



**CITY OF EDGEWOOD
COUNCIL STUDY SESSION AGENDA**

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

1. CALL TO ORDER

Pledge of Allegiance & Roll Call

2. COUNCIL BUSINESS

- A. Review/Discussion** – Resolution – BHC Consultants
- B. Discussion (no material)** – Utility Tax
- C. Review/Discussion** – Proposed 2018 Property Tax
- D. Review/Discussion** – Preliminary 2018 Budget
- E. Review/Discussion** – PC recommendation - Critical Areas Ordinance
- F. Review/Discussion (no material)** – PC Work and Land Use Policy
- G. Review/Discussion** – Caldwell Crest Final Plat
- H. Review/Discussion** – Resolution - CIP 2018-2023
- I. Review/Discussion** – Resolution - TIP 2018-2023
- J. Review/Discussion** – Review submission of Council Highlight (Winter Edition)

3. OTHER COUNCIL ITEMS

4. 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
REQUEST FOR COUNCIL ACTION
STUDY SESSION AGENDA ITEM: BHC Consultants Contract**

Date: November 7, 2017

Title: BHC Consultants- Building Div. Plan Review & Inspection Services

Attachments: On-Call Consultant Services Contract

Submitted By: Dave Gray, Assistant City Administrator

Approved For Agenda By: Daryl Eiding, Mayor

Prepared For Agenda By: Dave Gray, Assistant City Administrator

Discussion: Due to the amount of private and public construction projects coming online within the City of Edgewood, building plan review services are needed to ensure a timely and professional review, wherein City Staff are currently already managing a full workload.

Recommendation: Move forward to the next regular Council meeting for approval.

Alternatives: 1) Do not adopt. 2) Forward to Study Session for further review

Fiscal Impact: Not to exceed \$75,000 with expiration of January 1, 2019.

**ON-CALL CONSULTANT SERVICES CONTRACT
BETWEEN THE CITY OF EDGEWOOD AND
BHC CONSULTANTS**

THIS AGREEMENT is made by and between the City of Edgewood, a Washington municipal corporation (hereinafter the "City"), and BHC Consultants, (hereinafter the "Consultant,") a corporation organized under the laws of the State of Washington, located and doing business at 1601 Fifth Avenue, Suite 500, Seattle, WA 98101.

RECITALS

WHEREAS, the City requires back-up plan review and onsite building inspection services; and

WHEREAS, the Consultant has agreed to provide these services on an on-call basis, as the need arises for the City of Edgewood;

NOW, THEREFORE, in consideration of the mutual promises set forth herein, it is agreed by and between the parties as follows:

TERMS

I. Description of Work.

The Consultant shall perform Building Plan Review and Onsite Building Inspection Services as needed by the City of Edgewood, all as described in Exhibit A, attached hereto and incorporated herein by this reference. The City shall issue a written Task Order for each project assigned to the Consultant. The written Task Order shall include the following information, which may be furnished in consultation with the Consultant: (1) Task Order Title (project name); (2) technical approach to the task (if necessary); (3) specific deliverables; (4) schedule with milestones and deliverables; (5) cost/hour estimate; (6) due date of work. All of these items may be brief, but will be sufficiently detailed for the Consultant to understand the work being authorized and the amount it will cost. Written Task Orders and Notices to Proceed may be issued as e-mail documents.

The City does not permit sub consultants for those items of work necessary for the completion of any Task Order on any project. The Consultant shall not subcontract with sub consultants for the performance of any work under this Agreement without prior written permission of the City.

II. Payment

A. This Agreement does not guarantee any amount of work for the Consultant. Task Orders will be developed as determined by the City and as provided for in this Agreement. The City shall pay the Consultant an amount based on time and materials, not to exceed Seventy Five Thousand Dollars (\$75,000.00) for the services described in Section I and Exhibit A. This is the maximum amount to be paid under this Agreement for the work described in this Agreement, and shall not be exceeded without the prior written authorization of the City in the form of a

negotiated and executed supplemental agreement. PROVIDED, HOWEVER, the City reserves the right to direct the Consultant's compensated services under the time frame set forth in Section IV herein before reaching the maximum amount.

B. The Consultant shall be paid by the City for completed services rendered under each approved individual Task Order. Such payment shall be full compensation for work performed or services rendered and for all labor, materials, supplies equipment and incidentals necessary to complete the work. The Consultant shall submit an itemized invoice to the City for each separate Task Order after the services have been performed.

C. The amount paid by the City for each invoice shall not exceed the amount in Section II(A) above and the Hourly Billing Rates set forth in Exhibit B, which is attached hereto and incorporated herein by this reference. The City shall pay the full amount of an invoice within sixty (60) days of receipt. If the City objects to all or any portion of any invoice, it shall so notify the Consultant of the same within fifteen (15) days from the date of receipt and shall pay that portion of the invoice not in dispute, and the parties shall immediately make every effort to settle the disputed portion.

D. The Consultant will not undertake any work or otherwise financially obligate the City in excess of said not-to-exceed amount in Section II (A) without a duly authorized amendment to this Agreement. In the event services are required beyond those specified in the Scope of Work and are not included in the compensation listed in this Agreement, a written contract amendment shall be negotiated and approved by the City before any effort is expended on such services.

III. Relationship of Parties

The parties intend that an independent contractor-client relationship will be created by this Agreement. As the Consultant is customarily engaged in an independently established trade which encompasses the specific service provided to the City hereunder, no agent, employee, representative or sub-consultant of the Consultant shall be or shall be deemed to be the employee, agent, representative or sub-consultant of the City. In the performance of the work, the Consultant is an independent contractor with the ability to control and direct the performance and details of the work, the City being interested only in the results obtained under this Agreement. None of the benefits provided by the City to its employees including, but not limited to, compensation, insurance, and unemployment insurance are available from the City to the employees, agents, representatives, or sub-consultants of the Consultant. The Consultant will be solely and entirely responsible for its acts and for the acts of its agents, employees, representatives and sub-consultants during the performance of this Agreement. The City may, during the term of this Agreement, engage other independent contractors to perform the same or similar work that the Consultant performs hereunder.

IV. Duration of Work

The Consultant shall not begin any work under this Agreement until an authorized Task Order has been agreed upon by the parties, and the City has issued a Notice to Proceed. This

Agreement shall expire on January 1, 2019, unless extended by an amendment executed by the duly authorized representatives of the parties.

V. Termination

A. Termination of Agreement. The City may terminate this Agreement, for public convenience, the Consultant's default, the Consultant's insolvency or bankruptcy, or the Consultant's assignment for the benefit of creditors, at any time prior to completion of the work described herein. If delivered to Consultant in person, termination shall be effective immediately upon the Consultant's receipt of the City's written notice or such date stated in the City's notice, whichever is later.

B. Rights upon Termination. In the event of termination, the City shall pay for all services satisfactorily performed by the Consultant to the effective date of termination, as described on a final invoice submitted to the City. Said amount shall not exceed the amount in Section II above. After termination, the City may take possession of all records and data within the Consultant's possession pertaining to this Agreement, which records and data may be used by the City without restriction. Upon termination, the City may take over the work and prosecute the same to completion, by contract or otherwise.

VI. Discrimination

In the hiring of employees for the performance of work under this Agreement or any sub-contract hereunder, the Consultant, its Subcontractors, or any person acting on behalf of such Consultant or sub-consultant shall not by reason of race, religion, color, sex, national origin, or the presence of any sensory, mental, or physical disability, discriminate against any person who is qualified and available to perform the work to which the employment relates.

VII. Indemnification

The Consultant shall defend, indemnify and hold the City, its officers, officials, employees, agents and volunteers harmless from any and all claims, injuries, damages, losses or suits, including all legal costs and attorneys' fees, arising out of or resulting from the acts, errors or omissions of the Consultant in connection with the performance of this Agreement, except for injuries and damages caused by the sole negligence of the City. The City's inspection or acceptance of any of the Consultant's work when completed shall not be grounds to avoid any of these covenants of indemnification.

Should a court of competent jurisdiction determine that this Agreement is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Consultant and the City, its officers, officials, employees, agents and volunteers, the Consultant's liability hereunder shall be only to the extent of the Consultant's negligence.

IT IS FURTHER SPECIFICALLY AND EXPRESSLY UNDERSTOOD THAT THE INDEMNIFICATION PROVIDED HEREIN CONSTITUTES THE CONSULTANT'S WAIVER OF IMMUNITY UNDER INDUSTRIAL INSURANCE, TITLE 51 RCW, SOLELY FOR THE PURPOSES OF THIS INDEMNIFICATION. THE PARTIES FURTHER

ACKNOWLEDGE THAT THEY HAVE MUTUALLY NEGOTIATED THIS WAIVER. THE CONSULTANT'S WAIVER OF IMMUNITY UNDER THE PROVISIONS OF THIS SECTION DOES NOT INCLUDE, OR EXTEND TO, ANY CLAIMS BY THE CONSULTANT'S EMPLOYEES DIRECTLY AGAINST THE CONSULTANT.

The provisions of this section shall survive the expiration or termination of this Agreement.

VIII. Insurance

The Consultant shall procure and maintain for the duration of the Agreement, insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Consultant, its agents, representatives, or employees.

A. Minimum Scope of Insurance. Consultant shall obtain insurance of the types described below:

1. Automobile Liability insurance covering all owned, non-owned, hired and leased vehicles. Coverage shall be written on Insurance Services Office (ISO) form CA 00 01 or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage.
2. Commercial General Liability insurance shall be written on ISO occurrence form CG 00 01 or a substitute form providing equivalent liability coverage and shall cover liability arising from premises, operations, independent contractors and personal injury and advertising injury. The City shall be named by endorsement as an additional insured under the Consultant's Commercial General Liability insurance policy with respect to the work performed for the City.
3. Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington.
4. Professional Liability insurance appropriate to the Consultant's profession.

B. Minimum Amounts of Insurance. Consultant shall maintain the following insurance limits:

1. Automobile Liability insurance with a minimum combined single limit for bodily injury and property damage of \$1,000,000 per accident.
2. Commercial General Liability insurance shall be written with limits no less than \$1,000,000 each occurrence, \$2,000,000 general aggregate.
3. Professional Liability insurance shall be written with limits no less than \$1,000,000 per claim and \$1,000,000 policy aggregate limit.

4. Employer's Liability each accident \$1,000,000. Employer's Liability Disease each employee \$1,000,000. Employer's Liability Disease -- Policy Limit \$1,000,000.
- C. Other Insurance Provisions. The insurance policies are to contain, or be endorsed to contain, the following provisions for Automobile Liability, Professional Liability and Commercial General Liability insurance:
1. The Consultant's insurance coverage shall be primary insurance as respect the City. Any insurance, self-insurance, or insurance pool coverage maintained by the City shall be excess of the Consultant's insurance and shall not contribute with it.
 2. The Consultant's insurance shall be endorsed to state that coverage shall not be cancelled by either party, except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the City.
 3. The City will not waive its right to subrogation against the Consultant. The Consultant's insurance shall be endorsed acknowledging that the City will not waive the right of subrogation against the City, or any self-insurance, or insurance pool coverage maintained by the City.
 4. If any coverage is written on a "claims made" basis, then a minimum of three (3) year extended reporting period shall be included with the claims made policy and proof of this extended reporting period provided to the City.
- D. Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best rating of not less than A:VII.
- E. Verification of Coverage. Consultant shall furnish the City with original certificates and a copy of the amendatory endorsements, including but not necessarily limited to the additional insured endorsement, evidencing the insurance requirements of the Consultant before commencement of the work.

IX. Exchange of Information

The City warrants the accuracy of any information supplied by it to the Consultant for the purpose of completion of the work under this Agreement. The parties agree that the Consultant will notify the City of any inaccuracies in the information provided by the City as may be discovered in the process of performing the work, and that the City is entitled to rely upon any information supplied by the Consultant which results as a product of this Agreement.

X. Ownership and Use of Records and Documents

Original documents, drawings, designs and reports developed under this Agreement shall belong to and become the property of the City. All written information submitted by the City to the Consultant in connection with the services performed by the Consultant under this Agreement will be safeguarded by the Consultant to at least the same extent as the Consultant safeguards like information relating to its own business. If such information is publicly available or is already in Consultant's possession or known to it, or is rightfully obtained by the Consultant from third parties, the Consultant shall bear no responsibility for its disclosure, inadvertent or otherwise.

XI. City's Right of Inspection

Even though the Consultant is an independent contractor with the authority to control and direct the performance and details of the work authorized under this Agreement, the work must meet the approval of the City and shall be subject to the City's general right of inspection to secure the satisfactory completion thereof. The Consultant agrees to comply with all federal, state, and municipal laws, rules, and regulations that are now effective or become applicable within the terms of this Agreement to the Consultant's business, equipment, and personnel engaged in operations covered by this Agreement or accruing out of the performance of such operations.

XII. Consultant to Maintain Records to Support Independent Contractor Status

On the effective date of this Agreement (or shortly thereafter), the Consultant shall comply with all federal and state laws applicable to Independent contractors including, but not limited to the maintenance of a separate set of books and records that reflect all Items of income and expenses of the Consultant's business, pursuant to the Revised Code of Washington (RCW) Section 51.08.195, as required to show that the services performed by the Consultant under this Agreement shall not give rise to an employer-employee relationship between the parties which is subject to RCW Title 51, Industrial Insurance.

XIII. Work Performed at the Consultant's Risk

The Consultant shall take all precautions necessary and shall be responsible for the safety of its employees, agents, and sub-consultants in the performance of the work hereunder and shall utilize all protection necessary for that purpose. All work shall be done at the Consultant's own risk, and the Consultant shall be responsible for any loss of or damage to materials, tools, or other articles used or held by the Consultant for use in connection with the work.

XIV. Non-Waiver of Breach

The failure of the City to insist upon strict performance of any of the covenants and agreements contained herein, or to exercise any option herein conferred in one or more instances, shall not be construed to be a waiver or relinquishment of said covenants, agreements, or options and the same shall be and remain in full force and effect.

XV. Resolution of Disputes and Governing Law

Should any dispute, misunderstanding, or conflict arise as to the terms and conditions contained in this Agreement, the matter shall first be referred to the Mayor of the City of Edgewood, who shall determine the term or provision's true intent or meaning. The City of Edgewood shall also decide all questions which may arise between the parties relative to the actual services provided or to the sufficiency of the performance hereunder.

If any dispute arises between the City and the Consultant under any of the provisions of this Agreement which cannot be resolved by the Mayor's determination in a reasonable time, or if the Consultant does not agree with the City's decision on the disputed matter, jurisdiction of any resulting litigation shall be filed in Pierce County Superior Court, Pierce County, Washington. This Agreement shall be governed by and construed in accordance with the laws of the State of Washington. The non-prevailing party in any action brought to enforce this Agreement shall pay the other party's expenses and reasonable attorney's fees.

XVI. Written Notice

All communications regarding this Agreement shall be sent to the parties at the addresses listed on the signature page of the agreement, unless notified to the contrary. Unless otherwise specified, any written notice hereunder shall become effective upon the date of mailing by registered or certified mail, and shall be deemed sufficiently given if sent to the addressee at the address stated below:

CONSULTANT:

BHC Consultants
Attn: William Hill
1601 Fifth Avenue, Suite 500
Seattle, WA 98101

CITY:

City of Edgewood
Attn: Daryl Eiding (Mayor)
2224 - 104th Avenue East
Edgewood, WA 98372
With a copy to the "City Clerk" at the same address.

XVII. Assignment

Any assignment of this Agreement by the Consultant without the written consent of the City shall be void. If the City shall give its consent to any assignment, this paragraph shall continue in full force and effect and no further assignment shall be made without the City's consent.

XVIII. Modification and Severability

No waiver, alteration, or modification of any of the provisions of this Agreement shall be binding unless in writing and signed by a duly authorized representative of the City and the Consultant.

The provisions of this Agreement are declared to be severable. If any provision of this Agreement is for any reasons held to be invalid or unconstitutional by a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity or constitutionality of any other provision.

XIX. Entire Agreement

The written provisions and terms of this Agreement, together with any Exhibits attached hereto, shall supersede all prior verbal statements of any officer or other representative of the City, and such statements shall not be effective or be construed as entering into or forming a part of or altering in any manner whatsoever, this Agreement or the Agreement documents. The entire agreement between the parties with respect to the subject matter hereunder is contained in this Agreement and any Exhibits attached hereto, which may or may not have been executed prior to the execution of this Agreement. All of the above documents are hereby made a part of this Agreement and form the Agreement document as fully as if the same were set forth herein. Should any language in any of the Exhibits to this Agreement conflict with any language contained in this Agreement, then this Agreement shall prevail.

IN WITNESS WHEREOF, the parties have executed this Agreement on this ____ day of _____, 2017.

CONSULTANT

By: _____
Its President

BHC Consultants

CITY OF EDGEWOOD

By: _____
Daryl Eidinger, Mayor

ATTEST:

Rachel Pitzel, City Clerk

APPROVED AS TO FORM:

Carol Morris, City Attorney

EXHIBIT A SCOPE OF SERVICES

1. PLAN REVIEW

- A. BHC Consultants will review plans submitted with building permit applications for structural and nonstructural code compliance in accordance with the currently adopted construction codes as adopted and amended by the State of Washington and City of Edgewood (City), except that BHC will confer with the Building Official and his/her agent on any portion of the review that specifically requires the approval of the Building Official as specified in the code(s).
- B. The services to be performed by BHC will not begin until receiving a written Task Order, as described in Section I of the attached contract, from the City that identifies the specific tasks to be performed.
- C. BHC will not perform plan mark ups, make any complex structural changes on the plans, or make any changes that directly contradict other information on the plans. Significant changes must be made by or under the direction of the applicant's design professional. All notes and details must be on the approved permit set of plans.
- D. If corrections or additions are required, BHC will write a review letter addressed to the City and/or applicant. The City will then send BHC's review letter, along with any additional City requirements, to the applicant. The correction letter will indicate to the applicant that they are required to submit the revisions/additions to the City per the submittal requirements for the permit type under review.
- E. Upon completion of the plan review, BHC will indicate that the drawings have been reviewed and found to be in substantial compliance with applicable construction codes and ordinances. BHC's name, and date of compliance will be affixed to each sheet up to two sets of drawings or as otherwise requested by the City. The plan reviewer's signature will also be affixed to the coversheet.
- F. Complete reviews will include structural, nonstructural, plumbing, mechanical, accessibility, energy, and ventilation requirements. Partial reviews will be indicated as either structural or nonstructural or as mutually agreed upon.

2. PROCESS

- A. The City will determine which plans are to be reviewed by BHC according to the individual Task Order.
- B. The City will intake, track and process the permit applications and all

revisions per current building and permit administration procedures.

- C. BHC will be responsible for the transportation of permit review documents to the City. The City will be responsible for the transportation of permit review documents to BHC.
- D. BHC will complete the initial review and will have either approved the application and notified the City of approval or contacted the applicant and/or the City with corrections within the time frames listed below:

Typical Review Times:

Project Type	Initial Review	Re-Review
Single-Family	10 days (2 weeks)	5 days (1 week)
Multi-Family	15 days (3 weeks)	10 days (2 weeks)
Commercial	20 days (4 weeks)	15 days (3 weeks)

Turn-around time for large, complex and non-typical types of permit applications is to be negotiated.

- E. BHC will review any revisions or additional information and will either indicate compliance with the code(s) against which it was checked and notify the City of compliance, or if the drawings are still not complete, contact the applicant and/or the City with additional revision requests within the time frames specified above.
- F. The typical review times as noted above may be negotiated based on the number and/or complexity of projects the City wishes to send to BHC at one time or within a short window of time. BHC will not be held responsible for delays beyond BHC's control. BHC shall notify the City of revisions to estimated target dates.

3. BUILDING INSPECTIONS

- A. Consultant will provide a certified building inspector to perform the following services:
 - 1. Upon authorization by the City by written Task Order, as described in Section I of the attached contract, the inspector will perform building inspection work for the City.
 - 2. At the request by the City, the inspector shall be asked to perform one or more of the following inspection tasks:
 - non-structural fire and life safety inspections
 - structural inspections
 - energy code inspections
 - barrier free inspections
 - mechanical inspections

- plumbing inspections
- B. Inspector will provide building inspections in accordance with the currently adopted International Codes, Washington State Building Code (WAC 51-50 and 51-51), and energy code (WAC 51-11), and the applicable City Building Codes, except that inspector will confer with the Building Official or his/her agent on any portion of the review that specifically requires an approval of the Building Official under the applicable Code(s), or that involves an unusual interpretation .
- C. Inspections will be done in accordance codes, ordinances and regulations in effect and will be performed in a courteous and professional manner. Up-to-date records of inspection status will be maintained on the job card in the field and on the office copy of the permit.
- D. The City shall guarantee a minimum of four (4) hours inspection work each day inspection services are delivered on-site on behalf of the City.

Shouldn't this be hourly rates only. The contract is for "on-call" services. Why would we have a percentage fee schedule if this contract only covers on-call, not project consulting? I think all we need here is hourly? Do I have this right? Dave

EXHIBIT B – COMPENSATION

1. **LUMP SUM.** The City shall pay BHC a lump-sum fee for performing an initial review and one recheck for each project. The fee shall be based on a percentage of the plan review fee as tabulated below or as mutually agreed upon between the City and BHC. The plan review fee shall be based on the fees charged by resolution for the City.

<i><u>Commercial and Multi-Family Projects</u></i>	<i>Percentage of Plan Review Fee</i>	
	Valuation < \$2,000,000	Valuation \$2,000,000 To \$5,000,000
Complete Plan Review	70%	65%
Partial Plan Review (structural only or nonstructural only)	40%	40%
	Valuation \$5,000,001 to \$10,000,000	Valuation \$10,000,001 and up
Complete Plan Review	60%	50%
Partial Plan Review (structural only or nonstructural only)	40%	40%

Single Family Projects

Complete Plan Review	65% of Plan Review Fee
Partial Plan Review (structural only or nonstructural only)	40% of Plan Review Fee

- 1.1 All other review services and reviews in excess of two (the initial review plus one re-check) shall be paid on a time-and-expense basis using an hourly rate identified in Schedule B.
- 1.2 Each billing statement will include the permit number, BHC task review number and owner or project name of the plans reviewed with the fee.
- 1.3 Billing statements will be issued for reviews that receive a complete initial review in the preceding month or other acceptable time period. All remaining fees for any project previously billed will be invoiced for total balance due after final review has been completed and plans returned to the City. Fees for large projects maybe invoiced over a several month period when agreeable to both the City and BHC.
- 1.4 On-call and other services will be provided as desired by the City and agreed upon by BHC on a time-and-expense basis using an hourly rate identified in Exhibit B.

2. HOURLY LABOR RATES SCHEDULES

<u>Classification</u>	<u>Hourly Rates</u>
Building Inspector (Combination)	\$85
Plan Checker I (hourly charges)	\$130
Plan Reviewer II - Structural	\$175
Civil/site plan review (P.E.)	\$150
Principal Consultant (Building Official)	\$150
Administration assistance/Clerical	\$75

Overtime Services: 150% of Above Rates Shown
(No overtime will be charged without prior written authorization by the City.)

On-call and other services will be provided as desired by the City and agreed upon by BHC in writing by both parties on a time-and-expense basis using an hourly rate identified in Schedule B.

REIMBURSABLE EXPENSES

Travel will be reimbursed for time and mileage at the current IRS mileage reimbursement rate.

For all "on call" inspection and added services, mileage may be billed portal to portal at current IRS rate.

No further reimbursable expenses are included in this contract.



**CITY OF EDGEWOOD
STAFF REPORT**

STUDY SESSION AGENDA ITEM: 2018 Property Tax

Date: November 7, 2017

Title: 2018 Property Tax

Attachments: 2018 Property Tax Ordinance 17-XXXX, Pierce County Levy Certification, City of Edgewood Agenda Bill 17-XXXX

Submitted By: Asst. City Administrator, Dave Gray

Approved For Agenda By: Daryl Eiding, Mayor

Discussion: The attached documents provide for Council adoption of the statutory limit increase to property taxes of 1%, together with new construction and refunds.

Recommendation: Staff recommends that the City Council requests the Mayor present the Ordinance for consideration and action after the public meeting on Property Taxes at the November 14th Regular Council Meeting.

Alternatives: Schedule a special meeting for further discussion prior to the Public Hearing on November 14th. Advise the Mayor to modify the tax levy ordinance.

Fiscal Impact: The total property tax collection will increase revenue to the City by \$107,896.01 in fiscal 2018. This is a consolidation of the Levy Increase of \$15, 751.39, New Construction of \$93,655.87 and refunds of \$1,063.18. The actual Levy Increase of \$15,751.39 will equate to approximately \$4.64 dollars in 2018 or about 39 cents per month.

ORDINANCE NO. 17-xxx

**AN ORDINANCE OF THE CITY COUNCIL OF THE
CITY OF EDGEWOOD, WASHINGTON, SETTING
THE PROPERTY TAX LEVY FOR FISCAL YEAR 2018**

WHEREAS, the City of Edgewood attests that the City's population is 10,001; and

WHEREAS, the City Council of the City of Edgewood has properly given notice of a public hearing on revenue sources for the City's following year's current expense budget, held on November 14, 2017. The hearing included the City's consideration of possible increases in property tax revenues for fiscal year 2018, pursuant to RCW 84.55.120; and

WHEREAS, the City of Edgewood's highest lawful levy amount since 1985 was \$1,575,138.85; and

WHEREAS, the City of Edgewood's actual levy amount from the previous year was \$1,577,723.28.

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

Section 1. Property Tax Levy. An increase in the regular property tax levy is hereby authorized for the levy to be collected in the 2018 tax year. The dollar amount of the increase over the actual levy amount from the previous year shall be \$15,751.39 which is a percentage increase of 1% from the previous year. This increase is exclusive of additional revenue resulting from new construction, improvements to property, newly constructed wind turbines, any increase in the value of state assessed property, any annexations that have occurred and refunds made.

Section 2. Severability. If any section, sentence, clause, or phrase of this ordinance should be held to be invalid or unconstitutional by a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity or constitutionality of any other section, sentence, clause, or phrase of this ordinance.

Section 3. Certified Copies To Be Filed. Pursuant to RCW 84.52.020, the City Clerk is hereby directed to file certified copies of this Ordinance with the appropriate Pierce County authorities.

Section 4. Effective Date. This ordinance, being an exercise of a power specifically delegated to the City legislative body, is not subject to referendum, and shall take effect five (5) days after publication in the City's official newspaper.

**PRESENTED TO COUNCIL FOR FIRST READING AND ADOPTION ON
NOVEMBER 14, 2017.**

SIGNED BY:

Mayor Daryl Eiding

ATTEST/AUTHENTICATED:

City Clerk Rachel Pitzel, CMC

APPROVED AS TO FORM:

City Attorney Carol Morris

Date of Publication:

Effective Date:

Levy Certification

Submit this document to the county legislative authority on or before November 30 of the year preceding the year in which the levy amounts are to be collected and forward a copy to the assessor.

In accordance with RCW 84.52.020, I, Rachel Pitzel,
(Name)

City Clerk, for Edgewood, do hereby certify to
(Title) (District Name)

the Pierce County legislative authority that the Council
(Name of County) (Commissioners, Council, Board, etc.)

of said district requests that the following levy amounts be collected in 2018 as provided in the district's
(Year of Collection)

budget, which was adopted following a public hearing held on 11/14/17:
(Date of Public Hearing)

Regular Levy: \$1,684,556.11
(State the **total** dollar amount to be levied)

Excess Levy: _____
(State the **total** dollar amount to be levied)

Refund Levy: \$1,063.18
(State the **total** dollar amount to be levied)

Signature: _____

Date: 11/15/17

To ask about the availability of this publication in an alternate format for the visually impaired, please call (360) 705-6715. Teletype (TTY) users, please call (360) 705-6718. For tax assistance, call (360) 534-1400.



**CITY OF EDGEWOOD
REQUEST FOR COUNCIL ACTION
Agenda Bill No.: 17-XXXX**

Date Action Requested: November 14, 2017

Title: 2018 Property Tax Levy

Attachments: Ordinance No. 17-XXXX

Submitted By: Dave Gray, Assistant City Administrator

Approved For Agenda By: Daryl Eiding, Mayor

Prepared For Agenda By: Dave Gray, Assistant City Administrator

Recommendation: Adopt the attached 2018 property tax levy ordinance, increasing the 2018 Property Tax Collection by \$15,751.39 (one percent increase) for Council discussion and action.

Discussion: Every year the Council is required to hold a Public Hearing to discuss Revenues Sources to fund the upcoming year budget. This discussion is related to general government services, funded for the most part through taxes. Since the City does not have other tax sources the Council controls (sales tax, liquor tax, utility tax or B&O tax) this discussion is a focus on property taxes. For the reason just mentioned, my opinion is the City should levy the maximum allowed under the law, which is limited to a 1% increase above the final prior year levy amount. For 2018, the test, which tests both the millage rate and total dollars collected, is capped at an increase of 1%, or a total levy increase of \$15,751.39 for collection in the 2018 budget year.

Alternatives: 1) Instruct the Mayor to reduce the levy below the statutory limit.

Fiscal Impact: If passed as drafted the ordinance will increase City Tax Revenue and the burden on City Property Tax payers by \$15,751.39, representing a one percent increase to individual homeowners city portion of their property tax bill. The current estimate for a homeowner's property tax bill that goes to the City for City Services is approximately 11 percent. For a home with a \$350,000 assessed value, this City increase would constitute about a \$4.64 annual increase or about 39 cents per month.

CITY OF EDGEWOOD
STAFF REPORT
STUDY SESSION AGENDA ITEM: 2017 Preliminary Budget

Date: November 7, 2017

Title: 2018 Preliminary Budget

Attachments: 2018 Preliminary Budget

Submitted By: Asst. City Administrator, Dave Gray

Approved For Agenda By: Daryl Eiding, Mayor

Discussion: We begin the process of discussing specifics with Council on Labor, Expenditures & Capital Spending in preparation for the final budget schedule to be presented to the public on November 28 and modified for adoption by Council on December 12th.

Recommendation: This is a discussion seeking specific direction from Council on the labor and expenditure models using known imposed costs (tax and benefits) and discretionary spending as well as planned spending for 2018 on capital items identified in the Capital Improvement Plan and Transportation Improvement Plan adopted by Council on the 24th of November.

Alternatives: Don't discuss the budget and go for ice cream? Pizza?

Fiscal Impact: Yet to be determined. Discussion only.

2018 Preliminary Budget

Fiscal: 2017 - October 31, 2017 Preliminary Budget, Revenue & Capital

Account Number	Description	Actual 2016	Budget 2017	Actual 2017	% Actual of Budget YTD	Year End Forecast	Budget 2018	2018 Increase
001-000-000-311-10-00-01	Property Tax	1,531,292	1,577,690	887,844	56.3%	1,577,690	1,685,619	107,929
001-000-000-313-11-00-01	Sales & Use Tax	876,627	875,000	742,917	84.9%	901,250	993,000	118,000
001-000-000-313-17-10-02	Local Parks - Sales/Use Tax	89,390	85,000	71,245	83.8%	87,550	90,177	5,177
001-000-000-313-71-00-01	Local Criminal Justice	159,496	150,000	112,163	74.8%	150,000	150,000	0
001-000-000-317-20-00-01	Leasehold Excise Tax Revenue	95	0	95	N/B	95	95	95
	001-000-000-31 Total	2,656,901	2,687,690	1,814,264	67.5%	2,716,585	2,918,891	231,201
001-000-000-321-60-00-04	Conditional Use Permit	5,730	3,820	6,330	165.7%	6,330	6,330	2,510
001-000-000-321-60-00-05	Temporary Use Permit	3,035	2,827	915	32.4%	2,827	2,827	0
001-000-000-321-60-00-06	Sign Permit	1,142	1,142	0	0.0%	0	0	-1,142
001-000-000-321-91-00-01	Cable Franchise Fees	171,456	175,000	137,181	78.4%	182,903	183,000	8,000
001-000-000-321-99-00-01	Business Licensing	29,302	29,945	28,374	94.8%	29,000	29,000	-945
001-000-000-322-10-00-01	Building Permit	290,809	260,000	391,608	150.6%	290,809	291,000	31,000
001-000-000-322-10-00-02	Mechanical Permit	36,047	40,000	43,930	109.8%	87,860	60,000	20,000
001-000-000-322-10-00-03	Plumbing Permit	45,576	60,000	49,763	82.9%	99,526	67,000	7,000
001-000-000-322-10-00-04	Conditional Use Permit	0	14,000	0	0.0%	0	0	-14,000
001-000-000-322-10-00-05	Temporary Use Permit	180	500	0	0.0%	0	0	-500
001-000-000-322-10-00-06	Other/Miscellaneous Permits	75	2,000	1,571	78.6%	2,000	2,000	0
101-000-000-322-40-00-02	Street Vacation	5,760	0	0	N/B	0	0	0
101-000-000-322-40-00-04	Right-of-Way Permit	30,302	0	60,488	N/B	60,488	61,000	61,000
	001-000-000-32 Total	619,414	589,234	720,161	8	761,743	702,157	112,923
001-000-000-333-20-60-01	U.S. Dept. of Transp. Grant	2,000	0	0	N/B	0	0	0
001-000-000-336-00-98-01	City Assistance	116,829	123,523	85,433	69.2%	89,326	91,594	-31,930
001-000-000-336-06-21-01	Local Criminal Justice - Pop.	2,648	3,000	2,050	68.3%	2,030	3,028	28
001-000-000-336-06-25-01	Criminal Justice-Contract Svs.	16,398	16,000	27,419	171.4%	16,500	16,582	582
001-000-000-336-06-26-01	Criminal Justice-Special Prog.	9,656	10,000	7,446	74.5%	14,892	10,758	758
001-000-000-336-06-41-01	Marijuana Enforcement	8	8	0	0.0%	8	8	0
001-000-000-336-06-51-01	DUI Cities	1,499	1,500	1,109	73.9%	1,118	1,458	-42
001-000-000-336-06-94-01	Liquor Excise Tax	44,860	45,000	34,231	76.1%	44,860	46,397	1,397
001-000-000-336-06-95-01	Liquor Board Profits	82,826	90,000	61,662	68.5%	85,000	82,446	-7,554
001-000-000-338-71-00-00	L & I Internship	0	2,188	0	0.0%	2,200	2,188	1
	001-000-000-33 Total	276,725	291,219	219,349	75.3%	255,934	254,458	-36,761
001-000-000-341-81-00-02	Duplication Services	532	500	232	46.4%	464	400	-100
001-000-000-341-81-00-03	Publication Services	7,800	0	10,200	N/B	10,200	7,800	7,800
001-000-000-341-82-00-01	Engineering Fees	61,174	0	0	N/B	0	0	0
001-000-000-342-10-00-00	Law Enforcement Services	425	0	0	N/B	0	0	0
001-000-000-345-81-00-01	Zoning & Subdivision Fees & Services	0	500	0	0.0%	0	0	-500
001-000-000-345-81-00-05	Final Short Plat	3,560	3,500	2,870	82.0%	3,000	3,000	-500
001-000-000-345-81-00-06	Preliminary Short Plat	8,950	10,000	5,490	54.9%	5,500	5,500	-4,500

2018 Preliminary Budget

Fiscal: 2017 - October 31, 2017 Preliminary Budget, Revenue & Capital

Account Number	Description	Actual 2016	Budget 2017	Actual 2017	% Actual of Budget YTD	Year End Forecast	Budget 2018	2018 Increase
001-000-000-345-81-00-07	Clearing and Grading	2,670	4,000	3,192	79.8%	3,200	3,000	-1,000
001-000-000-345-81-00-08	Preliminary Subdivision	44,030	35,000	21,640	61.8%	25,000	17,000	-18,000
001-000-000-345-81-00-09	Boundary Line Adjustment	3,330	5,000	8,415	168.3%	8,415	5,000	0
001-000-000-345-81-00-10	Final Subdivision	6,090	5,000	2,350	47.0%	4,700	4,700	-300
001-000-000-345-81-00-11	Binding Site Plan - Admin.	0	0	1,435	N/B	1,435	1,400	1,400
001-000-000-345-83-00-01	Plan Review & Inspection Fees & Services	243,600	240,000	310,058	129.2%	350,000	350,000	110,000
001-000-000-345-83-00-02	Planning Review Fee	0	0	6,957	N/B	6,957	6,900	6,900
001-000-000-345-83-00-03	Inspection Fee	462	0	640	N/B	640	500	500
001-000-000-345-83-00-04	Stormwater Inspection	8,872	0	15,131	N/B	15,000	15,000	15,000
001-000-000-345-83-00-05	Energy Code Review	18,076	15,000	18,312	122.1%	20,000	20,000	5,000
001-000-000-345-85-00-01	TIF Administrative Fees	19,396	20,000	24,731	123.7%	25,000	25,000	5,000
001-000-000-345-89-00-01	Other/Environmental Review Fees & Services	78,340	0	43,945	N/B	50,000	50,000	50,000
001-000-000-345-89-00-02	SW Engineering Review	22,794	20,000	9,405	47.0%	18,810	16,000	-4,000
001-000-000-345-89-00-04	SEPA - Major	29,160	28,000	44,578	159.2%	45,000	45,000	17,000
001-000-000-345-89-00-07	Posting Sign Fee	900	1,000	780	78.0%	1,560	1,000	0
001-000-000-345-89-00-10	Design Standards Review	8,960	15,000	35,875	239.2%	35,875	40,000	25,000
001-000-000-345-89-00-13	Pre-Dev. Conference	16,780	20,000	13,800	69.0%	27,600	13,000	-7,000
001-000-000-345-89-00-15	Right of Way	350	0	250	N/B	0	0	0
001-000-000-345-89-00-17	Driveway Access Review Fee	1,500	2,000	3,875	193.8%	4,000	4,000	2,000
001-000-000-345-89-00-18	Site Development	38,590	30,000	42,330	141.1%	42,330	43,000	13,000
001-000-000-345-89-00-20	Engineering Fee	66,968	0	27,618	N/B	0	30,000	30,000
001-000-000-345-89-00-22	Admin Interpretation/Decision	1,300	0	0	N/B	0	0	0
001-000-000-345-89-00-23	Administrative Variance	1,100	0	0	N/B	0	0	0
001-000-000-345-89-00-24	Building Permit Ext.	0	0	742	N/B	0	0	0
001-000-000-345-89-00-25	Pre-Application - Minor	0	0	0	N/B	0	0	0
001-000-000-345-89-00-26	Billable Staff Time	4,152	0	3,010	N/B	3,010	0	0
001-000-000-345-89-00-28	Subdivision Community Meeting	1,460	0	640	N/B	640	0	0
001-000-000-345-89-00-29	Administrative Decision Appeal	0	0	0	N/B	0	0	0
001-000-000-345-89-00-31	Critical Areas Checklist	540	0	540	N/B	540	0	0
001-000-000-345-89-00-32	Developer Agreement	7,140	0	0	N/B	0	0	0
001-000-000-345-89-00-34	Site Plan Review	170	0	0	N/B	0	0	0
001-000-000-345-89-00-35	Critical Areas Review	0	0	45	N/B	45	45	45
001-000-000-347-30-00-01	Edgemont Park Facility Fee	2,150	2,150	2,220	103.3%	2,300	2,400	250
	001-000-000-34 Total	711,320	456,650	661,306	144.8%	711,221	709,645	252,995
001-000-000-356-50-00-01	Restitution - Investigative Fund Assess	8	0	103	N/B	103	0	0
	001-000-000-35 Total	8	0	103	N/B	103	0	0
001-000-000-361-11-00-02	Investment Pool Interest	5,892	5,000	4,087	81.7%	5,449	6,500	1,500
001-000-000-361-11-00-03	Interest on Property Tax	0	0	0	N/B	0	0	0

2018 Preliminary Budget

Fiscal: 2017 - October 31, 2017 Preliminary Budget, Revenue & Capital

Account Number	Description	Actual 2016	Budget 2017	Actual 2017	% Actual of Budget YTD	Year End Forecast	Budget 2018	2018 Increase
001-000-000-361-11-00-40	Interest Income - Bonds	0	0	0	N/B	0	0	0
001-000-000-361-40-00-01	Other Interest	588	500	549	109.7%	731	750	250
001-000-000-361-40-00-02	Interest on Interfund Loan	33	0	780	N/B	780	0	0
001-000-000-362-40-00-01	Facilities Rental - Mtg Rm & Com Rm Rental	0	0	0	N/B	0	0	0
001-000-000-362-50-00-01	Facilities Rental - Long Term	0	0	0	N/B	0	0	0
001-000-000-367-11-00-02	Park Contributions	0	0	0	N/B	0	0	0
001-000-000-369-10-00-01	Sale of Surplus Property	0	0	75	N/B	75	0	0
001-000-000-369-40-00-01	Judgements and Settlements	0	0	0	N/B	0	0	0
001-000-000-369-40-00-02	Reimbursement of City Expenses	10,056	0	27,359	N/B	27,359	3,800	3,800
001-000-000-369-81-00-01	Cashier Over/Short	0	0	0	N/B	0	0	0
001-000-000-369-90-00-01	NSF Returned Check Fee	0	0	40	N/B	160	40	40
001-000-000-369-90-00-02	Misc. General Fund Revenue	0	0	182	N/B	182	182	182
	001-000-000-36 Total	16,585	5,500	33,071	601.3%	34,942	11,272	5,772
001-000-000-397-00-00-01	Opr. Tfr. In - Overhead Cost Recovery	0	0	0	N/B	0	0	0
001-000-000-397-00-00-03	Oper. Trn. - TMIF Fund	0	0	0	N/B	0	0	0
	001-000-000-39 Total	0	0	0	N/B	0	0	0
001-081-000-381-20-00-01	Loan Repayment Received	0	400,000	400,000	100.0%	400,000	0	-400,000
	001-081-000-38 Total	0	0	0	N/B	0	0	0
001-086-000-386-10-00-01	Assignment of Funds	3,512	0	0	N/B	0	0	0
001-086-000-386-10-00-03	Bldg Rental Deposit	0	0	0	N/B	0	0	0
001-086-000-386-10-00-04	State Building Code Fee	760	0	0	N/B	0	0	0
001-086-000-386-10-00-05	Animal Licenses	2,325	0	0	N/B	0	0	0
001-086-000-386-10-00-06	Fire Plan Review	13,537	0	0	N/B	0	0	0
001-086-000-386-10-00-07	City Hall Tenant Excise Tax	0	0	0	N/B	0	0	0
	001-086-000-38 Total	20,134	400,000	400,000	100.0%	400,000	0	-400,000
	Fund Total	4,280,953	4,030,292	3,448,254	85.6%	4,480,529	4,596,422	566,130
005-000-000-361-11-00-02	Investment Pool Interest	660	500	549	109.7%	1,097	221	-279
005-000-000-361-11-00-40	Interest Income - Bonds	818	1,500	0	0.0%	0	7,500	6,000
005-000-000-361-40-00-02	Interest Intefund Loan	0	0	0	N/B	0	0	0
	005-000-000-36 Total	1,477	2,000	549	27.4%	1,097	7,721	5,721
005-000-000-381-20-00-01	Interfund Loan Payment	0	0	0	N/B	0	0	0
	005-000-000-38 Total	0	0	0	N/B	0	0	0
005-000-000-397-00-00-02	Transfer In - General Fund	0	0	0	N/B	0	0	0
	005-000-000-39 Total	0	0	0	N/B	0	0	0
	Fund Total	1,477	2,000	549	27.4%	1,097	7,721	5,721
101-000-000-317-60-00-01	Received from ETB - Veh License Fees	271,348	146,000	149,292	102.3%	162,000	190,000	44,000
	101-000-000-31 Total	271,348	146,000	149,292	102.3%	162,000	190,000	44,000
101-000-000-336-00-71-01	Multimodal Transpo City	9,838	0	3,258	N/B	0	14,692	14,692

2018 Preliminary Budget

Fiscal: 2017 - October 31, 2017 Preliminary Budget, Revenue & Capital

Account Number	Description	Actual 2016	Budget 2017	Actual 2017	% Actual of Budget YTD	Year End Forecast	Budget 2018	2018 Increase
101-000-000-336-00-87-01	MV Fuel Tax-City Streets	207,559	217,000	155,000	71.4%	217,000	226,323	9,323
	101-000-000-33 Total	217,397	217,000	158,258	72.9%	217,000	241,015	24,015
101-000-000-344-10-00-01	Road/Street Services (TBD Work)	0	0	0	N/B	0		0
101-000-000-344-10-00-02	Traffic Eng. Peer Review	36,952	0	10,426	N/B	10,426		0
	101-000-000-34 Total	36,952	0	10,426	N/B	10,426	0	0
101-000-000-361-11-00-02	Investment Pool Interest	121	26	167	631.9%	180	195	169
101-000-000-369-10-00-01	Sales of Scrap/Junk	0	0	0	N/B	0	0	0
	101-000-000-36 Total	121	26	167	631.9%	180	195	169
101-000-000-397-00-00-02	Oper. Trn. - General Fund	0	0	0	N/B	0	0	0
101-000-000-397-00-00-04	Oper. Trn. - MCR-REET2	220,000	220,000	220,000	100.0%	220,000	250,000	30,000
101-000-000-397-00-00-05	Oper. Trn. - Surface Water	0	0	0	N/B	0	0	0
	101-000-000-39 Total	220,000	220,000	220,000	100.0%	220,000	250,000	30,000
	Fund Total	745,819	583,026	538,143	92.3%	609,606	681,210	98,184
110-000-000-345-85-00-01	Park Impact Fee	378,330	200,000	372,944	186.5%	440,000		
	110-000-000-34 Total	378,330	200,000	253,166	126.6%	440,000		
110-000-000-361-11-00-02	Investment Pool Interest	201	46	167	366.4%	335		
	110-000-000-36 Total	201	46	167	366.4%	335		
	Fund Total	378,531	200,046	253,333	126.6%	440,335		
111-000-000-345-85-00-01	Traffic Mitigation Impact Fees	387,928	269,279	492,121	182.8%	550,000		
111-000-000-345-89-00-01	Admin Fee - TMIF	0	0	0	N/B	0		
	111-000-000-34 Total	387,928	269,279	492,121	182.8%	550,000		
111-000-000-361-11-00-02	Investment Pool Interest	0	8	0	0.0%	0		
	111-000-000-36 Total	0	8	0	0.0%	0		
	Fund Total	387,928	269,287	492,121	182.7%	550,000		
130-000-000-318-34-00-01	Real Estate Excise Tax (REET1)	244,331	250,000	142,875	57.1%	285,750		
	130-000-000-31 Total	244,331	250,000	142,875	57.1%	285,750		
130-000-000-361-11-00-02	Investment Pool Interest	33	7	27	367.5%	54		
	130-000-000-36 Total	33	7	27	367.5%	54		
	Fund Total	244,364	250,007	142,902	57.2%	285,804		
132-000-000-318-34-00-01	Real Estate Excise Tax (REET 2)	244,226	250,000	142,875	57.1%	285,750		
	132-000-000-31 Total	244,226	250,000	142,875	57.1%	285,750		
132-000-000-361-11-00-02	Investment Pool Interest	106	24	88	366.0%	176		
	132-000-000-36 Total	106	24	88	366.0%	176		
	Fund Total	244,332	250,024	142,963	57.2%	285,925		
201-000-000-397-00-00-01	Oper. Trn. - General Fund	136,063	186,063	175,340	94.2%	175,340		
201-000-000-397-00-00-03	Transfer In - Sewer	123	123	123	100.0%	123		
201-000-000-397-00-00-04	Transfer In - Surface Water	12,044	12,044	12,044	100.0%	12,044		

2018 Preliminary Budget

Fiscal: 2017 - October 31, 2017 Preliminary Budget, Revenue & Capital

Account Number	Description	Actual 2016	Budget 2017	Actual 2017	% Actual of Budget YTD	Year End Forecast	Budget 2018	2018 Increase
201-000-000-397-00-00-07	Oper. Trn. - MCR-REET1	253,690	203,690	203,690	100.0%	203,690		
	201-000-000-39 Total	401,920	401,920	391,197	97.3%	391,197		
	Fund Total	401,920	401,920	391,197	97.3%	391,197		
310-000-000-361-11-00-02	Investment Pool Interest	152	27	127	471.3%	254		
	310-000-000-36 Total	152	27	127	471.3%	254		
310-000-000-397-00-00-04	Oper. Trn. - PIF	0	100,000	100,000	100.0%	100,000		
310-000-000-397-00-00-09	Oper. Trn. - SWM	10,000	10,000	10,000	100.0%	10,000		
	310-000-000-39 Total	10,152	110,027	110,127	100.1%	110,000		
	Fund Total	10,152	110,027	110,127	100.1%	110,000		
340-000-000-333-20-20-01	STP-CMAQ Funding	0	0	0	N/B	0		
340-000-000-333-20-20-05	STPUL HLP 3290(010) Jovita Seismic Walls Grant	45,544	0	0	N/B	0		
340-000-000-334-03-60-01	State Grant - WSDOT	569,493	0	415,857	N/B	415,857		
	340-000-000-33 Total	615,037	0	415,857	N/B	415,857		
340-000-000-381-10-00-01	Interfund Loan Received	400,000	0	0	N/B	0		
	340-000-000-38 Total	400,000	0	0	N/B	0		
	Fund Total	1,015,037	0	415,857	N/B	415,857		
341-000-000-397-00-00-01	Transfer In - REET2	0	0	0	N/B	0		
341-000-000-397-00-00-02	Transfer In - TMIF Fund	0	0	0	N/B	0		
341-000-000-397-00-00-03	Transfer In - SW Fund	0	0	0	N/B	0		
	341-000-000-39 Total	0	0	0	N/B	0		
	Fund Total	0	0	0	N/B	0		
350-000-000-334-03-60-05	TIB Grant - Jovita Realignment	0	0	0	N/B	0		
	350-000-000-33 Total	0	0	0	N/B	0		
	Fund Total	0	0	0	N/B	0		
401-000-000-343-50-00-01	Sewer Revenue	13,324	15,000	14,382	95.9%	28,764	35,000	
	401-000-000-34 Total	13,324	15,000	14,382	95.9%	28,764	35,000	
	Fund Total	45,781	15,000	46,885	312.6%	28,764	35,000	
410-000-000-333-20-20-02	STP(U) Grant - Jovita Rehab-Seismic Walls	0	0	0	N/B	11,000		
410-000-000-334-03-11-01	Dept of Ecology Grant Revenue	0	0	25,000	N/B	25,000	25,000	
	410-000-000-33 Total	0	0	25,000	N/B	25,000		
410-000-000-343-10-00-01	Surface Water Fees	653,298	661,550	370,294	56.0%	701,243	865,000	
410-000-000-343-83-00-01	Storm Drainage Fees & Charges	5,076	0	0	N/B	0		
410-000-000-345-89-00-01	SW Plan Reviews	0	0	11,260	N/B	22,520		
410-000-000-345-89-00-02	Inspections	0	0	0	N/B	0		
	410-000-000-34 Total	658,374	661,550	381,554	57.7%	784,763	890,000	
410-000-000-361-11-00-02	Investment Pool Interest	710	161	591	366.4%	1,182	2,000	
410-000-000-361-11-00-40	Interest Earnings - Bond	0	1,175	0	0.0%	0		

2018 Preliminary Budget

Fiscal: 2017 - October 31, 2017 Preliminary Budget, Revenue & Capital

Account Number	Description	Actual 2016	Budget 2017	Actual 2017	% Actual of Budget YTD	Year End Forecast	Budget 2018	2018 Increase
	410-000-000-36 Total	710	1,337	591	44.2%	1,182	2,000	
	Fund Total	659,085	662,887	407,145	61.4%	810,945	892,000	
411-000-000-359-00-00-02	LID No. 1 Penalties Received	50,489	79,936	6,806	8.5%	13,612		
	411-000-000-35 Total	50,489	79,936	6,806	8.5%	13,612		
411-000-000-361-11-00-02	Investment Pool Interest	5,036	1,144	4,190	366.4%	7,187		
411-000-000-361-40-00-01	LID No. 1 Interest Received	609,933	610,341	75,229	12.3%	610,341		
411-000-000-368-10-00-01	LID #1 Principal Received	1,366,331	758,515	1,314,766	173.3%	2,315,076		
	411-000-000-36 Total	1,981,300	1,370,000	1,394,185	101.8%	2,932,605		
	Fund Total	2,031,788	1,449,936	1,400,991	96.6%	2,946,216		
412-000-000-397-00-00-01	Transfer In - Temp. LID Fund	118,116	118,116	118,116	100.0%	118,116		
	412-000-000-39 Total	118,116	118,116	118,116	100.0%	118,116		
	Fund Total	118,116	118,116	118,116	100.0%	118,116		
501-000-000-361-11-00-02	Investment Pool Interest	286	65	238	366.4%	476	500	
501-000-000-362-00-00-01	Comcast PEG Fees	0	0	14,983	N/B	20,763	30,000	
	501-000-000-36 Total	286	65	15,220	23455.6%	21,239	30,500	
501-000-000-397-00-00-01	Oper. Trn. - In	4,000	0	0	N/B	0		
	501-000-000-39 Total	4,000	0	0	N/B	0		
	Fund Total	4,286	65	15,220	23455.6%	21,239	30,500	
630-000-000-317-60-00-01	Transportation Benefit Dist Vehicle Fee	162,083	146,000	0	0.0%	0		
	630-000-000-31 Total	162,083	146,000	0	0.0%	0		
	Fund Total	273,848	146,000	0	0.0%	0		
	Grand Total	10,843,416	8,488,633	7,923,804	93.3%	11,495,631		

CITY OF EDGEWOOD

STAFF REPORT

STUDY SESSION AGENDA ITEM: Critical Areas Ordinance Code Revisions

Date: November 7, 2017

Title: Critical Areas Ordinance Code Revisions

Attachments: CAO Draft Code_ Final Comments - 11-07-17

Submitted By: Darren Groth, Community Development Director

Approved For Agenda By: Daryl Eiding, 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. The purpose of today's discussion is to finalize a draft for the upcoming City Council Public Hearing. Several comments that remain outstanding pertain to the structure outline of the CAO. The numbering and cross references will be incorporated into the final ordinance; however, those comments are included in the attached draft for reference.

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 Definitions**
- 14.20 Use and Activity Regulations**
- 14.30 Wetlands**
- 14.40 Critical Fish and Wildlife Habitat Areas**
- 14.50 Aquifer Recharge and Wellhead Protection Areas**
- 14.60 Volcanic Hazard Areas**
- 14.70 Flood Hazard Areas**
- 14.80 Landslide Hazard Areas**
- 14.90 Seismic (Earthquake) Hazard Areas**
- 14.110 ~~Erosion Hazard Areas~~**
- 14.500 ~~Natural Resource Lands~~**

Chapter 14.10
GENERAL PROVISIONS

Sections:

- 14.10.010 Authority.
- 14.10.030 Purpose.
- 14.10.040 Interpretation.
- 14.10.050 Applicability.
- 14.10.070 Administration.
- 14.10.075 Relationship to Other Regulations.
- 14.10.080 Critical area protective measures.
- 14.10.082 Critical areas reports
- 14.10.083 Mitigation plans
- 14.10.085 Variances to critical areas.
- 14.10.090 Reconsideration and appeal procedures.
- 14.10.100 Fees.
- 14.10.110 Compliance.
- 14.10.120 Warning and disclaimer of liability.
- 14.10.130 Severability.
- 14.10.135 Violation – Civil infraction.
- 14.10.140 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.

14.10.030 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;

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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.

14.10.040 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).

14.10.050 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.

14.10.070 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 18.40.090.

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.

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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

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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).

14.10.075 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).

14.10.080 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.

14.120.082 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.

14.120.083 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 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.

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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 ~~ra~~ reasonable use exception pursuant to EMC 14.20.050. (Ord. 17-492 § 2 (Exh. A); Ord. 02-200 § 2).

14.10.090 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-~~.

14.10.100 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.

14.10.110 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).

14.10.120 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.

14.10.140 Appendix.

A. Title and Plat Notification Forms.

APPENDIX A

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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.

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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 14.15

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, revegetation, 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 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 14.20

USE AND ACTIVITY REGULATIONS

Sections:

- 14.20.010 Permitted uses.
- 14.20.020 Regulated uses and activities.
- 14.20.030 Exemptions.
- 14.20.040 Nonconforming uses and structures.
- 14.20.050 Reasonable use exceptions.
- 14.20.060 Current use assessment program.

14.20.010 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).

14.20.020 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.

14.20.030 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).

14.20.040 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:

Commented [cm1]: So this activity requires approval of the exemption?

Commented [AN2]: No, approval of the utility installation.

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).

14.20.050 Reasonable use exceptions.

A. General Requirements.

1. 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 the~~ ~~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~~ ~~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;

Commented [cm3]: I don't agree with this language. Why wouldn't an applicant submit an application and ask for the exception that he or she wants? Why would it automatically be a variance to these particular requirements?

Also, what does this language mean -- does it require that the decisionmaker review the request under the criteria for variances? This makes no sense, as the person would have to first apply for a variance and be denied in order to apply for a reasonable use exception.

Commented [AN4]: It does because the Variance criteria is often stiffer than what would be required for a reasonable use. Folks would want to bypass the Variance process in order to get what they want through the reasonable use exception.

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 — permit and shall be processed according to the procedures in chapter 18.40.100 — EMC.

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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~~The decisionmaker may approve a reasonable use exception if ~~the decisionmaker~~the decisionmaker determines that the applicant has ~~demonstrated~~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

4. 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).

14.20.060 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).

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Chapter 14.30

WETLANDS

Sections:

- 14.30.010 Purpose.
- 14.30.020 Wetland identification, delineation, and rating.
- 14.30.025 Buffer standards—Wetlands
- 14.30.030 Wetland review procedures.
- 14.30.040 Allowed activities.
- 14.30.060 Mitigation requirements.
- 14.30.070 Appendices.

14.30.010 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).

14.30.020 Wetland identification, delineation, and rating.

A. Designation. All areas within the city 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.”.

14.30.025 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 14.20.050(1).

Table 14.30.025(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 14.20.050(2).

Table 14.30.025(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).

14.30.030 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 14.30.070, 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.

14.30.040 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.

14.30.060 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.

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 14.30.060 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 14.30.060
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 14.30.070, Appendix B.

14.30.070 Appendices.

A. Wetland Report.

B. Wetland Mitigation Plan

APPENDIX A

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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:
 - 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 14.30.070, Appendix B, if the activity will result in unavoidable impacts to wetlands or their buffers.

APPENDIX B

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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;

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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).

Chapter 14.40

FISH AND WILDLIFE HABITAT CONSERVATION AREAS

Sections:

14.40.010	Purpose.
14.40.020	Fish and wildlife habitat conservation area identification and classification.
14.40.025	Buffer standards—Fish and wildlife habitat conservation areas.
14.40.030	Fish and wildlife habitat conservation area review procedures.
14.40.040	Allowed activities.
14.40.050	Alteration of Watercourses
14.40.060	Mitigation requirements.
14.40.070	Appendix

14.40.010 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).

14.40.020 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.

14.40.025 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 14.40.025 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 14.40.025 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 14.40.025
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

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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

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

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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 ~~AdHoc~~Adhoc 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

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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

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

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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.
- 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~~ 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.

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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

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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.

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- 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.

- 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

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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

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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 photographic 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

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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

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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

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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

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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 _____

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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

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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)

I

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 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).

CITY OF EDGEWOOD

STAFF REPORT

STUDY SESSION AGENDA ITEM: Planning Commission Work & Land Use Policy

Date: November 7, 2017

Title: Planning Commission Work and Land Use Policy

Attachments: None

Submitted By: Darren Groth, Community Development Director

Approved For Agenda By: Daryl Eiding, Mayor

Discussion

The Planning Commission (PC) serves as the principal advisory body to the City Council with responsibility for providing guidance and direction for land use policy.

Duties of the PC include:

1. Providing recommendations to the city council for development and review of the comprehensive plan in compliance with Chapter 36.70A RCW. This includes establishing procedures providing for early and continuous public participation in the development and amendment of the comprehensive land use plan and development regulations implementing the plan.
2. Periodically reviewing and recommending amendments to the zoning map and table of permitted uses.
3. Periodically reviewing and recommending amendments to the development regulations.
4. Other duties as assigned by the council relating to subjects referred to in Chapter 35A.63 RCW

To fulfill its obligation to the Council, Edgewood Municipal Code (EMC) establishes organization criteria for the PC. In accordance with EMC Section 2.30.040, the PC shall meet with the Council to discuss the PC's work and land use policy in general at least once each year.

Recommendation: Plan an itinerary and schedule a joint meeting between the City Council and Planning Commission.

Fiscal Impact: None

CITY OF EDGEWOOD

STAFF REPORT

STUDY SESSION AGENDA ITEM: Caldwell Crest Final Plat

Date: November 7, 2017

Title: Caldwell Crest Final Plat

Attachments: Caldwell Crest Plan Set Cover Sheet Drawing

Submitted By: Darren Groth, Community Development Director

Approved For Agenda by: Daryl Eiding, Mayor

Discussion

Applicant requests Final Plat approval of the Caldwell Crest subdivision located at 4112 Caldwell Road East. The plat creates 15 single family residential lots in addition to various tracts necessary for the installation of infrastructure, which includes a gated private roadway, extension of utilities and water lines, construction of an on-site community septic system, and on-site stormwater treatment facilities. On May 16, 2016, the City issued a SEPA Mitigated Determination of Non-Significance (MDNS) and issued a SEPA MDNS minor amendment on July 12, 2016. On July 15, 2016, the Caldwell Crest Preliminary Plat was approved, subject to conditions.

The final plat application was submitted in November 2016 and once the application was deemed complete, staff began the technical review. The technical review is used to assess whether the application complies with all preliminary plat conditions, SEPA mitigation requirements, and applicable Edgewood Municipal Code (EMC) and Washington State statutory requirements for Final Plat approval. As of November 2, 2017, the applicant has demonstrated that most of the requirements for final plat approval have been met. This includes showing that site development and infrastructure improvements are substantially complete or have been bonded for completion within one (1) year. The applicant is obligated to submit any outstanding items by noon on November 7, 2017.

Staff believes materials received to date are sufficient to convene this study session. Complete application materials are available upon request. If the applicant does not submit the remaining outstanding items by the deadline, consideration for final plat approval will not be placed on the November 14 Council Agenda.

Recommendation: Forward the Final Plat for action during a Regular Council Meeting.

Fiscal Impact: N/A

CALDWELL CREST
NE 1/4, SW 1/4, SEC.14, TWN.20 N., RNG. 4 E., W.M.

LEGAL DESCRIPTION

LOT 2, CITY OF EDGEWOOD SHORT PLAT L98-030, AS PER PLAT
RECORDED UNDER PIERCE COUNTY RECORDING NO. 9908025005,
RECORDS OF PIERCE COUNTY AUDITOR;

SITUATE IN THE COUNTY OF PIERCE, STATE OF WASHINGTON.

SITE ADDRESS

4112 CALDWELL ROAD E.

PARCEL NUMBER

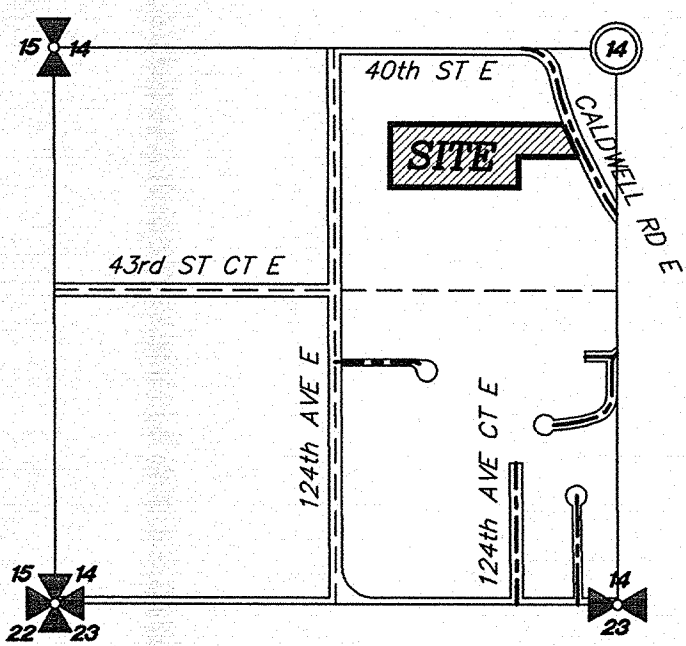
0420147039

LEGAL DESCRIPTION

LOT 2, CITY OF EDGEWOOD SHORT PLAT L98-030, AS PER PLAT
RECORDED UNDER PIERCE COUNTY RECORDING NO. 9908025005,
RECORDS OF PIERCE COUNTY AUDITOR;

SITUATE IN THE COUNTY OF PIERCE, STATE OF WASHINGTON.

VICINITY MAP



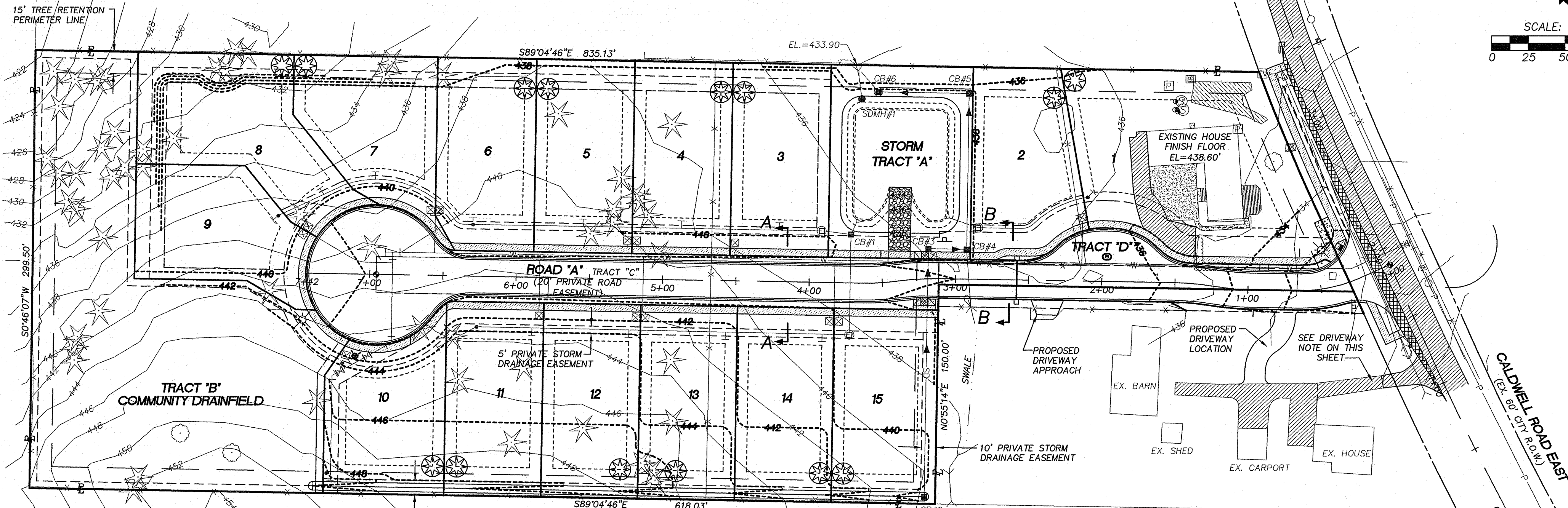
SCALE 1"=1,000'

SITE DATA

ACREAGE: 5.11
ZONING: SF-3
PROPOSED USE: SINGLE-FAMILY RESIDENTIAL
MIN. LOT SIZE: 8,750 SQ. FT.
AVG. LOT SIZE: 9,490 SQ. FT.
DENSITY: 2.94 UNITS / ACRE
NO. OF LOTS: 15
WATER: MT-VIEW - EDGEWOOD WATER COMPANY
SCHOOLS: PUYALLUP SCHOOL DISTRICT
POWER: PUGET SOUND ENERGY, INC.
TELEPHONE: CENTURYLINK COMMUNICATIONS
FIRE DISTRICT: EAST PIERCE FIRE & RESCUE
SEWER: COMMUNITY ON-SITE SEPTIC DRAINFIELD
TRACT "A": STORM DRAINAGE TRACT
TRACT "B": COMMUNITY DRAINFIELD TRACT
TRACT "C": PRIVATE ROAD & UTILITIES TRACT - 13,899.33 SF
TRACT "D": PRIVATE EVA, BUFFER, SIDEWALK & UTILITY TRACT - 11,553.84 SF

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R1 5 OF 15 PLAN & PROFILE
INT1 6 OF 15 INTERSECTION DETAILS
PRO1 7 OF 15 STORM BYPASS & PROFILE
PND1 8 OF 15 STORM POND - PLAN & SECTIONS
PND2 9 OF 15 STORMWATER - DETAILS
RS1 10 OF 15 STORMWATER - DETAILS & SPECIFICATIONS
RS2 11 OF 15 ROAD & STORMWATER - DETAILS
RS3 12 OF 15 ROAD & STORMWATER - DETAILS
H2L 13 OF 15 HORIZONTAL CONTROL
G1 14 OF 15 GATED ENTRANCE PLAN
OF1 15 OF 15 OFF-SITE IMPROVEMENTS - CALDWELL RD.

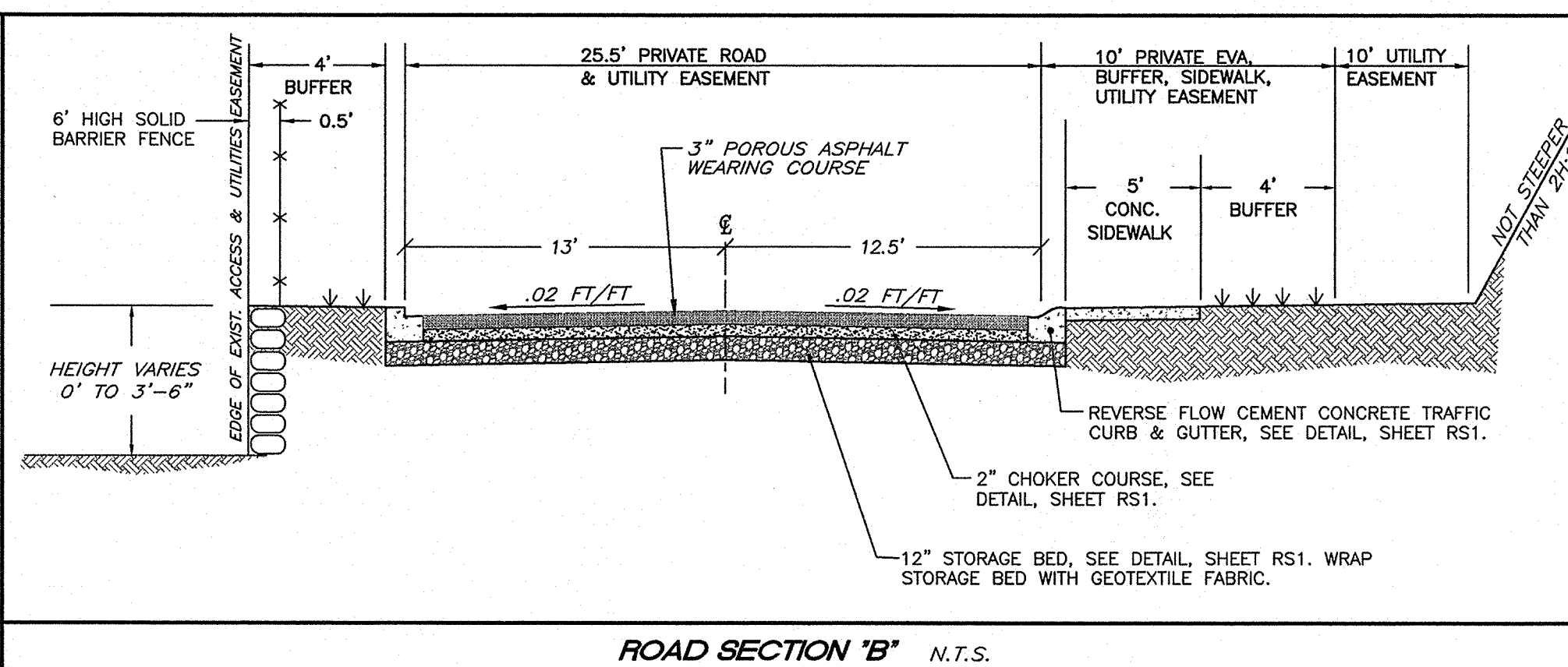
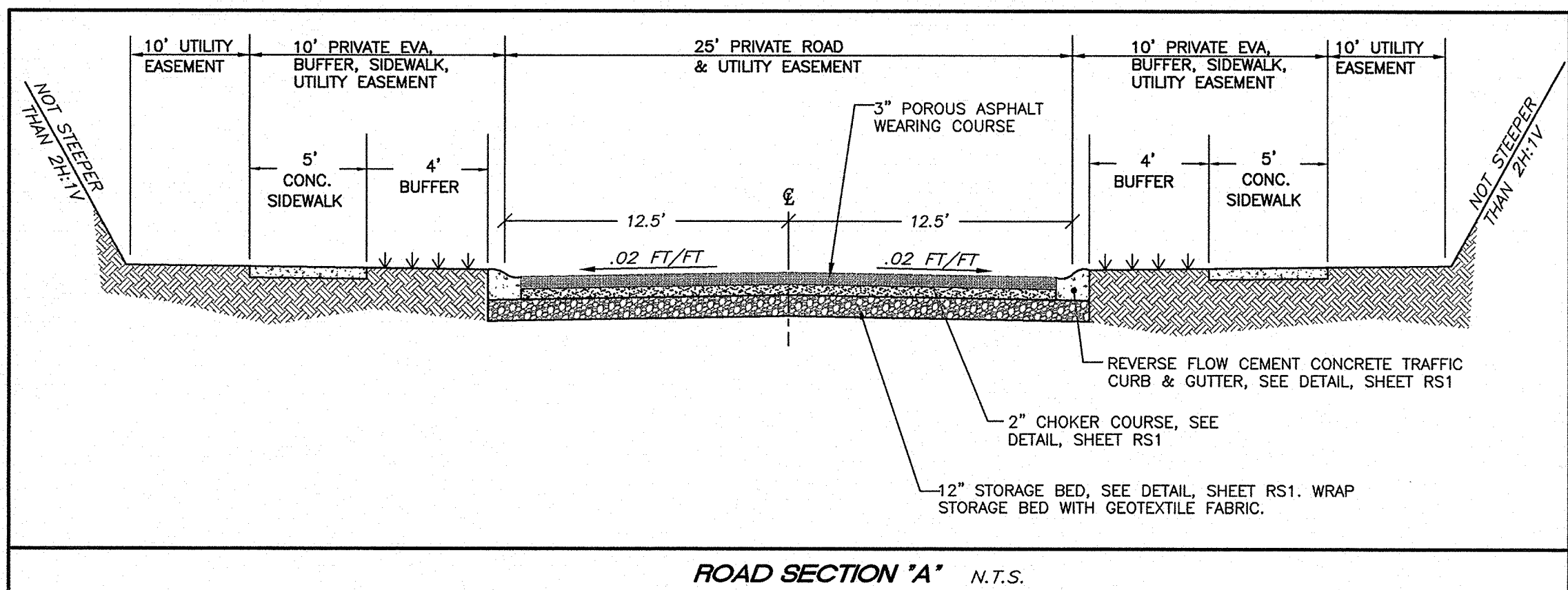


DRIVEWAY NOTE

PURSUANT TO CITY OF EDGEWOOD SHORT PLAT L98-030 (9908025005), THE OWNER DEVELOPER OF LOT 2 SHALL RELOCATE THE DRIVEWAY TO LOT 1 TO ACCESS FROM THE 30 FOOT PRIVATE ROAD AND UTILITIES EASEMENT. THE DRIVEWAY LOCATION FOR LOT 1 SHALL BE PAVED AND THE LOCATION APPROVED BY THE CITY AND OWNER OF LOT 1. THE INDIVIDUAL DRIVEWAY ACCESS TO CALDWELL ROAD EAST FROM LOT 1, SHALL BE REMOVED AND THE DITCH RESTORED TO MATCH CONDITIONS ON EITHER SIDE OF THE EXISTING DRIVEWAY APPROACH.

LEGEND

- P/A PROPERTY LINE
- R/W R/W LINE
- EASEMENT LINE
- ADDITIONAL 10' UTILITIES EASEMENT
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED SEWER MAIN
- PROPOSED SANITARY SEWER STUB
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM CATCH BASIN
- PROPOSED STORM MAIN
- PROPOSED STORM STUB
- PROPOSED ROAD WIDENING
- PROPOSED SIDEWALK
- PROPOSED SHOULDER
- 456--- PROPOSED CONTOUR
- 456--- EXISTING CONTOUR
- EXISTING EDGE OF PAVEMENT
- ⊙ EXISTING STORM MANHOLE
- 12"-0 EXISTING STORM MAIN
- ⊙ EXISTING SANITARY SEWER MANHOLE
- 6"-8 EXISTING SANITARY SEWER MAIN
- EXISTING CATCH BASIN
- ⊙ EXISTING POWER POLE
- ⊙ EXISTING WATER GATE VALVE
- ⊙ EXISTING FIRE HYDRANT
- W-4"-W EXISTING WATER MAIN
- ⊙ EXISTING TELEPHONE RISER
- ⊙ EXISTING POWER J-BOX
- ⊙ EXISTING CABLE J-BOX
- ⊙ EXISTING SIGNIFICANT TREE (DECIDUOUS)
- ⊙ EXISTING SIGNIFICANT TREE (CONIFER)
- ⊙ PROPOSED TREE (CONIFER)
- ⊙ PROPOSED STREET LIGHT



CONTRACTOR / DEVELOPER NOTE:

THE CONTRACTOR AND/OR DEVELOPER SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED MATERIAL TESTING, COMPACTION TESTING, AND APPLICABLE INSPECTIONS AS REQUIRED BY PIERCE COUNTY AND PRIVATE ENGINEER. THE CONTRACTOR SHALL SUPPLY CERTIFYING ENGINEER WITH DOCUMENTATION SIGNED BY A PROFESSIONAL SOILS AND/OR MATERIALS ENGINEER SHOWING THAT THE ROAD SECTION WAS BUILT ACCORDING TO THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT, THE BACKFILL MATERIAL MEETS MINIMUM COUNTY/STATE REQUIREMENTS, COMPACTION WAS ACHIEVED IN ALL TRENCHES AND ROAD SECTION, AND ALL CONSTRUCTION MATERIALS AND CONSTRUCTION METHODS SHOWN ON THESE PLANS HAVE BEEN FOLLOWED.

CALL BEFORE YOU DIG

THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

PURSUANT TO RCW 58.24.040 (8) AND WAC 332-120, BEFORE REMOVING OR DESTROYING ANY MONUMENT ON THE BOUNDARY OF ANY EASEMENT, RIGHT OF WAY, LOT, TRACT, OR PARCEL OF REAL PROPERTY; A CONTROLLING POINT FOR A PLAT; OR A POINT WHICH IS A GENERAL LAND OFFICE SURVEY CORNER, THE APPLICATION REQUIRED BY THIS CHAPTER SHALL BE SUBMITTED, SIGNED AND SEALED BY A LAND SURVEYOR OR ENGINEER AS DESIGNED IN THIS CHAPTER.

UTILITY CONFLICT NOTE:

CAUTION:

THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR VERIFYING THE LOCATION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POT-HOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE @ 811 AND THEN POT-HOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATION OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL CONSULT THE PROJECT ENGINEER TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

FOR THE APPLICATION FOR PERMIT TO REMOVE OR DESTROY A SURVEY MONUMENT, CONTACT THE PIERCE COUNTY PUBLIC WORKS AND UTILITIES, TRANSPORTATION SERVICES, SURVEY SECTION AT 253-798-7250 FOR ADDITIONAL INFORMATION.

JOB NUMBER

8529

SCALE 1"=50'
DESIGNED AKC
DRAWN HDC
CHECKED AKC
VERT. N/A

PH: (253)370-7185

PROPOSER:
ASCAPAS INC.
P.O. BOX 44428
TACOMA, WA 98448

LARSON and ASSOCIATES
surveyors, engineers & planners
9027 PACIFIC AVENUE, SUITE 4
TACOMA, WA 98444 (253) 474-5404

COVER SHEET

DATE

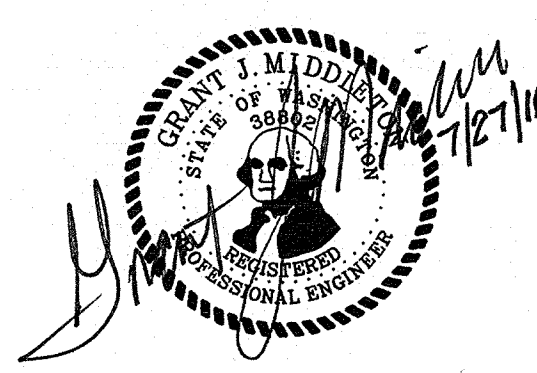
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DRAWING NO.

8529BASE

SHEET 1 OF 18

CVR



**CITY OF EDGEWOOD
STAFF REPORT
STUDY SESSION AGENDA ITEM: 2018-2023 CIP**

Date: November 7, 2017

Title: 2018-2023 Capital Improvement Plan (CIP)

Attachments: Resolution No. 17-0388, Exhibit A 2018-2023 CIP

Submitted By: Asst. City Administrator, Dave Gray

Approved For Agenda By: Daryl Eiding, Mayor

Discussion: This plan has been discussed on several occasions with the City Council including several study sessions and a public hearing that was held at the Council's October 24, 2017 meeting.

Recommendation: Staff recommends that the City Council move forward with this time being brought forward to the next Council meeting for adoption of Resolution No. 17-0388, adopting the City's Capital Improvement Plan (CIP) for the years 2018-2023, as required of City's planning under the States' Growth Management Act.

Alternatives: 1) Do not adopt. 2) Forward to Study Session for further review

Fiscal Impact: As this is a component of the annual budgeting process, the impacts to the City's budget is outlined within the Capital Improvement Plan. Capital Improvement Plans in their nature are planning documents that help express the Council's desires for future capital improvements under the jurisdiction's responsibility to manage. They are not final budgeting documents, as this is reserved for the actual budget that is adopted by the City Council towards the end of the City's fiscal year.

RESOLUTION NO. 17-0388

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, ADOPTING A CAPITAL IMPROVEMENT PLAN (CIP) FOR THE YEARS 2018-2023

WHEREAS, the City of Edgewood is required by the Growth Management Act (GMA) to prepare and adopt a multi-year plan, updated annually, that contains the City's future Capital Improvement Projects and the recommended methods of funding those projects; and

WHEREAS, the City's Capital Improvement Plan has been updated to address the current capital project needs and priorities of the City for the years 2018-2023; and

WHEREAS, a public hearing was held on October 24, 2017 on the proposed Capital Improvement Plan (CIP);

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, HEREBY RESOLVES AS FOLLOWS:

Section 1. The City Council does hereby approve the 2018-2023 Capital Improvement Plan (CIP), a copy of which is attached as Exhibit "A" and incorporated herein by reference.

Section 2. Effective Date. This resolution will take effect immediately upon passage by the City Council.

ADOPTED this XX day of October, 2017

Daryl Eiding, Mayor

ATTEST:

Rachel Pitzel, City Clerk

Exhibit A
Capital Improvement Plan 2018-2023



City of Edgewood

DRAFT CAPITAL IMPROVEMENT PLAN

2018- 2023

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Introduction

Capital Improvement Plan Overview

The City of Edgewood's six-year Capital Improvement Plan (CIP) is a long-range plan for addressing capital needs and satisfying the statutory requirements of the Growth Management Act (GMA). The purposes and goals of the CIP are to:

- Provide capital facilities and infrastructure that are needed by the community and support the vision of Edgewood's future, as articulated in the City's Comprehensive Plan;
- Support the provision of City services consistent with the expectations of the community, as expressed in the City's declared level-of-service standards;
- Preserve level-of-service as growth and development add new demands on City government;
- Supply facilities that meet the needs of the community; and
- Rehabilitate or replace the City's facilities and infrastructure to extend the useful life and assure continued efficiency.

The GMA also requires jurisdictions to have capital facilities in place and readily available when new development occurs or a service area population grows. This concept is known as *concurrency*. Specifically, this means that:

- All public facilities, needed to serve new development and a growing service area population, must be in place at the time of initial need. If the facilities are not in place, a financial commitment must have been made to provide the facilities within six years of the time of the initial need; and
- Such facilities must be of sufficient capacity to serve the service area population and new development without decreasing service levels below locally established minimum standards, known as level-of-service.

Minimum standards are established at local levels. Factors that influence local standards are citizens, City Council recommendations, national standards, federal and state mandates, and the standards of neighboring jurisdictions.

The GMA stipulates that if a jurisdiction is unable to provide or finance capital facilities in a manner that meets concurrency and level-of-service requirements, it must either: 1) adopt and enforce ordinances which prohibit approval of proposed developments which would cause the level-of-service to drop below locally established standards, or 2) lower established standards for the level-of-service.

The Capital Improvement Plan provides a six-year list of proposed major capital expenditures and associated operating costs for the City. This plan attempts to set funding strategies not only for the current year, but also to project future needs for major construction, land acquisition

and equipment needs that improve the cultural environment, capital infrastructure and recreational opportunities for the citizens of Edgewood. Capital expenditures are viewed not only in the context of how much the new project will cost, but also what impact the project will have on the City's operating budget.

The Capital Improvement Plan is divided into seven sections: 1) Introduction, 2) CIP Summary, 3) Surface Water Capital Projects, 4) Parks Capital Projects, 5) Transportation and Pedestrian Capital Projects, and 6) Wastewater Capital Projects.

Capital Improvement Program Summary

The CIP Summary contains the following:

Program Financial Summary – Financial spreadsheet listing each project within the five capital project areas for the six-year funding period: General Capital Projects, Surface Water Capital Projects, Parks Capital Projects, Transportation Capital Projects, and Sanitary Sewer Capital Projects.

Capital Resources by Category – Graphic of all of the resources available to fund the CIP.

Capital Projects by Category – Graphic of the distribution of the projects by category.

Capital Project Detail

Included for each capital project in the CIP is a capital project detail sheet providing information such as the following:

- Fund – The associated capital fund (Capital - General, Capital - Parks, Capital - Roads, Capital - TIB, Street, Surface Water and Sewer).
- Project Category – The appropriate category for the particular project. These categories are also used in the Program Financial Summary.
- Project Description – A brief description of the project.
- Comprehensive Plan Goal - Identification of the Comp Plan goal affected by the project.
- Service Impact – A brief description of the project's impact on Edgewood citizens or others that use the public facility and any impact to maintenance and operating costs.
- Total Project Budget - All costs associated with the project. This will include prior expenditures, current year estimates and projected costs included in the six-year plan.
- Funding Sources – All of the anticipated revenue sources for the project.
- Critical Milestones – A list of all of the most important project milestones with their expected completion dates.
- Project Budget – Actual expenditures from prior periods and projected future costs by project phase. It also displays the specific revenue sources used to fund the project and any impacts on the General Fund operating budget.

Capital Project Detail

Surface Water

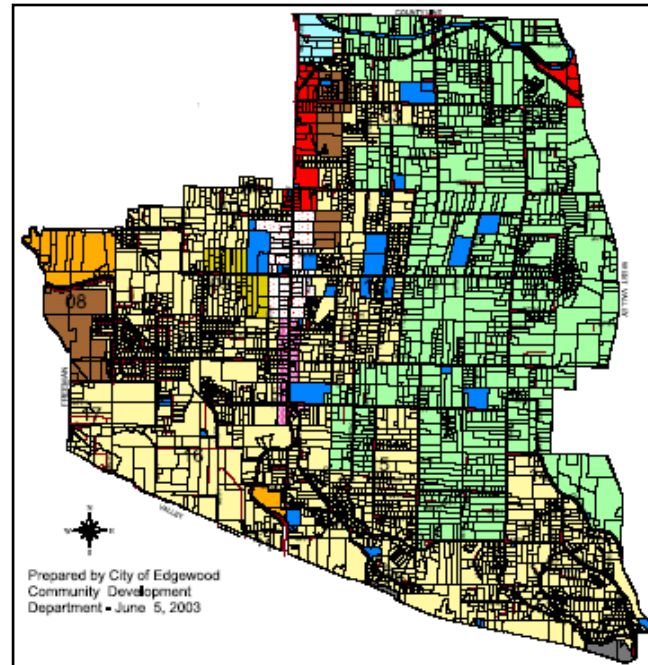
City Drainage Infrastructure Program / Spot Improvements (SW-1)

Fund:

Surface Water Fund

Project Category:

Surface Water



Project Description: New drainage problems are identified annually through routine maintenance inspections and Citizen Action Requests (CAR's). The City Council annually budgets for small improvements to the public stormwater system, as several components of the City's drainage infrastructure are either undersized, failing, and/or missing. This program evaluates and installs culvert piping, catch basins, and ditch improvements, as well as other improvements associated with road projects, replacing up to two miles of existing drainage infrastructure per year. Work will generally include ditch lining, curbing, and catch basin and/or storm pipe replacement.

The tentative plan for 2018 includes:

- West Side of 112th Ave E (south of 24th St E) – Culvert and Ditch Improvements
- South Side of 16th St E (110th to 112th) – Shoulder and Ditch Improvements
- 16th St E at 122nd Ave E – Shoulder and Culvert Improvements
- 94th Ave E (28th St Ct E to 32nd St E, Both Sides) – Shoulder and Ditch Repair

Applicable Comprehensive Plan Goals –

- **NA.I:** Protect and enhance the natural environment for the benefit of current and future generations.
- **NA.II:** Protect and enhance water quality.
- **CF.I:** Provide capital facilities and public services necessary to support existing and new development envisioned in the Land Use Element.
- **CF.V:** Maintain capital facilities so that they are reliable, functional, safe, sanitary, clean, attractive and financially sustainable.

Service Impact: This project will help alleviate localized flooding of private and public properties by making improvements to public storm drainage systems where a small project (i.e. less than \$25,000 per project) can be cost-effective in resolving the problem.

Total 6-Year Project Budget: \$600,000

Funding Source:

- Storm Drainage Fees

Critical Milestones:

- Various projects will be identified, evaluated, prioritized, designed and constructed each year.

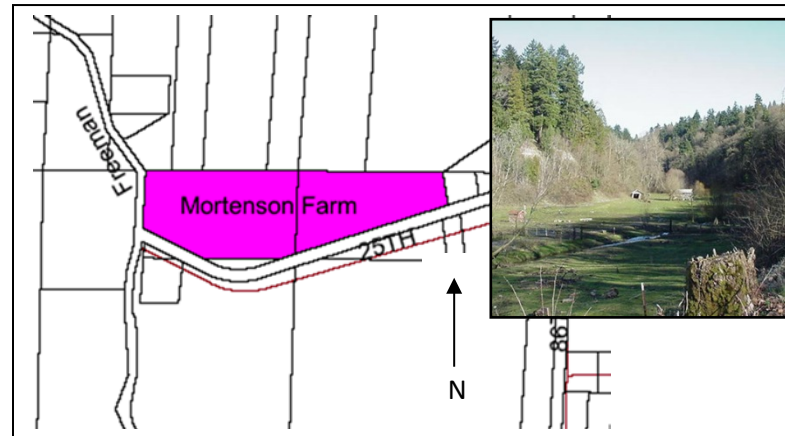
Mortenson Farm Regional Stormwater Improvements (SW-2)

Fund:

Surface Water Fund

Project Category:

Surface Water



Project Description: In 2003, the City purchased the old twelve-acre Mortenson farm with Surface Water Funds as a site for future stormwater quality enhancements and possible park use. Stormwater improvements will be made to enhance the water quality of Surprise Lake Creek before it leaves the City of Edgewood, thereby improving the health of the Hylebos Creek watershed. Restoration of the stream channel will create salmon rearing and spawning habitat, which is in the process of being made accessible by fish thanks to the City of Fife's pending Freeman Road improvements.

In addition, the site will be evaluated for potential as a regional stormwater detention facility, which may require offsite stormwater conveyance design and construction. Also, efforts will be made to decrease base flows leaving the site by expanding and enhancing wetland areas on the site. This restoration may be complemented by a passive trail or boardwalk, if funds allow.

This project may include participation by the City of Milton (due to flows coming from Surprise Lake, within the City of Milton) and the City of Fife (recipient of these flows). The City is also consulting with the Washington State Department of Transportation (WSDOT) regarding the possibility of providing funding as mitigation site for wetland impact due to construction of SR 167 (*construction tentatively begins in 2025*).

Applicable Comprehensive Plan Goals –

- **NA.I:** Protect and enhance the natural environment for the benefit of current and future generations.
- **NA.II:** Protect and enhance water quality.
- **CF.I:** Provide capital facilities and public services necessary to support existing and new development envisioned in the Land Use Element.
- **CF.V:** Maintain capital facilities so that they are reliable, functional, safe, sanitary, clean, attractive and financially sustainable.

Service Impact: Enhancing the natural environment will reduce uncontrolled stormwater runoff and help protect sensitive salmon bearing streams and wetlands.

Total 6-Year Project Budget: \$1,250,000

Funding Sources:

- Storm Drainage Fees
- Grant Revenue
- Inter-Agency Participation

Critical Milestones:

- 2017 – Demolition
- 2021-2022 – Planning / Design
- 2022-2023 – Construction

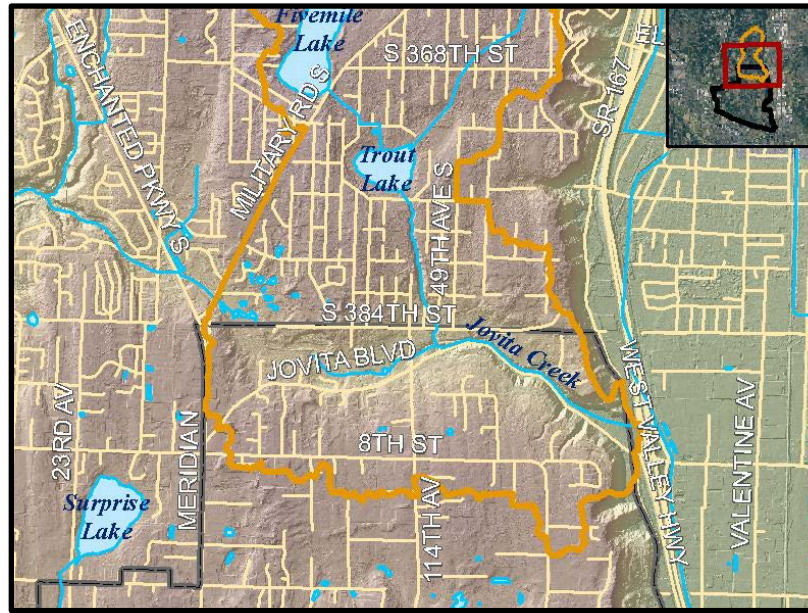
Jovita Creek Regional Improvement Feasibility Study (SW-3)

Fund:

Surface Water Fund

Project Category:

Surface Water



Project Description: As identified in the 1997 Surface Water Management Plan, this project includes preparation of an Engineering Feasibility Study for the design and construction of a regional retention/detention pond to reduce peak flow rates within the Jovita Creek basin. Other elements to be considered in the study include slope stability measures (i.e. piped slope drains) and property / easement acquisition.

The study will address known basin-wide flow control and water quality issues (i.e., TMDL for Fecal Coliform), identify possible location(s) for development of a regional facility, costs of property acquisition and development, and the environmental impacts associated with its construction.

Implementation of a regional facility may require the cooperation of multiple local agencies, including the City of Pacific and King County. Piped slope drains can be implemented completely within the City of Edgewood.

Applicable Comprehensive Plan Goals –

- **NA.I:** Protect and enhance the natural environment for the benefit of current and future generations.
- **NA.II:** Protect and enhance water quality.
- **CF.I:** Provide capital facilities and public services necessary to support existing and new development envisioned in the Land Use Element.
- **CF.V:** Maintain capital facilities so that they are reliable, functional, safe, sanitary, clean, attractive and financially sustainable.

Service Impact: Enhancing the natural environment will reduce uncontrolled stormwater runoff.

Total 6-Year Project Budget: \$500,000

Funding Sources:

- Storm Drainage Fees
- Grant Revenue
- Inter-Agency Participation

Critical Milestones:

- 2021-2023—Planning/Design
- 2024—Construction?

108th Ave. E. / 36th St. E. Road Flooding (SW-5)

Fund:

Surface Water Fund

Project Category:

Surface Water



Project Description: This project is located at 108th Ave. E. / 36th St. E. intersection approximately 500 feet in all directions. During heavy rains, this area is prone to flooding where the entire roadway ends up being underwater. Roadway intersection and adjoining streets routinely flood during wet winters resulting in the closure of the roadways for long periods of time. An engineering feasibility study is needed to assess alternatives for raising the intersection and adjoining streets to prevent roadway flooding.

Applicable Comprehensive Plan Goals –

- **NA.I:** Protect and enhance the natural environment for the benefit of current and future generations.
- **NA.II:** Protect and enhance water quality.
- **CF.I:** Provide capital facilities and public services necessary to support existing and new development envisioned in the Land Use Element.
- **CF.V:** Maintain capital facilities so that they are reliable, functional, safe, sanitary, clean, attractive and financially sustainable.

Service Impact: Improvements to this area are necessary to prevent prolonged closure of the roadway during wet winter months. This project will also help to prevent localized flooding.

Total 6-Year Project Budget: \$1,000,000

Funding Sources:

- Storm Drainage Fees
- Grant Revenue

Critical Milestones:

- 2019-2020—Planning/Design
- 2020-2021 – Construction

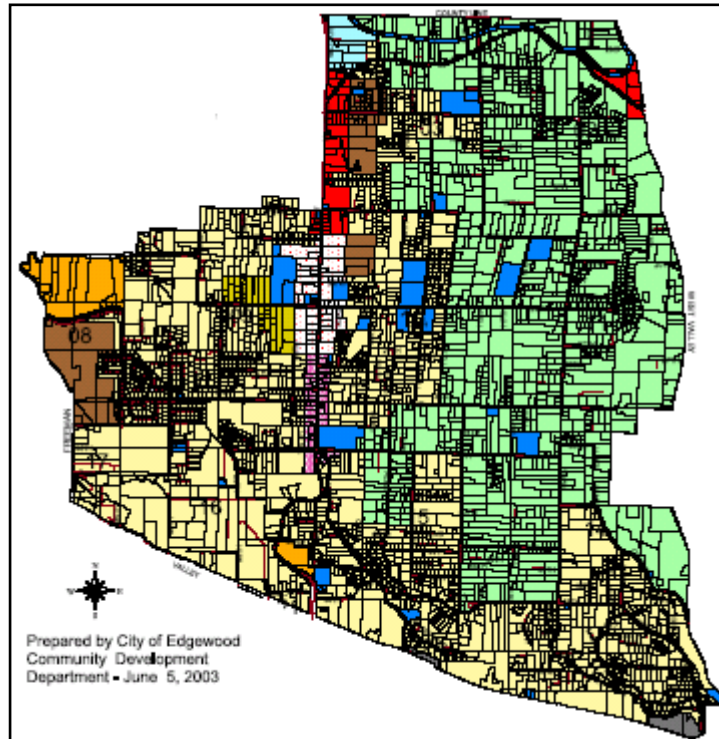
Surface Water Management Comprehensive Plan Update (SW-6)

Fund:

Surface Water Fund

Project Category:

Surface Water



Project Description: Regular updates to the City's Surface Water Management Plan are required to address multiple NPDES Phase II permit conditions and deadlines. **The City's current plan, originally adopted in 1996, is currently being updated to reflect recent changes in local, state and federal requirements for stormwater management.** A component of this update will consider basin-level planning and targeted development standards to determine how to best address pothole flooding issues throughout the City. Also, the current NPDES permit requires annual updates to the SWMP and reporting to DOE and the citizens.

Comprehensive Plan Goal CF VIII:

Facilitate the provision of appropriate, reliable surface water management utility services.

Service Impact: An updated city-wide plan for future surface water improvements is needed to ensure adequate surface water services for existing and anticipated development.

Total 6-Year Project Budget: \$225,000

Funding Source:

- Storm Drainage Fees

Critical Milestones:

- *Low Impact Code Update – 2016*
- *Comprehensive Surface Water Management Plan Update – 2017*
- Initial Basin-Level Planning – 2018
- **Annual Updates/Reporting Ongoing**

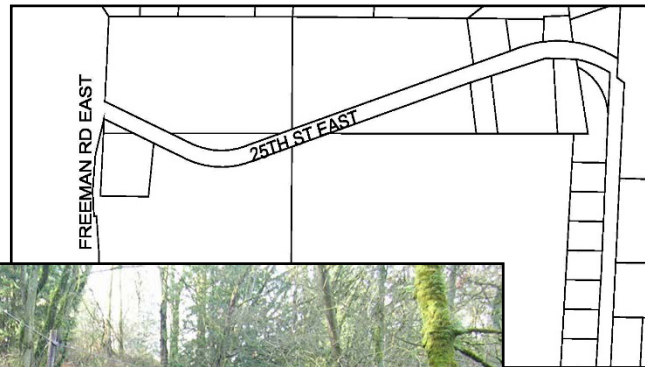
25th St. E. Drainage Improvements (SW-7)

Fund:

Surface Water Fund

Project Category:

Surface Water



Project Description: This project is located along a recently abandoned segment of 25th Street East between the recently installed cul-de-sac and Westridge Parkway. Work being considered includes construction of a thickened edge curb, catch basins, and piped road crossings to control drainage along the north side / slope. Work will also include restoration of the ditch along the south side, and possible relocation / consolidation of outfalls along the north side with slope drains piped to the bottom of the hill. This work is necessary in order to stabilize and repair slide damage to prevent slides along roadway, shoulder erosion and roadway flooding.

Comprehensive Plan Goal CF VIII:

Facilitate the provision of appropriate, reliable surface water management utility services.

Service Impact: This project will reduce downhill erosion and sliding of roadway embankments. This section of roadway was recently closed and Westridge Parkway opened to replace this section of roadway, connecting 86th Avenue East to Freeman Road in Fife.

Total 6-Year Project Budget: \$200,000

Funding Source:

- Storm Drainage Fees
- Grant Revenues
- Developer Funds

Critical Milestones:

- 2021— Design/Construction

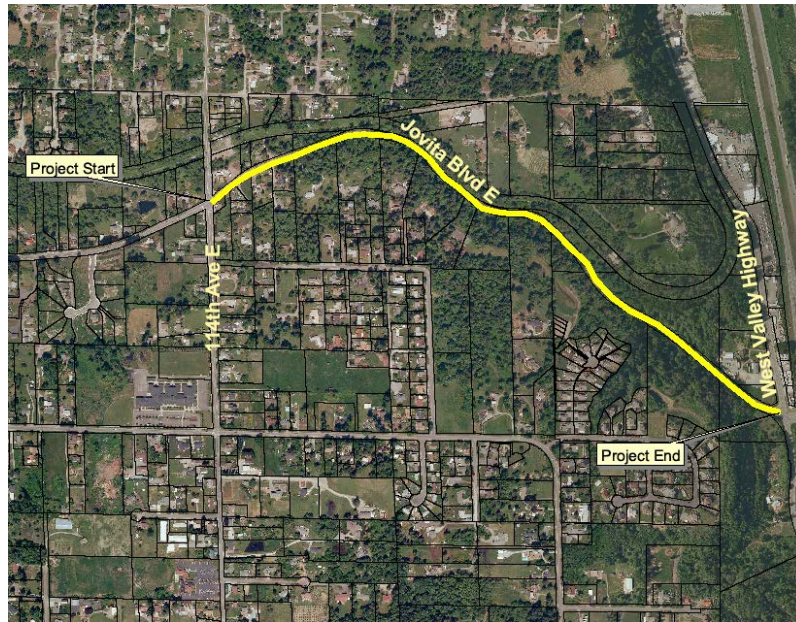
Jovita Boulevard Rehabilitation and Seismic Walls (SW-11)

Fund:

Surface Water Fund,
Grants

Project Category:

Surface Water



Project Description: This project is located on Jovita Boulevard from 114th Avenue East to West Valley Highway (approximately 5,400 lf.).

The project considers the reconstruction of the existing roadway, redefining of roadway alignment and superelevation in spots, additional slope protection (guardrails), stream protection, installation of additional seismic wall(s) to deter landslides, new storm drainage conveyance installation, and re-establishment of the roadway prism and shoulders. Two seismic walls and associated drainage were constructed during the winter of 2016 / 2017.

Comprehensive Plan Goal CF VIII:

Facilitate the provision of appropriate, reliable surface water management utility services.

Service Impact: This project is necessary to assess problems and identify a solution to this stabilization problem.

Total 6-Year Project Budget: \$500,000

Funding Sources:

- Storm Drainage Fees
- Federal Highway Grant Funds

Critical Milestones:

- 2020-2021 – Planning / Design
- 2021-2022 – Construction

Transportation

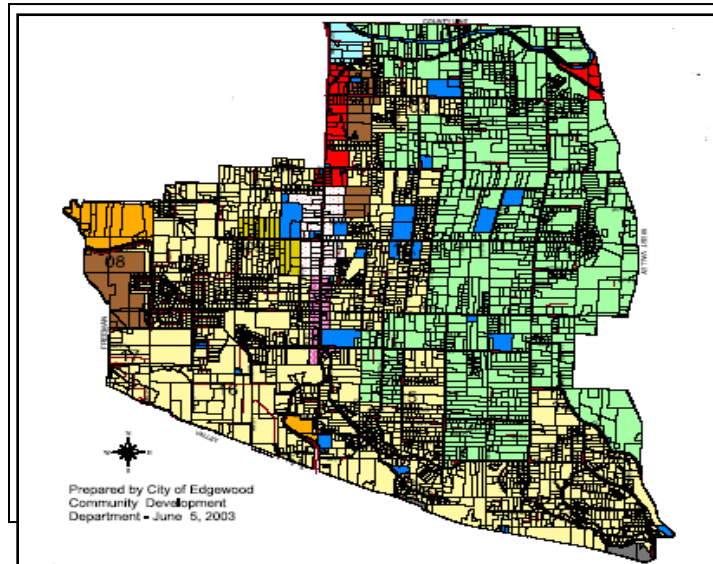
City Road Preservation Program (T-1)

Fund:

General Fund

Project Category:

Transportation



Project Description: The City's Road Preservation Program is designed to maintain the City's road system to the highest condition rating with the funds available using asphalt overlays and surface chip seals. Currently, the asphalt overlays are done in conjunction with Pierce County's countywide overlay projects. The City of Edgewood's Public Works Department will provide project administration, construction oversight, quality review and final acceptance. (See project #6 within the City's adopted Transportation Improvement Plan TIP).

In the past, the City made an effort to chip seal approximately 6 miles of road each year. Unfortunately, due to budget cuts this level of service has not been maintained. The Council has authorized transfers of the second .25% Real Estate Excise Tax (REET2) to help fund this program since 2006.

Comprehensive Plan Project A-2:

Service Impact: This program is needed to maintain the road quality and extend the life span of the City's existing roadway network.

Total 6-Year Project Budget: \$1,327,284

Funding Source:

- Real Estate Excise Tax
- Transportation Capital Funds
- Surface Water Fees
- Grant Revenue

Critical Milestones:

- The program will take place annually during the summer construction period (June – September).

Citywide Traffic Safety Program (T-2)

Fund:

General Fund

Project Category:

Transportation



Project Description: Pedestrian landing pads for school bus stop, traffic signs, bus shelters, flashing beacons, crosswalks, pavement markings and bus turnouts, sidewalks and miscellaneous safety hazards that are identified. (See project #10 within the City's adopted Transportation Improvement Plan TIP).

Comprehensive Plan Project A-3:

Service Impact: Neighborhood traffic calming projects, safety projects and reconstruction of ADA deficiencies.

Total 6-Year Project Budget: \$130,000

Funding Source:

- Real Estate Excise Taxes
- Transportation Capital Funds

Critical Milestones:

- Annual allocation for utilizing funds for pedestrian improvement projects, as well as identified pedestrian safety issues that arise.

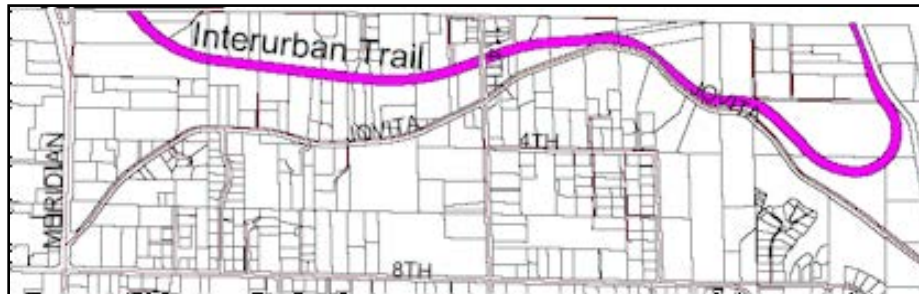
Interurban Trail Phase III Feasibility Study (T-3)

Fund:

General Fund

Project Category:

Transportation



Project Description:

Topographic survey to enable design of the easiest, most affordable portion of corridor, tunnel design and geotechnical components of the future project in making connection with Milton section of trail that currently ends along South 380th Street. (See project #7 within the City's adopted Transportation Improvement Plan TIP).

Comprehensive Plan Project S-3:

Service Impact: Increase non-motorized transportation capacity within Edgewood in order to alleviate impacts associated with increased traffic demands. Provide vital connection between the Cities of Milton, Fife, Pacific and Auburn.

Total 6-Year Project Budget: \$75,000

Funding Source:

- Transportation Capital Funds
- Cross Jurisdictional Partnerships

Critical Milestones:

- 2020 - Study initiation and Completion.

Chrisella Road East Safety Improvements (T-4)

Fund:

General Fund

Project Category:

Transportation

**Project Description:**

Improve pavement markings, signage, lighting, sight distance; improve intersection with 48th Avenue East and consider installation of traffic calming measures (See project #5 within the City's adopted Transportation Improvement Plan TIP).

Comprehensive Plan Project R-10:

Service Impact: Limited sight distances due to roadway grade elevations and roadway narrowness. Pedestrian capacity is very limited due to lack sidewalks and improved access would allow for connections to be made with Puyallup/Sumner.

Total 6-Year Project Budget: \$870,000

Funding Source:

- Transportation Capital Funds
- Traffic Impact Fees
- Grants

Critical Milestones:

- 2020 - Planning/Design
- 2021 - Construction

Edgewood Drive E Safety Improvements (T-5)

Fund:

General Fund

Project Category:

Transportation

**Project Description:**

Roadway widening, curb, gutter, storm water system and pedestrian walkway. (See project #4 within the City's adopted Transportation Improvement Plan TIP).

Comprehensive Plan Project R-4:

Service Impact: Limited sight distances due to roadway grade elevations and roadway narrowness. Pedestrian capacity is very limited due to lack of sidewalks and improved access would allow for connections to be made with Puyallup/Sumner.

Total 6-Year Project Budget: \$1,668,050

Funding Source:

- Transportation Capital Funds
- Traffic Impact Fees
- Grants

Critical Milestones:

- 2018 - Planning/Design
- 2020/2021 - Construction

Transportation Engineering/Plan Support (T-6)

Fund:

General Fund

Project Category:

Transportation



Project Description: Annual program to maintain/update pavement management system, road standards and traffic model.

Comprehensive Plan Project A-1:

Service Impact: Limited staffing will provide for needed transportation engineering and existing inventory analysis in best managing the City's street resources.

Total 6-Year Project Budget: \$300,000

Funding Source:

- Real Estate Excise Taxes
- Transportation Capital Funds

Critical Milestones:

- Annual funding allocation in order to provide needed engineering/transportation analysis for impacts effecting the City's roadway network.

Parks

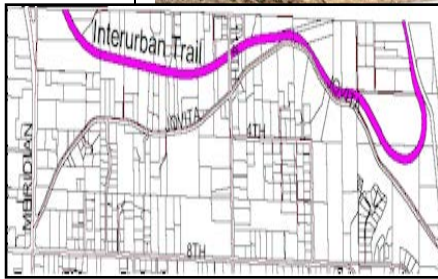
Interurban Trail Phase III Topo Study (P-1)

Fund:

General Fund

Project Category:

Parks and Recreation



Project Description: Phase III involves the development of the Interurban Trail east of 114th Avenue East to West Valley Highway. This Phase of the Trail will be constructed in segments due to the environmental and geotechnical challenges the location presents. Some of the more challenging elements include steep slopes, Jovita Creek, tussles, a collapsed tunnel and switchbacks to reach the valley floor below.

Parks, Recreation and Open Space Plan Project P-1:

Service Impact: This project is needed to progress toward the level-of-service identified in the Comprehensive Plan.

Total 6-Year Project Budget: \$740,000

Funding Source:

- Park Impact Fee Revenues
- Real Estate Excise Taxes

Critical Milestones:

- 2022—ROW Survey & Certification
- 2022—Design Phase
- 2023—Construction Phase

Miscellaneous Park Improvements (P-2)

Fund:

General Fund

Project Category:

Parks and Recreation



Project Description: Miscellaneous improvements will be made to existing parks, including repairs, parking areas, restrooms and shelters.

**Parks, Recreation and Open Space Plan
Project P-9:**

Service Impact: Improvements are necessary to enhance future usability of existing parks.

Total 6-Year Project Budget: \$150,000

Funding Source:

- Parks Capital Funds
- Real Estate Excise Taxes
- Non-Profit Donations

Critical Milestones:

- Annually – Park Needs Evaluated at the Start of Each Year.

Edgewood Multi Modal Trail Loop/Trailhead (P-3)

Fund:

General Fund

Project Category:

Parks and Facilities



Project Description: The City of Edgewood is very fortunate to maintain a large parcel of property that City Hall is currently located at. The parcel consists of approximately 7.6 acres, which includes City Hall and a historic barn that serves as a storage facility for the City's Public Works Department. As this parcel sits in the center of the Edgewood's identified Towncenter Corridor, this property is an ideal location for civic related activities including open space, both public and private partnerships and other amenities. The intent of this project is to provide adequate infrastructure in order to support a trailhead for the multimodal trail loop envisioned in the City's adopted PROS's Plan.

Parks, Recreation and Open Space Plan Project P-4:

Service Impact: Trails have been identified as a City resource in need of future development in order to meet the goals identified within the Cities adopted Comprehensive Plan. This site currently houses City Hall and is of significant importance as a civic center in the development of the cities planned downtown area and is ideal as a trailhead for the planned multi modal loop.

Total 6-Year Project Budget: \$1,700,000

Funding Source:

- Parks Capital Funds

Critical Milestones:

- 2016 – Towncenter Market Analysis Completed.
- 2020 - Complete Site/Trail Master Plan, develop partnerships.
- 2021/2022 Land/Right of Way Acquisition.
- 2023 – Construction.

Nelson Farm Farmhouse Remodel (P-4)

Fund:

General Fund

Project Category:

Parks and Recreation



Project Description: The farmhouse located at the Nelson Farm Park is currently not being used for any purposes. The 1,300 square foot house was built in 1920 and remodeled in 1952.

This project includes updating the plumbing and electrical systems and modifying the entrance and restroom for ADA accessibility at the farmhouse. Reroofing the garage and adding a parking area are also included in the project scope. The farmhouse will be used as meeting space for park related groups and/or projects and also as an information center for future activities at the Nelson Farm Park.

**Parks, Recreation and Open Space Plan
Project P-10:**

Service Impact: Redevelopment should meet the changing needs in the community and promote safety and accessibility as primary considerations.

Total 6-Year Project Budget: \$55,000

Funding Source:

- Capital Parks Funds
- Grant Revenue
- Non-Profit Donations

Critical Milestones:

- 2021 – Remodel Work

36th and Meridian Park (P-5)

Fund:

General Fund

Project Category:

Parks and Recreation



Project Description: This project involves development of 18 acres purchased from the Puyallup School District in December 2004.

The 36th and Meridian Park Adhoc Committee was formed in early 2007 and with the help of a landscape architect, a Master Plan of the 18-acre park facility was presented to the Council and citizens of Edgewood. Design work for the project began in 2015 and a 30% plan developed as part of the submittal package for two RCO grants in June of 2016. The current design includes a shelter, dog park, parking lot, play equipment and picnicking facilities.

**Parks, Recreation and Open Space Plan
Project P-3:**

Service Impact: This project is needed to progress toward the parks level-of-service identified in the Comprehensive Plan.

Total 6-Year Project Budget: \$3,950,000

Funding Source:

- Recreation and Conservation Office Grants
- Park Impact Fees
- Real Estate Excise Tax

Critical Milestones:

- 2006—Hired Landscape Architect to begin Master Plan
- 2007—Master Plan completed
- 2018/19—Design
- 2020—Construction

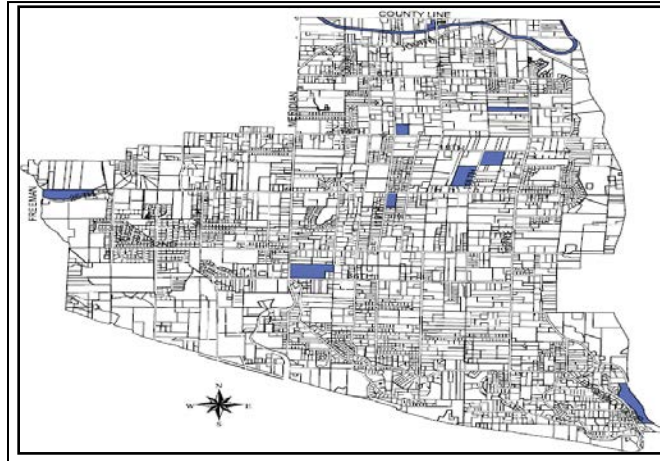
City-Wide Park Land Acquisition (P-6)

Fund:

General Fund

Project Category:

Parks and Recreation



Project Description: The intent of this project is to plan for the acquisition and preservation of land for future parks and recreational uses in advance of development in an effort to ensure affordable land prices and a choice of sites.

Property owners in Edgewood are encouraged to donate or sell property at a reduced rate to be used for future parks and open space. Land Acquisition identified in the CIP provides funds for future purchases. It is estimated that approximately 5 acres of active park land can be purchased for \$300,000. The source of funding for this program is Park Impact Fees or General Fund resources.

Parks, Recreation and Open Space Plan Project P-11:

Service Impact: This project is needed to progress toward the level-of-service identified in the Comprehensive Plan.

Total 6-Year Project Budget: \$60,000

Funding Source:

- Park Impact Fees
- Capital Park Funds
- Conservation District Funds

Critical Milestones:

- Annual Planning of Land Acquisition Opportunities

Sanitary Sewer

Sanitary Sewer Comprehensive Plan Update (SS-1)

Fund:

Sewer Fund

Project Category:

Sanitary Sewer



Project Description:

The General Sewer Plan was adopted by Council in 2007 and construction was completed for a large portion of the Phase I Sewer System through LID No. 1 in 2011.

This project will update the General Sewer Plan to reflect the actual project that was constructed and plan for future expansion of Phase II and Phase III.

General Sewer Plan (2004 and Updated in 2007)

Service Impact: Future development in the City is limited by the lack of wastewater facilities.

Total 6-Year Project Budget: \$150,000

Funding Source:

- Capital Sewer Funds
- Sewer User Fees

Critical Milestones:

- 2018 Plan Update

Wetland Mitigation/Northwood School Mitigation Project (SS-2)

Fund:

Sewer Fund

Project Category:

Sewer

**Project Description:**

Original Meridian Avenue Sewer LID #1 project included the placement of a sewer line through a wetland buffer on the historic Interurban railroad bed. As a result of the line placement, some unavoidable impacts to wetland buffers occurred. A portion of the Interurban trail bed will remain as an access road for pump station #1 and will result in a total permanent impact of 7,892 square feet of bugger. This will be mitigated through buffer averaging (6,916 square feet), as well as enhancing 6,916 square feet of added area.

Comprehensive Plan: N/A, project is a component of the original LUD completed by the City of Edgewood

Service Impact: Project was a result of impacts associated with the original construction of the Sewer system. Mitigation is required in order to compensate for project impacts on an existing wetland buffer along the historic Interurban railroad bed.

Total 6-Year Project Budget: \$55,000

Funding Source:

- Capital Sewer Funds

Critical Milestones:

- 2015/2016 – Site Design and Permitting
- 2018 - Construction

**CITY OF EDGEWOOD
STAFF REPORT
STUDY SESSION AGENDA ITEM: 2018-2023 TIP**

Date: November 7, 2017

Title: 2018-2023 Transportation Improvement Plan (TIP)

Attachments: Resolution No. 17-0389, Exhibit A 2018-2023 TIP

Submitted By: Asst. City Administrator, Dave Gray

Approved For Agenda By: Daryl Eiding, Mayor

Discussion: This plan has been discussed on several occasions with the City Council including several study sessions and a public hearing that was held at the Council's October 24, 2017 meeting.

Recommendation: Staff recommends that the City Council move forward with this time being brought forward to the next Council meeting for adoption of Resolution No. 17-0389, adopting the City's Transportation Improvement Plan (TIP) for the years 2018-2023, as required of City's planning under the States' Growth Management Act.

Alternatives: 1) Do not adopt. 2) Forward to Study Session for further review

Fiscal Impact: As this is a component of the annual budgeting process, the impacts to the City's budget is outlined within the Transportation Improvement Plan.

Transportation Improvement Plans in their nature are planning documents that help express the Council's desires for future transportation improvements within City jurisdiction. Transportation plans are utilized at the regional level as well, as State and other planning agencies evaluate the merit of projects at a regional scale. Based on this information, TIP projects are considered and are often funded by other, regional resources. They are not final budgeting documents, as this is reserved for the actual budget that is adopted by the City Council towards the end of the City's fiscal year.

RESOLUTION NO. 17-0389

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, APPROVING THE 2018-2023 SIX-YEAR TRANSPORTATION IMPROVEMENT PLAN

WHEREAS, per RCW 35.77.010, the City is required to annually update its Six-Year Transportation Improvement Plan (TIP) before July 1st of each year and file the update Transportation Improvement Plan with the Washington State Department of Transportation within thirty (30) days of adoption; and

WHEREAS, per RCW 35.77.010, the purpose of the requirement for annual updates is to assure that each city shall perpetually have available advanced plans looking to the future for not less than six years as a guide in carrying out a coordinated transportation program; and

WHEREAS, it is also an eligibility requirement of many grant programs that the City update its Transportation Improvement Plan as required by RCW 35.77.010; and

WHEREAS, per RCW 35.77.010, a public hearing was held on October 24th, 2017 on the proposed updates to the Transportation Improvement Plan;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, HEREBY RESOLVES AS FOLLOWS:

Section 1. The City Council does hereby approve the 2018-2023 Six-Year Transportation Improvement Plan (TIP), a copy of which is attached as Exhibit “A” and incorporated herein by reference.

Section 2. Effective Date. This resolution will take effect immediately upon passage by the City Council.

ADOPTED THIS 24TH DAY OCTOBER OF , 2017

Daryl Eidinger, Mayor

ATTEST:

Rachel Pitzel, City Clerk

Exhibit A
2018-2023 Transportation Improvement Plan (TIP)

Project No.	Transportation Capital Project ¹	Estimated Total Project Cost	Estimated Annual Project Expenditures by Year (DRAFT)						Estimated 6-year Total Program Cost ³	Comments
			2018	2019	2020	2021	2022	2023		
1	Meridian Avenue / 32nd Street East Intersection improvements (TIF 50%)	370,000		50,000	320,000				370,000	Install signal and make ADA upgrades within the intersection.
2	Meridian Avenue East Preliminary Design (TIF 100%)	250,000		250,000					250,000	Complete corridor study and preliminary design of 3-lane cross section and supporting intersection treatments.
3	Emergency Road Repair (Weather Related)	150,000	25,000	25,000	25,000	25,000	25,000	25,000	150,000	Road failures associaed with severe weather events, wear and tear from freeze/thaw events and other causes.
4	Edgewood Drive Safety Improvements (TIF 20%)	1,518,050	150,000		1,000,000	368,050			1,518,050	Roadway widening, curb gutter, stormwater system and pedestrian walkway.
5	Chrisella Road East Safety Improvements (TIF 20%)	830,000			150,000	680,000			830,000	Improve pavement markings, signage, lighting, sight distance; improve intersection with 48th Avenue East and potnetail traffic calming measures.

Project No.	Transportation Capital Project ¹	Estimated Total Project Cost	Estimated Annual Project Expenditures by Year (DRAFT)						Estimated 6-year Total Program Cost ³	Comments
			2018	2019	2020	2021	2022	2023		
6	Citywide Road Preservation Program: Prioritized Streets per Pierce County Pavement Condition Report	1,617,102	250,000	257,500	265,225	273,182	281,377	289,819	1,617,102	2" full roadway width HMA overlay with mill/grind of existing pavement or rubberized chipseal. Crack sealing and digout repairs are included.
7	Interurban Trail Phase III, Connection Feasibility Study	75,000			75,000				75,000	Develop approximately 1.05 miles as a trail from 114th Avenue East to the City of Pacific.
8	Citywide Pedestrian Mobility and Safety Improvements (Highest Priority) (TIF 20%)	328,905	20,000	20,000	50,000	50,000	50,000	50,000	240,000	Walkways, paths, and/or trails with vegetated buffers for traffic safety, low level pedestrian lighting where appropriate, signing and pavement markings, as identified within the 2004 Pedestrian Study (Garry Struthers Associates).
9	Meridian Interconnect Signalization Project (TIF 100%)	450,000					100,000	350,000	450,000	Meridian interconnect signalization project.

Project No.	Transportation Capital Project ¹	Estimated Total Project Cost	Estimated Annual Project Expenditures by Year (DRAFT)						Estimated 6-year Total Program Cost ³	Comments
			2018	2019	2020	2021	2022	2023		
10	Citywide Traffic Safety Program	130,000	20,000	20,000	20,000	20,000	20,000	20,000	120,000	Neighborhood Traffic Calming Projects, Safety Projects and reconstrucion of ADA deficiencies.
11	Annual Road Maintenance Program (Traffic)	500,000	70,000	72,100	74,263	76,491	78,786	81,149	452,789	Repair and maintenance of City transportation infrastructure, including traffic operations, signing and markings

Total 6-Year TIP \$6,219,057 \$535,000 \$694,600 \$1,979,488 \$1,492,723 \$555,163 \$815,968 \$6,072,941

Total Awarded TIB Funding: 150,000 75,000 976,390 912,050 2,113,440

Total Awarded STP/CMAQ Funding: 16,000 16,000 40,000 40,000 40,000 40,000 192,000

Total WSDOT Funding: 25,000 25,000 25,000 25,000 25,000 25,000 150,000

Total Public Works Trust Fund Loan: 0

Total Unidentified Funds 0

Total Identified Grant Funding (SUM) 191,000 116,000 1,041,390 977,050 65,000 65,000 2,455,440

Total City Funds:² 344,000 578,600 938,098 515,673 490,163 750,968 3,617,501

NOTES:

1 Project completion is 100% dependent on funding availability

2 City funding sources include Traffic Impact Fees, REET and Surface Water Fund.

3 6-year Total Progam Cost does not have to match Total Project Cost because the project could have begun and incurred expenditures past years.

Prepared by: Public Works

Date Prepared: October 11, 2017

CITY OF EDGEWOOD

STAFF REPORT

STUDY SESSION AGENDA ITEM: Council Highlight Article

Date: November 7, 2017

Title: Council Highlight Article for the Winter Edition of Edgewood Magazine

Attachments: Email with draft article; Be Prepared Brochure

Prepared for Packet By: Rachel Pitzel, City Clerk

Approved For Agenda By: Daryl Eiding, Mayor

Discussion: Attached is an email from Councilmember Meyer's article for the Winter Edition of the Edgewood Magazine. Council has the opportunity to review and make any suggested changes or additions.

Recommendation: Any additions or changes should be provided to the City Clerk by November 9, in order to meet the deadline for article submission to the Communications Coordinator.

Alternatives: N/A

Fiscal Impact: N/A

From: [Daryl Eidinger](#)
To: [Rachel Pitzel](#)
Subject: FW: Draft Article
Date: Wednesday, November 01, 2017 11:29:18 AM
Attachments: [be-prepared-brochure.pdf](#)
[ATT00001.htm](#)

FYI and probably for the packet

Daryl Eidinger

Mayor

City of Edgewood

(253) 952-3299

From: Luke Meyers
Sent: Tuesday, October 31, 2017 10:30 PM
To: Stephanie Shook; Daryl Eidinger
Subject: Fwd: Draft Article

Sent from my iPad

Begin forwarded message:

From: "Luke Meyers" <lukeharee@aol.com>
To: "Luke Meyers" <luke.meyers@cityofedgewood.org>
Subject: Draft Article

Good evening.

My draft article is below. Graphic to include is attached if not all, maybe the first page. Feel free to make edits or changes, let me know.

Thanks,

L Meyers

.....
In light of recent wildfires, earthquakes, and storms, we should take time to reflect on how prepared we are as a community and how prepared we should strive to be in the places we live, work, and play.

As an elected official and a member of our public safety community, I have been part of outreach efforts that have stressed the need to be ready for 3 days or 72 hours. Recently, this messaging has changed and a new preparedness bar has been set to be ready for at least 14 days or 2 weeks.

You may ask, why such a big increase?

This type of preparedness will help us respond to and recover from many different types of emergencies impacting our region from the routine house fires, to localized flooding, to train derailments, to severe wind and winter storms, to larger types like Mt. Rainier and earthquakes. The greater the impacts from these emergencies, the further reaching consequences for you, your family, your friends, your work, the community, and the City.

The recent large emergencies have reinforced that there are only so many federal, state, and local resources to support day-to-day activities, and when we have shocks to our community these resources are stretched further and will not be available for longer periods of time.

Our community also deals with daily challenges, whether these are at an individual level with mental, physical, and financial health and well being, or at a community level with roads, bridges, buildings, and utilities being maintained.

We also have dependencies, those that rely on you and those that you rely on. You may be the caregiver or bread winner for your family, you may be the community member that volunteers, you may be the firefighter for the fire district, you may be the lineman for the energy company, you may be the public work manager for the city, or the field manager for the water company. Whether at home or at work, the balance between these dependencies, will be tested in the next emergency.

So, what do you do?

We must create an enhanced culture of preparedness: this is where you, your family, your friends, your co-workers all become important parts of the response and recovery to these emergencies.

To be prepared for a long period of time takes commitment. This type of commitment is not just a do it once and forget about it exercise, but needs to start at a foundation and routine level. Otherwise, like so many other messages reaching you, your family, and your friends, it will be lost and become almost like white noise.

So let us put this in some context, one of our biggest emergencies to impact our community is a large earthquake. In February

2001, our community experienced a moderate earthquake with about 40 seconds of shaking. We expect from our large earthquakes to experience about 3-5 minutes of shaking potentially or about 200 plus seconds. That is a long time to be thinking about survival and all the time you had to get ready.

If you watch a 30-minute TV show there are about 8 minutes of commercials, probably more. If we take 4 minutes of this time and prepare each day, imagine how high our culture of preparedness would be increased. I know this seems like a big commitment, it is, but ultimately your response to and recovery from the emergency will be influenced by what you invest. The beauty of this opportunity is that we all decide how to leverage our time and we all know from experience that if you invest in your future you will be better off.

So, I challenge you to enhance your preparedness and take 4 minutes to get ready.

One of the most common failures in emergencies is communications. A simple first step in building your preparedness is to have a communications plan. There are different parts, but a major piece is having an out of area contact. Having an out of area contact will provide you and your family a common lifeline to report and share information as an emergency unfolds. Another simple step is including extras mobile device chargers, chords, and batteries at home, in your car, and at work.

Take a picture or make a video and document your transformation with #readytake4 on social media.

Some references for additional information can be found below.

Washington State – Map Your Neighborhood

<https://mil.wa.gov/emergency-management-division/preparedness/map-your-neighborhood>

Pierce County – Pierce County Neighborhood Emergency Teams

<https://www.co.pierce.wa.us/2297/Pierce-County-Neighborhood-Emergency-Tea>

Washington State - Out of Area Contact

<https://www.mil.wa.gov/uploads/pdf/Publications/create%20an%20out%20of%20area%20contact.pdf>

Thank you for your time and support for our community.

Luke Meyers

2 WEEKS READY

BUILD KITS

Plan to be on your own for at least 2 weeks



Water (1 gallon per person, per day)



Food (non-perishable)



Comfort/entertainment



Medical equipment



Glasses/eye care



First aid kit



Can opener



NOAA alert radio



Flashlight



Personal hygiene items



Tools



Pet supplies



Cash



Toilet paper



Medications



Identification & important documents



Sturdy shoes



Extra batteries



Warm clothes



Fire extinguisher



Keep at least 2 weeks of supplies in your home. Have smaller kits for work, for every family member, and pets. Have a vehicle safety kit too.

BE PREPARED

MAKE A PLAN

Determine an accessible meeting place in case you have to leave your home or work, so you can reunite your family.



LEARN ABOUT DISASTER PLANS FOR

Your work

Your children's school

Your medical and/or transportation provider

Other places where your family spends time



Check with your local emergency management office to:

- find out what hazards could affect your home and place of work
- sign up for emergency alerts and notifications
- identify your local emergency alert system (EAS) radio stations
- know your evacuation and alternate transportation routes

DEVELOP A COMMUNICATIONS PLAN



Write down emergency contact information



Texts are more likely to go through



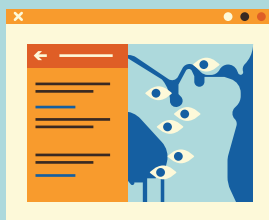
Have an extra cell phone charger and batteries



An out-of-area contact can serve as a relay point for family communication

HELP EACH OTHER

Know how you'll help people and pets who normally rely on you



Form a neighborhood group: for examples and suggestions, see Map your Neighborhood at: emd.wa.gov/myn

Help organizations in your neighborhood that may need support during a disaster

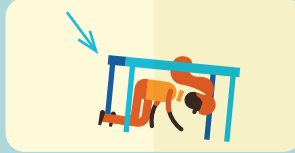
Attend free disaster skills workshops offered by your local emergency management office and learn basic survival skills

ACTIONS TO TAKE DURING A QUAKE

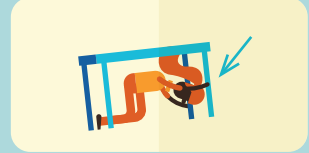
DURING THE SHAKING



DROP



COVER



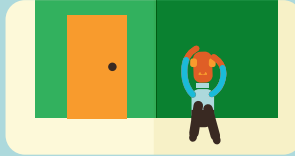
AND HOLD ON

If there is no table around, get lower than the other furniture.

THINK



BENEATH



BESIDE



BETWEEN

AFTER THE SHAKING

CHECK YOUR BUILDING:



For structural damage



Shut off the water at the main valve



Shut off gas only if you:



→ Smell natural gas



→ Hear hissing



→ See the dial spinning rapidly



Check for injuries and apply basic first aid



Leave building if unsafe



Help your neighbors



FOR MORE INFORMATION



Local television



Your local Emergency Management office



Emergency radio stations
NOAA weather radio channels



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