment process, are identified as regressing, retreating, or potentially unstable as a result of undercutting by wave action or bluff erosion. The limits of the active shoreline erosion hazard area shall

extend landward to include that land area that is calculated, based on the rate of regression, to be subject to erosion processes within the next 10-year time period.

3. Riverine Erosion Hazard Areas. Riverine erosion hazard areas are located within the lateral extent of likely watercourse channel movement due to bank destabilization and erosion, rapid incision, and shifts in location of watercourse channels. Riverine erosion hazard areas are also referred to as channel migration zones (CMZs). Rivers and streams subject to erosion are regulated as a CMZ as listed in EMC 14.70.020(B)(4).

4. Soil Erosion Hazard Areas. Soil erosion hazard areas are identified by the presence or absence of natural vegetative cover, soil texture condition, slope, and rainfall patterns, or man-induced changes to such characteristics that create site conditions which are vulnerable to erosion of the upper soil horizon. Soil erosion hazard areas include those areas with slopes of 20 percent or greater and that are classified as having severe, or very severe erosion potential by the USDA Natural Resources Conservation Service. (Ord. 02-200 § 2).

14.110.030 Erosion hazard area review procedures.

A. General Requirements.

1. The City's Geologically Hazardous Areas map provides an indication of where potential erosion hazard areas are located. The actual presence or location of an erosion hazard area and/or additional potential erosion hazard area that have not been mapped, but may be present on or adjacent to a site, shall be determined using the procedures and criteria established in this chapter.

2. The department will complete a review of the Geologically Hazardous Areas map, and any other source documents for any proposed regulated activity to determine whether the site for the regulated activity is located within a potential erosion hazard area.

3. When the department's maps, sources, or field investigations indicate that the site for a proposed regulated activity is located within a potential shoreline erosion hazard area, the department shall require a geological assessment as outlined in subsection (B) of this section.

4. When the department's maps, sources, or field investigations indicate that the proposed project area for a regulated activity is located within a potential riverine erosion hazard area (channel migration zone), the department shall conduct a review pursuant to the requirements set forth in EMC 14.70.030. All standards set forth in Chapter 14.70 EMC shall apply to riverine erosion hazard areas (CMZs).

5. When the department's maps, sources, or field investigations indicate that the proposed project area for a regulated activity is located within a potential soil erosion hazard area, the department shall require submittal of an erosion control plan pursuant to the requirements set forth in EMC Title 15, Buildings and Construction.

6. Applicants requesting to develop a bulkhead along a shoreline shall be required to submit a geotechnical report. The geotechnical report shall comply with the requirements established in EMC 14.110.060, Appendix C.

7. Unless otherwise stated in this chapter, the critical area protective measure provisions contained in EMC 14.10.080 shall apply.

B. Geological Assessment. A geological assessment is a site investigation process to evaluate the on-site geology affecting a subject property and proposed development.

1. Geological assessments shall be submitted to the department for review and approval together with a shoreline erosion hazard area application.

2. The geological assessment shall include a field investigation and may also include review of public records and documentation, analysis of historical air photos, LiDAR mapping, published data and references, etc.

3. The geological assessment shall include the following information and analysis:

a. An analysis of the shoreline erosion processes on and in the vicinity of the site including an evaluation of erosion and shoreline retreat that has occurred over the past decade and an estimated probable rate of erosion based upon the historic rate of erosion that has occurred on the site.

b. A determination of which areas on the site meet the criteria for an active shoreline erosion hazard area as set forth in EMC 14.110.020(B)(2).

c. A determination of the area on the site or in the vicinity of the site that will experience regression in the next 120 years given natural processes.

4. Geological assessments shall be prepared, signed, and dated by a geotechnical professional (as defined in Chapter 14.15 EMC and established in this chapter) and the format shall be pre-approved by the department.

5. A geotechnical professional shall complete a field investigation and geological assessment to determine whether or not an active shoreline erosion hazard area exists within 200 feet of the site.

a. The geological assessment shall be submitted in the form of a geotechnical letter when the geotechnical professional finds that no active shoreline erosion hazard area exists within 200 feet of the site. The geotechnical letter shall meet the requirements contained in EMC 14.110.060, Appendix A.

b. The geological assessment shall be submitted in the form of geotechnical verification when the geotechnical professional finds that an active shoreline erosion hazard area exists but is located more than 200 feet away from the proposed project area. The geotechnical verification shall meet the requirements contained in EMC 14.110.060, Appendix B.

c. The geological assessment shall be submitted in the form of a geotechnical report when the geotechnical professional finds that an active shoreline erosion hazard area exists within 200 feet of the proposed project area or when a geotechnical professional determines that mitigation measures, such as a bulkhead, are necessary in order to construct or develop within a potential shoreline erosion hazard area. The geotechnical report shall meet the requirements contained in EMC 14.110.060, Appendix C.

6. The department shall review the geological assessment and either:

a. Accept the geological assessment and approve the application; or

b. Reject the geological assessment and require revisions or additional information.

7. A geological assessment for a specific site may be valid for a period of up to five years when the proposed land use activity and surrounding site conditions are unchanged. However, if any environmental conditions associated with the site change during that five-year period, the applicant may be required to submit an amendment to the geological assessment.

C. Riverine Erosion Hazard Area (Channel Migration Zones) Review. Riverine erosion hazard areas shall be reviewed pursuant to the requirements set forth in EMC 14.70.030.

D. Soil Erosion Hazard Area Review. Soil erosion hazard areas shall be reviewed pursuant to the requirements set forth in EMC Title 15, Buildings and Construction. (Ord. 02-200 § 2).

14.110.040 Erosion hazard area standards.

A. Active Shoreline Erosion Hazard Areas. Any development, encroachment, filling, clearing, or grading, timber harvest, building structures, impervious surfaces, and vegetation removal shall be prohibited within active shoreline erosion hazard areas and associated buffers except as specified in the following standards:

1. Shoreline Erosion Protection Measures. Shoreline erosion protection measures located within or adjacent to freshwater or marine shorelines shall be allowed subject to the following:

a. The proposed shoreline protection measure shall comply with the standards set forth in Chapter 14.40 EMC, Fish and Wildlife Habitat Conservation Areas.

b. A geological assessment-shoreline erosion geotechnical report has been conducted in accordance with the provisions set forth in EMC 14.110.030(B) that indicates that the shoreline is currently experiencing active erosion (i.e., land retreat or regression).

c. The use of the shoreline erosion protection measure will not cause a significant adverse impact on adjacent properties or critical fish and wildlife species and their associated habitat (i.e., increase erosion on adjacent properties).

d. The use of soft armoring techniques (soil bioengineering erosion control measures) is the preferred method for shoreline protection.

e. Hard armoring shoreline erosion control measures shall be approved only when a geological assessment-shoreline erosion geotechnical report, as set forth in EMC 14.110.030(B), has been completed and indicates the following:

i. The regression has been monitored on a yearly interval for a period of at least five consecutive years prior to allowing a bulkhead to be constructed. This monitoring shall be conducted by field survey measurements of a licensed surveyor. The department may shorten or eliminate the monitoring period if there are indicators that the regression rate is rapid and an existing structure may be threatened prior to completion of the monitoring period;

ii. The use of beach nourishment alone or in combination with soft armoring techniques is not adequate to protect the property from shoreline erosion processes; and

iii. The property contains an existing structure(s) that will be threatened within the next 10 years or the buildability of an undeveloped site will be threatened within the next 10 years if a hard armoring method of shoreline erosion protection is not provided.

f. Hard armoring shoreline protection measures shall not be allowed when structures can be located landward of the 120-year rate of regression area.

2. Stormwater Conveyance. Surface drainage into an active shoreline erosion hazard area should be avoided. If there are no other alternatives for discharge, then drainage must be collected upland of the top of the active shoreline erosion hazard area and directed downhill in a high density polyethylene stormwater pipe with fuse welded joints that includes an energy dissipating device at the base of the active landslide hazard area. The pipe shall be located on the surface of the ground and be properly anchored so that it will continue to function in the event of an underlying slide. The number of these pipes should be minimized along the slope frontage.

3. Utility Lines. Utility lines will be permitted when no other conveyance alternative is available. The line shall be located above ground and properly anchored and/or designed so that it will continue to function in the event of an underlying slide.

4. Roads, Bridges, and Trails. Roads, bridges, and trails shall be allowed when all of the following conditions have been met:

a. Mitigation measures are provided that ensure the roadway prism and/or bridge structure will not be susceptible to damage from active erosion.

b. The road is not a sole access for a development.

B. Shoreline Erosion Hazard Management Area. All regulated activities such as but not limited to building structures, impervious surfaces, vegetation removal, timber harvest, and clearing or grading activities may be allowed in areas located within 200 feet of an active shoreline erosion hazard area subject to the following standards:

1. The department reviews and approves a geological assessment – shoreline erosion hazard geotechnical report and determines that the proposed project area is located outside an active shoreline hazard area and the required buffer, as set forth in EMC 14.110.050.

2. The proposed recommendations and mitigation measures contained within the geotechnical report are adequate to reduce or mitigate risks to the natural environment, health, and safety.

3. Surface drainage from the proposed project area, including downspouts, landscape irrigation systems, and runoff from paved or unpaved surfaces upland of the shoreline, shall not be directed through an active shoreline erosion hazard area or its associated buffer unless it is conveyed in conformance with the provisions in subsection (A)(2) of this section.

4. Stormwater retention and detention systems, such as dry wells and infiltration systems utilizing buried pipe or french drains, shall not be permitted unless such systems are designed by a professional engineer and the geotechnical report indicates that such a system will not affect the stability of the shoreline.

5. Proposed developments, with the exception of shoreline erosion protection measures, shall be sited far enough from regressing shorelines to ensure 120 years of useful life for any proposed structures or infrastructure.

C. Riverine Erosion Hazard Area (Channel Migration Zones) Review. Riverine erosion hazard areas shall be reviewed pursuant to the requirements set forth in EMC 14.70.030.

D. Soil Erosion Hazard Area Review. Soil erosion hazard areas shall be reviewed pursuant to the requirements set forth in EMC Title 15, Buildings and Construction. (Ord. 02-200 § 2).

14.110.050 Buffer requirements.

A. Determining Buffer Widths.

1. The buffer width shall be measured on a horizontal plane from a perpendicular line established at the edge of the active shoreline erosion hazard area limits.

2. An undisturbed buffer of existing vegetation shall be required for an active shoreline erosion hazard area. The required standard buffer width is the greatest amount of the distances in EMC 14.110.050(A)(2)(a) and (b):

a. Fifty feet from all edges of the active shoreline erosion hazard area limits;

b. A distance of one-third the height of the slope at the top of the slope and a distance of one-half the height at the bottom of the slope; or

c. The buffer width may be reduced below the widths specified in EMC 14.110.050(A)(2)(a) and (b) or eliminated upon approval by the Department of a geotechnical report that demonstrates that such a reduction would not result in an increased risk of erosion either on or off of the subject property.

B. Modification of Buffer Widths. The department may require a larger buffer width than the standard buffer distance, as determined in subsection (A) of this section, if any of the following are identified through the geological assessment process:

1. The adjacent land is susceptible to severe erosion and erosion control measures will not effectively prevent adverse impacts.

2. The area has a severe risk of slope failure or downslope stormwater drainage impacts. (Ord. 02-200 § 2).

14.110.060 Appendices.

A. Geological Assessment – Shoreline Erosion Hazard Geotechnical Letter.

B. Geological Assessment – Shoreline Erosion Hazard Geotechnical Verification.

C. Geological Assessment – Shoreline Erosion Hazard Geotechnical Report.

APPENDIX A

GEOLOGICAL ASSESSMENT – SHORELINE EROSION HAZARD GEOTECHNICAL LETTER

A. A geotechnical letter shall, at a minimum, include the following:

1. The general critical areas report requirements in EMC 14.10.082.
2. A summary of the findings of the site visit, a site plan, and a summary of the findings from the review of documents listed in EMC 14.110.030(B)(2). The appropriate professional preparing the geotechnical letter shall provide conclusions and recommendations as to shoreline stability for the proposed development.

B. The geotechnical professional who prepared the geotechnical letter shall stamp the letter with his or her seal.

C. Hold harmless clauses, disclaimers, and limitations are not allowed within a geotechnical letter.

APPENDIX B

GEOLOGICAL ASSESSMENT – SHORELINE EROSION HAZARD GEOTECHNICAL VERIFICATION

A. A geotechnical verification shall, at a minimum, include the following:

1. The general critical areas report requirements in EMC 14.10.082.
2. A summary of the results, conclusions, and recommendations resulting from the geological assessment, as set forth in EMC 14.110.030(B). The verification will also include a summary of the findings of the site visit, a site plan, and a summary of the findings from the review of the documents listed in EMC 14.110.030(B)(2).
3. An accurate site plan drawn at a scale of one inch equals 20 feet, one inch equals 30 feet, one inch equals 50 feet (or other scale deemed appropriate by the department) is required. The department may require that the site plan information listed below be based on a field survey by a licensed surveyor. The site plan shall include:
 - a. The limits/location of the active shoreline erosion hazard area(s) set forth in EMC 14.110.020(B)(2).
 - b. The limits of the required shoreline erosion hazard buffer based upon the requirements set forth in EMC 14.110.050(A).
 - c. The limits/location of the shoreline erosion hazard management area.
 - d. The limits/location of the 120-year regression area.
 - e. The location of any existing structures, utilities, on-site septic systems, wells, and stormwater management facilities.
 - f. The location of any proposed structures, utilities, on-site septic systems, wells, and stormwater management facilities.
 - g. The full geographical limits of the proposed project area (area to be developed).
 - h. Dimension of the closest distance between the identified active shoreline hazard area boundary and the proposed project area.
 - i. Dimension of the closest distance between the 120-year regression line and the proposed project area.
 - j. Existing contours on the site at two-foot intervals.
 - k. Property lines for the site.
 - l. North arrow and scale.

B. The geotechnical professional who prepared the geotechnical verification shall stamp the verification with his or her seal.

C. Hold harmless clauses, disclaimers, and limitations are not allowed within a geotechnical verification.

APPENDIX C

GEOLOGICAL ASSESSMENT – SHORELINE EROSION HAZARD GEOTECHNICAL REPORT

A. A geotechnical report shall, at a minimum, include the following:

1. The general critical areas report requirements in EMC 14.10.082.
2. A summary of the results, conclusions, and recommendations resulting from the geological assessment, as set forth in EMC 14.110.030(B). The report will also include a summary of the findings of the site visit, a site plan, and a summary of the findings from the review of documents listed in EMC 14.110.030(B)(2). The summary shall specifically address:
 - a. Whether it is possible given the physical constraints of the property (size, shape, building setbacks, utility requirements, etc.) to locate the proposed development outside of the 120-year area of regression based on natural shoreline processes.
 - b. If it is not possible to locate the development outside of the 120-year area of regression (based on natural processes), determine whether beach nourishment and/or soft armoring techniques can be used to slow the rate of regression such that the proposed development is no longer within the 120-year regression area.
 - c. If it is not possible to locate the development outside of the 120-year area of regression (based on the use of beach nourishment and/or soft armoring techniques), outline the strategy, as set forth in EMC 14.110.040(A)(1), to monitor the rate of regression on the site.
 - d. Determine whether any proposed shoreline erosion protection measures will cause an increase in the rate of regression on neighboring properties.
3. An accurate site plan drawn at a scale of one inch equals 20 feet, one inch equals 30 feet, one inch equals 50 feet (or other scale deemed appropriate by the department) is required. The department may require that the site plan information listed below be based on a field survey by a licensed surveyor. The site plan shall include:
 - a. The limits/location of the active shoreline erosion hazard area(s) set forth in EMC 14.110.020(B)(2).
 - b. The limits of the required shoreline erosion hazard buffer based upon the requirements set forth in EMC 14.110.050(A).
 - c. The limits/location of the shoreline erosion hazard management area.
 - d. The limits/location of the 120-year regression area based on natural shoreline processes and, if applicable, based upon proposed shoreline protection measures.
 - e. The location of any existing structures, utilities, on-site septic systems, wells, and stormwater management facilities.
 - f. The location of any proposed structures, utilities, on-site septic systems, wells, and stormwater management facilities.
 - g. The full geographical limits of the proposed project area (area to be developed).
 - h. Dimension of the closest distance between the identified active shoreline hazard area boundary and the proposed project area.
 - i. Dimension of the closest distance between the 120-year regression line and the proposed project area.
 - j. Existing contours on the site at two-foot intervals.

k. Property lines for the site.

l. North arrow and scale.

4. A discussion of any proposed shoreline protection measures including design and construction drawings is required.

5. A list of references utilized in preparation of the report.

B. The geotechnical professional(s) who performed the geological assessment shall stamp the report with his or her license stamp/seal. The report must be co-authored by a licensed professional engineer when engineering designs or interpretations are necessary to address the report requirements. The engineer must also stamp the report with his or her license stamp/seal.

C. The department may request a geotechnical professional to provide additional information in the geotechnical report based upon existing conditions, changed conditions, or unique circumstances occurring on a case-by-case basis.

D. Hold harmless clauses, disclaimers, and limitations are not allowed within a geotechnical report.

E. Geotechnical reports shall be in conformance with a format that is pre-approved by the department. (Ord. 02-200 § 2).

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Chapter 14.500

NATURAL RESOURCE LANDS

Sections:

14.500.010	Purpose.
14.500.020	Intent.
14.500.030	Applicability.
14.500.031	Mineral resource lands designation.
14.500.040	Natural resource lands noticing requirements.
14.500.050	Current use assessment.
14.500.060	Variances and appeals.
14.500.070	Review process.
14.500.080	Title, plat, and regulated activities notification.
14.500.090	Permitted uses.
14.500.100	Appendices.

14.500.010 Purpose.

This chapter establishes requirements and regulations to protect natural resource lands and is established pursuant to WAC 197-11-908 and RCW 36.70A.170 and 36.70A.060. The city therefore designates agricultural lands and mineral resource lands, and all associated buffers as being environmentally sensitive areas and designated natural resource lands. By regulating development within 500 feet of natural resource lands, this title seeks to implement the following goals and policies to:

- A. Inform the public of the existence, location and potential incompatibility impacts of development on, or within 500 feet of, these environmentally sensitive areas within the city.
- B. Encourage the retention of open space, development of recreational opportunities, conserve priority habitat, increase access to natural resource lands and water, and develop parks.
- C. Assure the conservation of resource lands and related activities by limiting encroachment of incompatible development thereon.
- D. Promote the conservation of mineral resource lands through inclusion of known deposits of minerals and materials.
- E. Assure that undeveloped mineral and material resources will not be forever lost by prior development of the land for other purposes.
- F. Allow for the necessary mineral processing to convert such minerals and materials into marketable products.
- G. Protect the environment and enhance the state's high quality of life, including air and water quality and the availability of water.
- H. Maintain and enhance the biological and physical functions and values of wetlands. (Ord. 02-200 § 2).

14.500.020 Intent.

Resource lands are of special concern to the citizens, the city, and the state. The intent of this chapter is to conserve resource lands by establishing standards for development of sites which contain, or are within 500 feet of, resource lands to promote the public health, safety, and welfare by:

- A. Noticing of property on, or within, natural resource land areas;
- B. Mitigating unavoidable impacts by regulating development;
- C. Protecting from development impacts;

D. Protecting the public against losses from:

1. Costs of public emergency rescue and relief operations where the causes are avoidable;
2. Degradation of the natural environment and the expense associated with repair or replacement;

E. Preventing adverse impacts on water availability, water quality, wetlands, and streams;

F. Protecting unique, fragile, and valuable elements of the environment, including fish and wildlife habitat;

G. Providing sufficient information to show that critical areas are adequately protected prior to approving, conditioning, or denying public or private development activity;

H. Providing the public with sufficient information and notice of potential risks associated with development in critical and sensitive areas;

I. Implementing the goals and requirements of the Growth Management Act (RCW 36.70A.060), the city of Edgewood comprehensive plan, and all updates and amendments, functional plans, and other land use policies formally adopted or accepted by the city. (Ord. 02-200 § 2).

14.500.030 Applicability.

This chapter shall apply to all properties designated as resource lands (agricultural lands or mineral resource lands) or properties within 500 feet of designated resource lands within Edgewood. When the requirements of this title are more stringent than those of other local, state or federal law, codes, or regulations, the requirements of this title shall apply.

A. Agricultural Lands. Lands that are not already characterized by urban growth and that have long-term significance for the commercial production of food or other agricultural products. Agricultural lands are those lands meeting all of the following criteria:

1. Lands in parcels which are 10 acres or larger in size;
2. Lands which are on prime or unique soils as identified in:
 - a. United States Department of Agriculture (USDA), Soil Conservation Service, February 1979, Soil Survey of Pierce County Area, Washington; or
 - b. USDA, Soil Conservation Service, June 1981, Important Farmlands of Pierce County, Washington;
 - c. Lands which are primarily devoted to the commercial production of horticultural, viticultural, floricultural, dairy, apiary, vegetable, or animal products or of berries, grain, hay, straw, turf, seed, Christmas trees not subject to the excise tax imposed by RCW 84.33.100 through 84.33.140, or livestock, and which have long-term commercial significance for agricultural production; and
 - d. Lands which are not within 500 feet of lots of record of one acre or less on more than 50 percent of the perimeter of the parcel.

B. Mineral Resource Lands. Mineral resource lands shall be identified by the city using the criteria set forth in WAC 365-190-070 as now exists or as may hereafter be amended or modified.

C. Property Adjacent to Resource Lands. All plats, short plats, development permits, and building permits issued for development activities within 500 feet of lands designated as natural resource lands shall contain a notice that a variety of commercial activities may occur that are not compatible with residential development for certain periods of limited duration. (Ord. 04-221 § 1; Ord. 02-200 § 2).

14.500.031 Mineral resource lands designation.

A. The city has classified the following areas as potential mineral resource lands based on the criteria in EMC 14.500.030(B).

1. Parcels: 0420164023, 0420164024, 0420164016 (commonly known as Olson); and
2. Parcels: 0420162047, 0420162048 (commonly known as Josties); and
3. Parcels: 0420084072, 0420084002, 0420084005, 0420084069, 0420084068, 0420171073, 0420171057, 0420171000, 0420171059 (commonly known as Fife Sand and Gravel).

B. The city staff shall study each area and prepare a written analysis of each area.

C. The city council's land use and economic development committee shall review the staff analysis and either send the analysis back to staff for clarification or recommend approval/denial of each area as a mineral resource land to the city council. The staff analysis and land use and economic development committee's recommendation shall be forwarded to the city council for review and action.

D. The city council shall review the staff analysis and recommendation(s) of the land use committee and shall, by ordinance, approve, deny or modify the particular study area designation using the criteria in EMC 14.500.050(B). (Ord. 04-234 § 1).

14.500.040 Natural resource lands noticing requirements.

Pursuant to RCW 36.70A.060, the city shall require that all plats, development applications, or permits issued for development activities on, abutting, or within 500 feet of lands designated as natural resource lands contain a notice (see Appendices A through C).

A. General. If more than one natural resource land subject to the provisions of this title intersects the subject parcel, then one notice addressing all of the natural resource areas shall be sufficient.

B. Title Notification.

1. When the city determines that activities not exempt from this title are proposed, the owner shall file a notice with the Pierce County auditor (Appendices A through C). The notice shall provide a public record of the presence of the sensitive area(s); the application of this title to the property; and any limitations on activity in or affecting such sensitive area.
2. The notice shall be notarized and recorded with the Pierce County auditor before approval of any regulated use or activity on the site.

C. Plat Notification. For all proposals requiring a plat within sensitive areas, the applicant shall note the face of the plat consistent with the language set forth in Appendices A through C.

D. Permit Notification. The department shall require that all permits issued for regulated activities on or within 500 feet of natural resource lands contain a notice as set forth in Appendices A through C. (Ord. 02-200 § 2).

14.500.050 Current use assessment.

A. An owner of natural resource lands or open space desiring current use classification under Chapter 84.40 RCW may file for such current use classification.

B. An owner of undeveloped land with critical areas which has been placed in a separate tract or tracts, protective easement, public or private land trust dedication, or other similarly preserved area for the protection of these critical areas may have that portion of land reviewed for reassessment by the assessor-treasurer's office consistent with those restrictions to determine the fair market value of the land pursuant to RCW 84.40.030.

C. The owner shall notify the assessor-treasurer's office when restrictions on development occur on a particular site, and shall provide a plat map in addition to the following, or other special study documents as may be required by the department.

14.500.060 Variances and appeals.

Procedures for variances and appeals of an administrative decision issued pursuant to this chapter are set forth in EMC 18.40.090, ~~Process II, Administrative action~~. (Ord. 02-200 § 2).

14.500.070 Review process.

A. The department shall review any permit or application requested for any regulated activity, including, but not limited to, those set forth in EMC 14.500.010 on a site which includes, or is within 500 feet of, one or more resource land is located, unless otherwise provided in this title.

B. As part of all development applications, the department shall review the information submitted by the applicant to:

1. Confirm the nature and type of the resource land and evaluate any required title, plat, and/or regulated activity notification;
2. Determine whether the development proposal is consistent with this title; and
3. Determine whether any proposed alterations to the site containing resource lands are necessary.

C. The city may approve, approve with conditions, or deny any development proposal in order to comply with the requirements and carry out the goals, purposes, objectives, and requirements of this title.

D. Approval of a development proposal does not discharge the obligation of the applicant to comply with the provisions of this title. (Ord. 02-200 § 2).

14.500.080 Title, plat, and regulated activities notification.

A. If more than one resource land subject to the provisions of this title exists on the site, then one notice addressing all of the resource lands shall be sufficient.

B. Notification shall be approved by the department and shall be consistent with the forms set forth in EMC 14.500.100, Appendices A through C as applicable.

C. Title notifications shall be notarized and recorded with the Pierce County auditor prior to approval of any regulated use or activity for the site. (Ord. 02-200 § 2).

14.500.090 Permitted uses.

Uses permitted on designated resource land sites shall be the same as those permitted in the zone classifications shown on the city zoning map. (Ord. 02-200 § 2).

14.500.100 Appendices.

A. Property Adjacent to Resource Lands.

B. Agriculture Lands Noticing.

C. Mineral Resource Lands Noticing.

APPENDIX A

PROPERTY ADJACENT TO RESOURCE LANDS

A. Title Notification.

Parcel Number: _____

Site Address: _____

NOTICE: This parcel lies within 500 feet of land designated resource lands by Edgewood. A variety of commercial and industrial activities occur in the area that may be inconvenient or cause discomfort to area residents. This may arise from the use of chemicals, or from spraying or extraction which occasionally generates dust, smoke, noise, and odor. The city has established resource uses as priority uses on productive resource lands, and residents of adjacent property should be prepared to accept such inconveniences or discomfort from normal, necessary commercial resource lands operations.

Signature of Owner

(NOTARY ACKNOWLEDGMENT)

B. Plat Notification. The owner of any site within 500 feet of land designated as resource lands on which a large lot, short subdivision, or formal subdivision is submitted, shall record a notice on the face of the plat. Such notification shall be in the form as set forth below:

PROPERTY ADJACENT TO RESOURCE LANDS PLAT NOTIFICATION. This property lies within 500 feet of land designated resource lands by Edgewood. A variety of commercial and industrial activities occur in the area that may be inconvenient or cause discomfort to area residents. This may arise from the use of chemicals, or from spraying or extraction which occasionally generates dust, smoke, noise, and odor. The city has established resource uses as priority uses on productive resource lands, and residents of adjacent property should be prepared to accept such inconveniences or discomfort from normal, necessary commercial resource lands operations.

C. Regulated Activities Notification. The department shall require that permits issued for regulated activities, as defined in Chapter 14.500 EMC, within 500 feet of lands designated as resource lands, contain a notice as set forth below.

REGULATED ACTIVITIES NOTIFICATION. This property lies within 500 feet of land designated resource lands by Edgewood. A variety of commercial and industrial activities occur in the area that may be inconvenient or cause discomfort to area residents. This may arise from the use of chemicals, or from spraying or extraction which occasionally generates dust, smoke, noise, and odor. The city has established resource uses as priority uses on productive resource lands, and residents of adjacent property should be prepared to accept such inconveniences or discomfort from normal, necessary commercial resource lands operations.

APPENDIX B

AGRICULTURAL LANDS NOTICING

A. Title Notification.

Parcel Number: _____

Site Address: _____

NOTICE: This parcel lies within 500 feet of an area identified as agricultural lands by Edgewood. A variety of commercial agricultural activities occur in the area that may be inconvenient or cause discomfort to area residents. This may arise from the use of agricultural chemicals, including herbicides, pesticides, and fertilizers; or from spraying, pruning, and harvesting which occasionally generate dust, smoke, noise, and odor. Edgewood has established agriculture as a priority use on productive agricultural lands, and residents of adjacent property should be prepared to accept such inconveniences or discomfort from normal, necessary farm operations.

Signature of Owner

Signature of Owner

(NOTARY ACKNOWLEDGMENT)

B. Plat Notification. The owner of any site within this designation on which a large lot, short subdivision, or formal subdivision is submitted, shall record a notice on the face of the plat. Such notification shall be in the form as set forth below.

AGRICULTURAL LANDS PLAT NOTIFICATION. This parcel lies within an area identified as agricultural lands by Edgewood. A variety of commercial agricultural activities occur in the area that may be inconvenient or cause discomfort to area residents. This may arise from the use of agricultural chemicals, including herbicides, pesticides, and fertilizers; or from spraying, pruning, and harvesting which occasionally generate dust, smoke, noise, and odor. The city has established agriculture as a priority use on productive agricultural lands, and residents of adjacent property should be prepared to accept such inconveniences or discomfort from normal, necessary farm operations.

C. Regulated Activities Notification. The department shall require that all permits issued for regulated activities, as defined in Chapter 14.500 EMC, within this zone classification contain a notice as set forth below.

REGULATED ACTIVITIES NOTIFICATION. This parcel lies within 500 feet of an area identified as agricultural lands by Edgewood. A variety of commercial agricultural activities occur in the area that may be inconvenient or cause discomfort to area residents. This may arise from the use of agricultural chemicals, including herbicides, pesticides, and fertilizers; or from spraying, pruning, and harvesting which occasionally generate dust, smoke, noise, and odor. The city has established agriculture as a priority use on productive agricultural lands, and residents of adjacent property should be prepared to accept such inconveniences or discomfort from normal, necessary farm operations.

APPENDIX C

MINERAL RESOURCE LANDS NOTICING

A. Title Notification.

Parcel Number: _____

Site Address: _____

NOTICE: This parcel lies within 500 feet of an area of land designated mineral resource lands by the city. A variety of commercial mineral extraction activities occur in the area that may be inconvenient or cause discomfort to area residents. This may arise from the use of heavy equipment, chemicals, and spraying which may generate dust, smoke, and noise associated with the extraction of mineral resources. Edgewood has established mineral resource extraction as a priority use on productive mineral resource lands, and residents of adjacent property should be prepared to accept such inconveniences or discomfort from normal, necessary mineral resource extraction operations.

Signature of Owner

(NOTARY ACKNOWLEDGMENT)

B. Plat Notification. The owner of any site within this overlay district on which a large lot, short subdivision, or formal subdivision is submitted, shall record a notice on the face of the plat. Such notification shall be in the form as set forth below:

MINERAL RESOURCE LANDS PLAT NOTIFICATION. This property lies within 500 feet of an area of land designated mineral resource lands by the city of Edgewood. A variety of

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mineral resource extraction activities occur in the area that may be inconvenient or cause discomfort to area residents. This may arise from the use of heavy equipment, chemicals, and spraying which may generate dust, smoke, and noise associated with the extraction of mineral resources. Edgewood has established mineral resource extraction as a priority use on productive mineral resource lands, and residents of adjacent property should be prepared to accept such inconveniences or discomfort from normal, necessary mineral resource extraction lands.

C. Regulated Activities Notification. The department shall require that all permits issued for regulated activities, as defined in Chapter 14.500 EMC, within this designation contain a notice as set forth below:

REGULATED ACTIVITIES NOTIFICATION. This property lies within 500 feet of an area of land designated mineral resource lands by Edgewood. A variety of mineral resource extraction activities occur in the area that may be inconvenient or cause discomfort to area residents. This may arise from the use of chemicals and extraction of minerals, which occasionally generates dust, smoke, noise, and odor. The city has established mineral resource extraction as a priority use on productive mineral resource lands, and residents of adjacent property should be prepared to accept such inconveniences or discomfort from normal, necessary mineral resource extraction lands.

(Ord. 02-200 § 2).

ORDINANCE NO. 17-0513

AN ORDINANCE OF THE CITY OF EDGEWOOD, WASHINGTON, RELATING TO COMPLIANCE WITH THE GROWTH MANAGEMENT ACT, CHAPTER 36.70A RCW, INCORPORATING THE CITY'S MANDATORY UPDATE OF ITS CRITICAL AREAS REGULATIONS, AS REQUIRED BY RCW 36.70A.130(7)(B), REPEALING TITLE 14 OF THE EDGEWOOD MUNICIPAL CODE AND REPLACING IT WITH A NEW TITLE 14, RELATING TO CRITICAL AREAS, PROVIDING FOR SEVERABILITY; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, All cities and counties in Washington are required to adopt critical areas regulations by the Growth Management Act (GMA) (RCW 36.70A.060); and

WHEREAS, all jurisdictions are required to review, evaluate, and, if necessary, revise their critical areas ordinances according to an update schedule; and

WHEREAS, as defined by the GMA in RCW 36.70A.030(5): "Critical areas" include the following areas and ecosystems: (a) Wetlands; (b) areas with a critical recharging effect on aquifers used for potable water; (c) fish and wildlife habitat conservation areas; (d) frequently flooded areas; and (e) geologically hazardous areas; and

WHEREAS, cities are required to include the best available science in developing policies and development regulations to protect the functions and values of critical areas; and

WHEREAS, The Department of Commerce, Growth Management Services, and the state Department of Ecology have provided helpful guidance on addressing the GMA's best available science requirements; and

WHEREAS, on December 10, 2002, the City of Edgewood adopted the current Edgewood Municipal Code (EMC) Title 14 – Critical Areas under Ordinance No. 02-200; and

WHEREAS, on April 28, 2016, the City of Edgewood adopted Ordinance No. 16-0461 amending EMC Title 14 as part of the City's mandatory GMA update; and

WHEREAS, the SEPA Responsible Official issued a Determination of Non-Significance (DNS) for this ordinance on November 16, 2017, and there were no appeals of this determination; and

WHEREAS, on July 20, 2017, the City sent a copy of this ordinance to the Washington State Department of Commerce, as required by RCW 36.70A.106(1); and

WHEREAS, the Planning Commission held a public hearing on this ordinance on August 21, 2017; and

WHEREAS, after the public hearing, the Planning Commission submitted a formal recommendation of approval to the City Council; and

WHEREAS, the City Council considered this ordinance and the Planning Commission's recommendation during its regular City Council meeting of November 14, 2017;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, DO ORDAIN AS FOLLOWS:

- Section 1.** Repealers. The current EMC Title 14 – Critical Areas is hereby repealed in its entirety.
- Section 2.** Code Replacement. The new EMC Title 14 – Critical Areas, attached hereto as Exhibit A, is hereby adopted by the City Council of the City of Edgewood and shall be codified as such.
- Section 3.** Severability. Should any section, paragraph, sentence, clause or phrase of this ordinance, or its application to any person or circumstance be declared unconstitutional or otherwise invalid for any reason, or should any portion of this ordinance be preempted by state or federal law or regulation, such decision or preemption shall not affect the validity of the remaining portions of this ordinance or its application to other persons or circumstances.
- Section 4.** Effective Date and Publication. A summary of this ordinance consisting of its title shall be published in the official newspaper of the City. This ordinance shall take effect and be in full force five (5) days after the date of publication or the date of incorporation as the law may require.

ADOPTED BY THE CITY COUNCIL ON THE 12TH DAY OF DECEMBER, 2017.

Daryl Eiding, Mayor

ATTEST/AUTHENTICATED:

Rachel Pitzel, City Clerk

APPROVED AS TO LEGAL FORM:

Carol Morris, CITY ATTORNEY

DATE OF PUBLICATION:
EFFECTIVE DATE:

DRAFT



November 22, 2017

Mayor Daryl Eiding
2224 104th Avenue East
Edgewood, WA 98372

Re: Proposed Critical Areas Ordinance

Honorable Mayor Eiding and members of the City Council,

This letter is in reference to the proposed Critical Areas Ordinance amendments. The Master Builders Association of Pierce County (MBA Pierce) is a local association composed of over 625 member companies which are involved in the building industry in Pierce County. On behalf of the MBA Pierce, thank you for your consideration of these comments.

The proposed Critical Areas Ordinance (CAO) amendments being considered by the City Council are, for the most part, meant to bring the City current with Washington Department of Ecology (DOE) guidelines/minimum requirements which a majority of other local jurisdictions have already adopted. There are only a few parts in which MBA Pierce would like to provide feedback:

1. **Wetland specialist definition:** Under the "Definitions" section on page 21, the definition in the proposed amendments is broad and could allow anyone to work as a "specialist". This definition should state a "Society of Wetland Scientist, certified Professional Wetland Scientist or Wetland Scientist in-training".
2. **Time Limitations:** Under the "Administration" section on page 24, Critical Area approval should be valid for 5 years.
3. **Financial Guarantees:** Under "Critical area protective measures" on page 25, the release of financial guarantees should occur at the implementation stage and a portion each year of maintenance and monitoring, provided performance standards are met.
4. **Variance Criteria:** Under "Variances to critical areas" on page 28, best available science should have nothing to do with granting a variance.
5. **Activities exempt from the title:** Under "Exemptions" on page 37, "Existing agricultural activities and structures shall comply with the provisions of Chapter 14.70 EMC, Flood Hazard Areas" should not be deleted.
6. **Activities exempt from the title:** Under "Exemptions" on page 37, "Maintenance or reconstruction of existing, lawfully established public facilities; provided, that reconstruction does not involve expansion of the facility" should be left in place.
7. **Activities exempt from the title:** Under "Exemptions" on page 38, "Maintenance or reconstruction of existing private roads, driveways, onsite septic systems, and wells; provided, that reconstruction does not involve expansion of facilities, widening, or relocation" should be left in place.

www.mbapierce.com

8. **Wetland Categories:** On page 46 under Section D, *(Just a comment so staff and the Council are aware)*, it should be noted that this adds \$1,000 onto the rating cost of every wetland because of the time it takes to prepare the required supporting maps.
9. **Modification of buffer widths:** On page 52 under subsection "g", why not consider 50% of the standard width as opposed to the proposed 75%?

Additionally, MBA Pierce Members are concerned more about the proposed changes to the width of the wetland buffers which go beyond what is required by DOE. For example, a category III wetland today would have a 50 foot buffer. Under the proposed changes, the same wetland would typically have either a 105 or 165 foot buffer which goes well beyond the DOE's minimum requirements for wetland buffers. As further illustration, on page 52 under "Buffer standards", habitat scores are frequently 5 or 6 points. Buffer sizes for II and III wetlands should be different, maybe 75 feet for 5 pts and 105 feet for 6 pts, category III wetlands. You won't find any 8-9 habitat score category III wetlands. This will have a detrimental effect not only on the building industry in Edgewood, but also on your local residents looking to develop land they own within the City limits.

We would strongly encourage the City to consider the lasting economic effects and impacts on your resident's property rights and would ask that the City adopt the DOE's minimum requirements on all wetland buffer requirements. MBA Pierce supports staying within the DOE's guidelines, but going to the highest end of those guidelines can be overly restrictive and negatively impact a person's ability to develop their property. Additionally, we ask that you consider the additional feedback MBA Pierce provided above regarding the other amendments being considered by the City Council. Thank you for consideration of these comments. MBA Pierce appreciates your willingness to review comments and consider input from those who would be impacted by decisions made by the City Council.

Sincerely,



Jeremiah Lafranca
Government Affairs Director
Master Builders Association of Pierce County

Cc: Mark L. Creley, Position 1
Luke Meyers, Position 2
Tyron Christopherson, Position 3
Rosanne Tomy, Position 4
Donna O'Ravez, Position 5
Stephanie Shook, Position 6
Nate Lowry, Position 7