AGENDA
CITY OF SHORELINE PLANNING COMMISSION
REGULAR MEETING

Thursday, July 21, 2005
7:00 p.m.

Shoreline Conference Center | Board Room
18560 1st Ave NE

		Estimated Time
1.	CALL TO ORDER	**7:00 p.m.**
2.	ROLL CALL	**7:01 p.m.**
3.	APPROVAL OF AGENDA	**7:02 p.m.**
4.	DIRECTOR'S REPORT	**7:03 p.m.**
5.	APPROVAL OF MINUTES a. None available	**7:08 p.m.**
6.	GENERAL PUBLIC COMMENT	**7:10 p.m.**

The Planning Commission will take public testimony on any subject which is not of a quasi-judicial nature or specifically scheduled for this agenda. Each member of the public may comment for up to two minutes. However, Item 6 (General Public Comment) will be limited to a maximum period of twenty minutes. Each member of the public may also comment for up to two minutes on action items after each staff report has been presented. The Chair has discretion to limit or extend time limitations and number of people permitted to speak. In all cases, speakers are asked to come to the front of the room to have their comments recorded. Speakers must clearly state their name and address.

7.	REPORTS OF COMMITTEES AND COMMISSIONERS	**7:15 p.m.**
8.	STAFF REPORTS a. Critical Areas Ordinance Update Deliberations	**7:25 p.m.**
9.	PUBLIC COMMENT	**9:15 p.m.**
10.	UNFINISHED BUSINESS	**9:25 p.m.**
11.	NEW BUSINESS	**9:30 p.m.**
12.	AGENDA FOR August 4, 2005 Continuance of Critical Areas Ordinance Update Deliberations	**9:35 p.m.**
13.	ADJOURNMENT	**9:40 p.m.**

The Planning Commission meeting is wheelchair accessible. Any person requiring a disability accommodation should contact the City Clerk's Office at 546-8919 in advance for more information. For TTY telephone service call 546-0457. For up-to-date information on future agendas call 546-2190.

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PLANNING COMMISSION AGENDA ITEM
CITY OF SHORELINE, WASHINGTON

AGENDA TITLE:	Critical Areas Ordinance: Planning Commission Deliberations
DEPARTMENT:	Planning and Development Services
PRESENTED BY:	Tim Stewart, Director, Planning and Development Services Matthew Torpey, Planner II

EXECUTIVE SUMMARY

On March 17, 2005 the Planning Commission held an open record public hearing on the draft critical areas ordinance. Deliberation of the draft code changes began on April 7th. In that meeting the commission reviewed several pages of the proposed changes prior to adjourning the meeting.

It has been some time since the Critical Areas ordinance has been before the Commission. Staff is providing the commission all information that has been distributed to date. This includes the original draft code changes; a matrix of comments from the Planning Commission as well as staff and state agencies; a matrix of specific amendments that are to be brought up in discussion as recommended by staff and individual members of the Planning Commission as well as a technical memorandum regarding best available science utilized in the formulation of the critical areas ordinance.

The State of Washington Department of Community, Trade, and Economic Development has set a deadline for local jurisdictional adoption of critical areas ordinances at **December 1, 2005**. What this means to the Commission is that time is limited. The process of a public hearing, deliberation and discussion must occur at the City Council level prior to this deadline. The Planning Department Staff recommends that the Commission conducts their deliberations and recommendation to Council as outlined in the current Planning Commission Agenda Planner. Deliberations are scheduled for this meeting, **July 21st**, as well as on **August 4th**. It is anticipated that the Planning Commission can conduct their review and deliver a recommendation to City Council by the end of the meeting scheduled for **August 18th**.

All inquiries, questions, and comments in regards to the draft documents may be directed to Matt Torpey, Planner II. City of Shoreline, 17544 Midvale Ave. N., Shoreline, WA 98133. (206) 546-3826, or email mtorpey@ci.shoreline.wa.us.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission deliberate the ordinance and amendments included in the matrix and provide a recommendation to City Council by the end of the **August 18, 2005** meeting in order to provide ample time for City Council review and decision prior to the State established deadline of **December 1, 2005**.

ATTACHMENTS

Attachment I: Critical Areas Questions & Answers
Attachment II: Proposed SMC 20.80, Critical Areas
Attachment III: Proposed SMC 20.50, Tree Clearing
Attachment IV: Adolfson Technical Memorandum on BAS
Attachment V: Comment & Response Matrix
Attachment VI: Proposed Amendments to the CAO

City of Shoreline

CRITICAL AREA ORDINANCE (CAO)

QUESTIONS AND ANSWERS

What is a "critical area" and why are we updating our Critical Area Ordinance now?

The Washington State Growth Management Act (GMA) requires cities such as Shoreline to designate and protect critical area such as wetlands, fish and wildlife habitat, flood zones and geological hazards. The state has mandated that Cities and Counties update their CAO's now.

Was science used in the development of the update?

Yes. The State requires that we "include the best available science in developing policies and development regulations to protect the functions and values of critical areas". The City's CAO was adopted in 2000 using Best Available Science (BAS). That science has been supplemented by the City of Shoreline Stream and Wetland Inventory (May 2004) and the Draft Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan (November 12, 2004), and numerous other publications and documents summarized in a technical memorandum produced by Adolphson and Associates (October 2003).

What does it mean to "protect the functions and values of critical areas"?

Each type of critical area has functions. For example, one function of deeply rooted tree on a steep slope is slope stability. One function of a tree along a stream is shade (controlling water temperature). Critical areas have multiple functions. For example, each tree would also serve a function for wildlife habitat and a tree along a stream might provide fish habitat as well. It is the protection of the functions of the critical areas of Shoreline that is at the heart of the CAO.

Do the amendments add any protections to streams and wetlands in Shoreline?

Yes. The proposed amendments increase stream and wetland buffer requirements from 15-250%. The amendments also eliminate the disparity in the levels of protection that is now in our CAO between streams and wetlands.

Existing and Proposed Stream Buffers

Type	Standard Buffer Width (ft)	Minimum Buffer Width (ft)
Type I	150	~~100~~115
Type II	~~100~~115	75
Type III	~~50~~65	~~25~~35
Type IV	~~25~~35	~~10~~25

Existing and Proposed Wetland Buffers

Type	Standard Buffer Width (ft)	Minimum Buffer Width (ft)
Type I	150	~~100~~115
Type II	~~100~~115	~~50~~75
Type III	~~50~~65	~~25~~35
Type IV	~~10~~35	~~10~~25

Why are we increasing the buffers for streams and wetlands?

The best available science documents and the WRIA 8 report support the proposed changes.

If I have a legally existing home or other building that is located within the new expanded buffers will I have to move it?

No. Legally existing uses may continue and may be replaced if destroyed.

If I want to build a new room on my house that would encroach into the buffer, could I?

New development will be prohibited in critical areas and their buffers, however if a property is completely encumbered by critical areas or their buffers, a person can seek relief through a critical areas reasonable use permit. The City shall grant this type of permit only if the applicant demonstrates a number of hardships associated with building in a critical area

What if I own a parcel of land that is entirely within a critical area or buffer, does the CAO prohibit all reasonable use?

No. There is a provision in the CAO to apply for a Critical Area Reasonable Use Permit (CARUP) and if the very rigorous criteria are met, reasonable use of a property may be granted.

How do the amendments address wetland replacement ratios?

The amendments provide significant increases in wetland replacement and enhancement ratios. The increases to replacement ratios are supported by best available science.

Proposed Replacement Ratios

Wetland Type	Wetland Creation Replacement Ratio (Area	Wetland Enhancement Ratio (Area)
Type I	6:1	16:1
Type II	3:1	12:1
Type III	2:1	8:1
Type IV	1.5:1	6:1

Existing Replacement Ratios

Wetland Creation Replacement Ratio (Area	Wetland Enhancement Ratio (Area)
6:1	2:1
2:1	1:1
2:1	1:1
1.25:1	1:1

Do the amendments address the designation of Fish and Wildlife Habitat Conservation Areas (FWHCA)?

Yes. The amendments clarify that FWHCA are places formally designated by the City of Shoreline, based upon a review by BAS and input from the Washington Department of Fish and Wildlife, the Washington Department of Ecology and other agencies. It is the City's intention to produce a critical areas mapping folio that may include updates to the FWHCA. Additions of FWHCA to Shorelines maps are dependent on the Department of Fish and Wildlife accepting the proposed new mapping areas. It is anticipated that this mapping project will commence once the critical areas updates have been reviewed and adopted

Two areas of controversy have been "hazardous trees" and "salmonid fish use". Do the amendments address these contentious issues?

Yes. The amendments provide clarifications in the definitions of both "hazardous trees" and "salmonid fish use".

The proposed definition of Hazardous Trees:

SMC 20.20.024 H. Trees that have a structural defect, combination of defects or disease resulting in a structural defect that, under the normal range of environmental conditions at the site, will result in the loss of a major structual component of that tree in a manner that will:

1. Damage a residential structure or accessory structure, place of employment or public assembly or approved parking for a residential structure or accessory structure or place of employment or public assembly;
2. Damage an approved road or utility facility; or
3. Prevent emergency access in the case of medical hardship.

Removal of hazardous trees shall occur consistent with the tree conservation permitting and site restoration requirements of SMC 20.50.290 to 20.50.370.

Salmonid fish use is defined for where fish have been documented as well as where they are presumed based on passability or planned restoration. The proposed definition for salmonid fish use is:

SMC20-80.470 D. For the purposes of this section, "salmonid fish use" and "used by salmonid fish" is presumed for:

1. Streams where naturally reoccuring use by salmonid populations has been documented by a government agency;

2. Streams that are fish passable by salmonid populations from Lake Washington or Puget Sound, as determined by a qualified professional based on review of stream flow, gradient and barriers and criteria for fish passability established by the Washington Deparment of Fish and Wildlife; and

3. Streams that are planned for restoration in a 6-year capital improvement plan adopted by a government agency that will result in a fish passable connection to Lake Washington or Puget Sound.

The Department may waive the presumption of salmonid fish use for stream segments where a qualified professional has determined there are confirmed, long term water quality parameters making the stream segment incapable of supporting fish.

Views are important to me and add to my property values. In fact, my views are protected by private covenants. Yet trees have grown up in a critical area and they are now blocking my view. Do the amendments address this problem?

Yes. There are two new provisions in the amendments to address this issue. The first would allow for the removal of up to six significant trees in a critical area or buffer if "there is no net loss of the functions and values of each type of critical area". In other words, you may be allowed to remove up to six significant trees within an critical area if it can be verified by a qualified professional that no harm will come to that critical area or its buffer. An example of this would be the removal of trees on a steep slope with the review and approval of a qualified geotechinical engineer. In most cases, replanting of vegetation will be required.

The second new provision would provide for the removal of a larger number of trees through a "View Preservation and Enhancement Program" if a "Critical Area Stewardship Plan" is reviewed and approved following a public process. A "Critical Area Stewardship Plan" shall be created by a licensed arborist as well as a qualified professional to assess the critical areas that lie within the limits of the proposed tree alteration. These professionals may include but are not limited to, a stream biologist, a wetland biologist, and a geotechnical engineer.

A lot of the streams and wetlands that once existed, before Shoreline was developed, were put into pipes. Do the amendments address how these streams in pipes could be "daylighted".

Yes. A new provision encourages the restoration or piped and denigrated watercourses. The new section below is proposed to encourage watercourse restoration and to recognize that standard buffers discourage such restoration. It also establishes a review process for restoration to ensure that it doesn't result in negative impacts.

SMC20.80.490 H. Restoring piped watercourses.

1. The city encourages the opening of previously channelized/culverted streams and the rehabilitation and restoration of streams.

2. When piped watercourse sections are restored, a protective buffer shall be required of the stream section. The buffer distance shall be based on an approved restoration plan, regardless of stream classification, and shall be a minimum of 10 feet to allow for restoration and maintenance. The stream and buffer area shall include habitat improvements and measures to prevent erosion,

landslide and water quality impacts. Opened channels shall be designed to support fish access, unless determine to be unfeasible by the City.

3. Removal of pipes conveying streams shall only occur when the City determines that the proposal will result in a net improvement of water quality and ecological functions and will not significantly increase the threat of erosion, flooding, slope stability or other hazards.

4. Where the buffer of the restored stream would extend beyond a required setback on an adjacent property, the applicant shall seek written agreement from the affected neighboring property owner.

How can I find the details of these amendments?

The amendments will be posted on the City of Shoreline website, www.cityofhshoreline.com or may be obtained free of charge from the Department of Planning and Development Services, 17544 Midvale Ave. N, Shoreline, WA 98133

How can I comment on the proposed changes?

A Public Hearing is scheduled in front of the Shoreline Planning Commission on February 17, 2005.

Who can I contact is I have any questions?

Matt Torpey at (206)-546-3826, email mtorpey@ci.shoreline.wa.us

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Draft Revisions for Critical Areas Protection

Chapter 20.20
Definitions

Critical Areas An area with one or more of the following environmental characteristics:

A. Geologic hazard areas, including but not limited to:

~~Steep slopes;~~

Landslide hazard areas;

Seismic hazard areas; and

Erosion hazard areas;

B. Flood ~~plain~~hazard areas;

~~C. Soils classified as having high water tables;~~

~~D. Soils classified as highly erodible, subject to erosion, or highly acidic;~~

~~E. Seismic hazard areas;~~

~~F~~C. Stream ~~corridors~~areas;

~~G. Estuaries;~~

~~H~~D. Aquifer recharge areas;

The definition of critical areas is proposed to be updated to be consistent with GMA and the City's adopted code sections.

E~~I~~. Wetlands ~~and wetland transition areas~~; and

F~~J~~. Fish and wildlife ~~H~~habitat conservation areas~~s of endangered species~~.

(Ord. 352 § 1, 2004).

20.20.024 H definitions.

Hazardous Trees Trees that have a structural defect, combination of defects or diesease resulting in a structural defect that, under the normal range of environmental conditions at the site, will result in the loss of a major structual component of that tree in a manner that will:

1. ~~1.~~ Damage a residential structure or accessory structure, place of employment or public assembly or approved parking for a residential structure or accessory structure or place of employment or public assembly;
2. Damage an approved road or utility facility; or
3. Prevent emergency access in the case of medical hardship.

Removal of hazardous trees shall occur consistent with the tree conservation permitting and site restoration requirements of SMC 20.50.290 to 20.50.370.

20.20.044 R definitions.

Reasonable Use The minimum use to which a property owner is entitled under applicable State and Federal constitutional provision, including takings and substantive due process. ~~Reasonable use shall be liberally construed to protect the constitutional rights of the applicant.~~ (Ord. 324 § 1, 2003).

Removing the last sentence will define Reasonable Use without inferring what level of direction the City should take. This is similar to definitions used by several Puget Sound jurisdictions. While not precisely defining the term "reasonable use" it infers that the concept is left to judicial decision and case law.

20.20.046 S definitions.

Streams Those areas in the City of Shoreline where <u>open</u> surface waters produce a defined channel or bed, not including irrigation ditches, canals, storm or surface water runoff devices or other entirely artificial <u>open</u> watercourses, unless they are used by salmonids or are used to convey streams naturally occurring prior to construction ~~in such watercourses~~. <u>A channel or bed need not contain water year-round, provided that there is evidence of at least intermittent flow during years of normal rain fall.</u>

The last sentence is added to improve consistency with SMC 20.80.470 that includes intermittent streams in the classification of stream types. The sentence is derivative of language used by King County, Lake Forest Park and other jurisdictions.

[All other definitions in Chapter 20.20 SMC would remain unchanged.]

Chapter 20.80
Critical Areas

Sections:

20.80.010 Purpose.

A. The purpose of this chapter is to establish supplemental standards for the protection of critical areas in compliance with the provisions of the Washington Growth Management Act of 1990 (Chapter 36.70A RCW) and consistent with the goals and policies of the Shoreline Comprehensive Plan in accordance with the procedures of Chapter 20.30 SMC.

B. By identifying and regulating development and alterations to critical areas and their buffers, it is the intent of this chapter to:

1. Protect the public from injury, loss of life, property damage or financial losses due to flooding, erosion, landslide, seismic events, soils subsidence or steep slope failure;

2. Protect unique, fragile and valuable elements of the environment;

3. Reduce cumulative adverse environmental impacts to water quality, wetlands, streams and other aquatic resources, fish and wildlife habitat, steep slopes and geologically unstable features;

4. Meet the requirements of the National Flood Insurance Program and maintain the City of Shoreline as an eligible community for Federal flood insurance benefits;

5. Ensure the long-term protection of ground and surface water quality;

6. Alert members of the public, including appraisers, assessors, owners, potential buyers, or lessees, to the development limitations of critical areas and their required buffers;

7. Serve as a basis for exercise of the City's substantive authority under the State Environmental Policy Act (SEPA) and the City's Environmental Procedures (Chapter 20.30 SMC, Subchapter 8); and comply with the requirements of the Growth Management Act (Chapter 36.70A RCW) and its implementing rules;

8. Establish standards and procedures that are intended to protect environmentally critical areas while accommodating the rights of

property owners to use their property in a reasonable manner; and

9. Provide for the management of critical areas to maintain their functions and values and to restore degraded ecosystems. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(A), 2000).

20.80.020 Critical areas maps.

A. The approximate location and extent of identified critical areas within the City's planning area are shown on the critical areas maps adopted as part of this chapter. These maps shall be used for informational purposes only to assist property owners and other interested parties. Boundaries and locations indicated on the maps are generalized. Critical areas and their buffers may occur within the City which have not previously been mapped.

B. The actual presence or absence, type, extent, boundaries, and classification of critical areas shall be identified in the field by a qualified professional, and determined by the City, according to the procedures, definitions and criteria established by this chapter. In the event of any conflict between the critical area location or designation shown on the City's maps and the criteria or standards of this chapter, the criteria and standards shall prevail.

C. The critical areas maps shall be periodically updated by the City and shall reflect any permit activity, results of special studies and reports reviewed and approved by the City, amendments to the Comprehensive Plan Environmental Element and Department identified errors and corrections. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(D), 2000. Formerly 20.80.040.).

20.80.025 Applicability.

A. Unless explicitly exempted, the provisions of this chapter shall apply to all land uses and within all zoning designation in the City of Shoreline. All persons within the City shall comply with the requirements of this chapter.

B. The City shall not approve any permit or otherwise issue any authorization to alter the condition of any land, water or vegetation or to construct or alter any structure or improvement without first assuring compliance with the requirements of this chapter.

C. Approval of a development proposal pursuant to the provisions of this chapter does not discharge the obligation of the applicant to comply with the provisions of this chapter.

D. ~~When any provisions of any other section of the City Code conflicts with this chapter or when the provisions of this chapter are in conflict, that provision which provides more protection to critical areas shall apply unless specifically provided otherwise in this chapter or unless such provision conflicts with Federal or State laws or regulations.~~

Subsection D is removed since it repeats SMC 20.80.045, which better addresses code conflicts.

~~E.~~ The provisions of this chapter shall apply to any forest practices over which the City has jurisdiction pursuant to Chapter 76.09 RCW and WAC Title 222. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(E), 2000. Formerly 20.80.050.).

20.80.030 Exemptions.

The following activities shall be exempt from the provisions of this chapter:

A. Alterations in response to emergencies which threaten the public health, safety and welfare or which pose an imminent risk of damage to private property as long as any alteration undertaken pursuant to this subsection is reported to the City

as soon as possible. Only the minimum intervention necessary to reduce the risk to public health, safety, or welfare and/or the imminent risk of damage to private property shall be authorized by this exemption. The City shall confirm that an emergency exists and determine what, if any, additional applications and/or measures shall be required to protect the environment consistent with the provisions of this chapter, and to repair any damage to a preexisting resource;

B. Public water, electric and natural gas distribution, public sewer collection, cable communications, telephone, utility and related activities undertaken pursuant to City-approved best management practices, and best available science with regard to protection of threatened and endangered species, as follows:

1. Normal and routine maintenance or repair of existing utility structures or rights-of-way;

2. Relocation of electric facilities, lines, equipment or appurtenances, not including substations, with an associated voltage of 55,000 volts or less, only when required by the City of Shoreline, which approves the new location of the facilities;

3. Replacement, operation, repair, modification or installation or construction in an improved City road right-of-way or City authorized private roadway of all electric facilities, lines, equipment or appurtenances, not including substations, with an associated voltage of 55,000 volts or less;

4. Relocation of public sewer local collection, public water local distribution, natural gas, cable communication or telephone facilities, lines, pipes, mains, equipment or appurtenances, only when required by the

City of Shoreline, which approves the new location of the facilities; and

5. Replacement, operation, repair, modification, relocations, installation or construction of public sewer local collection, public water local distribution, natural gas, cable communication or telephone facilities, lines, pipes, mains, equipment or appurtenances when such facilities are located within an improved public right-of-way or City authorized private roadway.

C. Maintenance, operation, repair, modification or replacement of publicly improved roadways and associated stormwater drainage systems as long as any such alteration does not involve the expansion of roadways or related improvements into previously unimproved rights-of-way or portions of rights-of-way;

D. Maintenance, operation or repair of publicly improved recreation areas as long as any such activity does not involve the expansion of uses and/or facilities into a previously unimproved portion of a preexisting area. Maintenance, operation and repair of publicly improved recreation areas within designated fish and wildlife habitat areas shall be permitted if all activities are performed consistent with the development standards of this chapter, best available science or adaptive management plans as recognized by the City;

~~E. Activities involving artificially created wetlands or streams intentionally created from nonwetland sites, including but not limited to grass-lined swales, irrigation and drainage ditches, detention facilities and landscape features, except wetlands, streams or swales created as mitigation or that provide or contribute to critical habitat for salmonid fishes;~~

It is unnecessary and redundant to exempt activities in artificial wetlands in this section. The definition of wetlands excludes specific types of artificial wetlands.

F. Activities affecting <u>isolated</u> Type IV wetlands which are individually smaller than 1,000 square feet and~~/or~~ cumulatively smaller than 2,500 square feet in size <u>where 80 percent or greater of the wetland area has been altered or is covered by invasives and the wetland has been determined to be of low hydraulic and habitat function</u>;

Science supports preserving wetland functions, even when they are small. If an exemption is maintained for small wetlands it should be narrowed to only include those that are isolated and provide little function.

G. Activities occurring in areas which may be considered small steep slopes (areas of 40 percent slope or greater with a vertical elevation change of up to, but not greater than 20 feet), such as berms, retaining walls, excavations and small natural slopes, and activities on steep slopes created through prior legal grading activity may be exempted based upon City review of a soils report prepared by a qualified geologist or geotechnical engineer which demonstrates that no adverse impact will result from the exemption;

<u>H. Minor conservation and enhancement of critical areas that does not alter the location, dimensions or size of the critical area or buffer, and results in improvement of the critical area functions.</u>

A new exemption is proposed to encourage conservation and enhancement activities, such as the planting of native vegetation.

<u>I. Removal of hazardous trees in accordance with SMC 20.50.310(A)(1)</u>

A new exemption borrowed from King County critical areas regulations is proposed to facilitate removal of trees that pose a clear hazard to people and/or property.

The last portion of the subsection refers back to the tree conservation permitting requirements which may require the planting of replacement trees.

<u>J. View preservation and enhancement programs may be permitted in Critical Areas and their buffers if a Critical Area Stewardship Plan is approved as a Clearing Permit under SMC 20.50.290 and 20.50.300. The Critical Area Stewardship Plan must meet all of the following criteria:</u>

1. <u>The Plan will result in no net loss of the functions and values of each critical area.</u>
2. <u>The Plan will maintain or enhance the natural hydrologic systems on the site.</u>
3. <u>The Plan will maintain, enhance or</u>

Subsection J is added to allow limited tree trimming to provide view corridors, when conducted pursuant to the City's tree conservation requirements.

restore native vegetation on the site.

4. The Plan will maintain habitat for fish and wildlife on the site and enhance the existing habitat.

The Plan may be phased. A performance bond or other acceptable security device to ensure the implementation of the plan may be required in an amount to be determined by the Director. The Director may require submittal of periodic monitoring reports as necessary to ensure that the criteria of the plan are being met. The contents of the monitoring report shall be determined by the Director, and may be subject to third party review, paid for by the applicant, at the Director's discretion.

~~H~~K. Site investigative work and studies necessary for preparing land use applications, including soils tests, water quality studies, wildlife studies and similar tests and investigations; provided, that any disturbance of the critical area shall be the minimum necessary to carry out the work or studies;

~~I~~L. Educational activities, scientific research, and outdoor recreational activities, including but not limited to interpretive field trips, bird watching, and use of existing trails for horseback riding, bicycling and hiking, that will not have an adverse effect on the critical area;

~~J~~M. Normal and routine maintenance and operation of existing landscaping and gardens provided they comply with all other regulations in this chapter;

~~K~~N. Minor activities not mentioned above and determined by the City to have minimal impacts to a critical area;

~~L~~O. Notwithstanding the exemptions provided by this section, any otherwise exempt activities occurring in or near a critical area should meet the purpose and intent of SMC 20.80.010 and should consider on-site alternatives that avoid or minimize impacts. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(G), 2000. Formerly 20.80.070.).

P. Up to six significant trees may be removed from a critical area or a critical area buffer if a Clearing Permit is approved under SMC 20.50.290 and 20.50.300 and includes sufficient mitigation so that there is no net loss of the functions and values of each type of critical area.

This would provide for removal of trees in a critical area of buffer when there is no net loss in the critical area function or values.

20.80.040 Partial exemptions.

A. The following are exempt from the provisions of this chapter except for the notice to title provisions and the flood hazard area provisions, if applicable.

1. Structural modification of, addition to, or replacement of structures, except single detached residences, in existence before November 27, 1990, which do not meet the building setback or buffer requirements for wetlands, streams or steep slope hazard areas if the modification, addition, replacement or related activity does not increase the existing building footprint of the structure lying within the above-described building setback area, sensitive area or buffer;

2. Structural modification of, addition to, or replacement of single detached residences in existence before November 27, 1990, which do not meet the building setback or buffer requirements for wetlands, streams or steep slope hazard areas if the modification, addition, replacement or related activity does not increase the existing footprint of the

residence lying within the above-described buffer or building setback area by more than 750 square feet over that existing before November 27, 1990, and no portion of the modification, addition or replacement is located closer to the critical area or, if the existing residence is within the critical area, extend farther into the critical area; and

3. Maintenance or repair of structures which do not meet the development standards of this chapter for landslide or seismic areas if the maintenance or repair does not increase the footprint of the structure and there is no increased risk to life or property as a result of the proposed maintenance or repair.

B. A permit or approval sought as part of a development proposal for which multiple permits are required is exempt from the provisions of this chapter, except for the notice to title provisions, as applicable if:

1. The City of Shoreline has previously reviewed all critical areas on the site; and

2. There is no material change in the development proposal since the prior review; and

3. There is no new information available which may alter previous critical area review of the site or a particular critical area; and

4. The permit or approval under which the prior review was conducted has not expired or, if no expiration date, no more than five years have lapsed since the issuance of that permit or approval; and

5. The prior permit or approval, including any conditions, has been complied with. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(H), 2000. Formerly 20.80.080.).

20.80.045 Relationship to other regulations.

A. These critical area regulations shall apply as an overlay and in addition to zoning, land use and other regulations established by the City of Shoreline. In the event of any conflict between these regulations and any other regulations of the City, the regulations which provide greater protection to the environmentally critical areas shall apply.

B. Areas characterized by particular critical areas may also be subject to other regulations established by this chapter due to the overlap or multiple functions of some critical areas. Wetlands, for example, may be defined and regulated according to the provisions for fish and wildlife habitat conservation areas contained in this chapter, as well as provisions regulating wetlands. In the event of any conflict between regulations for particular critical areas in this chapter, the regulations which provide greater protection to environmentally critical areas shall apply. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(K), 2000. Formerly 20.80.110.).

20.80.050 Notice to title.

A. To inform subsequent purchasers of real property of the existence of critical areas, ~~W~~when development is permitted in an identified critical area ~~which is comprised of a regulated critical area and~~or its associated buffer, a notice to title applicable to the property shall be filed with the King County Department of Records. The notice shall state that critical areas or buffers have been identified on the property and the fact that limitations on actiions in or affecting the critical area or buffer may exist. The notice shall run with the land. This notice shall not be required

In the notice on title provisions, the distinction between subsections A and B appears to create confusion. They both seem to be requiring the designation of critical areas tracts, although B limits it to just subdivisions and binding site plans and A appears to require tracts for all development. More common with other jurisdictions, is to require a notice on title (relatively simple) for all development, and the recording of tracts on where plat drawings are being recorded. These two sections are proposed to be revised in that manner.

for development by a public agency or public or private utility when:

1. Within a recorded easement or right-of-way; or

2. On the site of a permanent public facility.

~~the area shall be placed either in a separate tract on which development is prohibited, protected by execution of an easement, dedicated to a conservation organization or land trust, or similarly preserved through a permanent protective mechanism acceptable to the City. The location and limitations associated with the critical area shall be shown on the face of the deed or plat applicable to the property and shall be recorded with the King County Department of Records.~~

B. Subdivisions, short subdivisions, development agreements, and binding site plans ~~which include critical areas or their buffers~~ shall establish a separate tract (a critical areas tract) as a permanent protective measure for wetlands, streams, fish and wildlife habitat, landslide hazard areas and their buffers. The plat or binding site plan for the project shall clearly depict the critical areas tract, and shall include all of the subject critical area and any required buffer, as well as additional lands, as determined by the developer. Restrictions to development within the critical area tract shall be clearly noted on the plat or plan. Restrictions shall be consistent with this chapter for the entire critical area tract, including any additional areas included voluntarily by the Developer. Should the critical area tract include several types of critical areas the developer may wish to establish separate critical areas tracts. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(M), 2000. Formerly 20.80.130.).

20.80.060 Permanent field marking.

A. All critical areas tracts, easements or dedications shall be clearly marked on the site using permanent markings, placed every 300 feet which include the following text:

This area has been identified as a <<INSERT TYPE OF CRITICAL AREA>> by the City of Shoreline. Activities, including clearing and grading, removal of vegetation, pruning, cutting of trees or shrubs, planting of nonnative species, and other alterations may be prohibited. Please contact the City of Shoreline Department of Development (206) 546-1811 for further information.

B. It is the responsibility of the landowner to maintain and replace if necessary all permanent field markings. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(N), 2000. Formerly 20.80.140.).

20.80.070 Alteration of critical areas.

Alteration of critical areas, including their established buffers, may only be permitted subject to the criteria in this chapter, and compliance with any Federal and/or State permits required. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 2(A), 2000. Formerly 20.80.160.).

20.80.080 Alteration or development of critical areas – Standards and criteria.

~~All impacts to critical areas functions and values shall be mitigated.~~This section applies to mitigation required with all critical areas reviews, approvals and enforcement pursuant to this Chapter. This section is supplemented with specific measures under subchapters for particular critical areas. The proponent for a project involving critical areas shall seek to avoid, minimize and mitigate the impacts to the critical areas through ~~Mitigation~~ actions ~~by an applicant or property owner shall~~that occur in the following sequence:

SMC 20.80.080 is revised to make it clear that this sets up a mitigation framework and that mitigation and protection measures are specified in the subchapters for individual critical areas. "Enforcement" is added to bring in the same considerations when we abate or mitigate a violation.

A. Avoiding the impact altogether by not taking a certain action or parts of actions;

B. Minimizing impacts by limiting the degree or magnitude of the action and its implementation;

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

D. Reducing or eliminating the impact over time through preservation and maintenance operations during the life of the action; and/or

E. Compensating for the impact by replacing or providing substitute resources or environments. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 2(B), 2000. Formerly 20.80.170.).

20.80.090 Buffer areas.

The establishment of buffer areas shall be required for all development proposals and activities in or adjacent to critical areas. The purpose of the buffer shall be to protect the integrity, function, value and resource of the subject critical area, and/or to protect life, property and resources from risks associated with development on unstable or critical lands. Buffers shall consist of an undisturbed area of native vegetation established to achieve the purpose of the buffer. If the buffer area has previously been disturbed, it shall be revegetated pursuant to an approved planting plan. Buffers shall be protected during construction by placement of a temporary barricade if determined necessary by the City, on-site notice for construction crews of the presence of the critical area, and implementation of appropriate erosion and sedimentation controls. Restrictive covenants or conservation easements may be required to preserve and protect buffer areas. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 2(C), 2000. Formerly 20.80.180.).

20.80.100 Classification and rating of critical areas.

To promote consistent application of the standards and requirements of this chapter, critical areas within the City of Shoreline shall be rated or classified according to their characteristics, function and value, and/or their sensitivity to disturbance. Classification of critical areas shall be determined by the City using the following tools:

A. Application of the criteria contained in these regulations;

B. Consideration of the technical reports submitted by qualified professionals in connection with applications subject to these regulations; and

C. Review of maps adopted pursuant to this chapter. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 2(E), 2000. Formerly 20.80.200.).

Subchapter 2. Geologic Hazard Areas

20.80.210 ~~Description~~ Designation and purpose.

A. Geologic hazard areas ~~include~~ are those lands that are affected by natural processes that make them susceptible to geologic events, such as landslides, seismic activity and severe erosion, especially bluff and ravine areas and steep slopes. Areas suseptible to one or more of the following types of hazards shall be designated as geologically hazardous areas:

1. Erosion hazard;

2. Landslide hazard;

The changes to SMC 20.80.210 are to explicitly designate those geologic hazard areas.

3. Seismic hazard;

B. The primary purpose of geologic hazard area regulations is to avoid and minimize potential impacts to life and property from geologic hazards, conserve soil resources, and minimize structural damage relating to seismic hazards. This purpose shall be accomplished through appropriate levels of study and analysis, application of sound engineering principles, and regulation or limitation of land uses, including maintenance of existing native vegetation, regulation of clearing and grading activities, and control of stormwater. (Ord. 238 Ch. VIII § 3(A), 2000).

20.80.220 Classification.

Geologic hazard areas shall be classified according to the criteria in this section as follows:

Low (class I) hazards – all areas in the City that are essentially flat – are removed to clarify that they are not regulated under this chapter.

A. **Landslide Hazard Areas.** Landslide hazard areas are classified ~~as "Class I", "Class II", "Class III" or "Class IV"~~ as follows:

~~1. Class I/Low Hazard: Areas with slopes of less than 15 percent.~~

~~2~~1. ~~Class II/~~Moderate Hazard: Areas with slopes between 15 percent and 40 percent and that are underlain by soils that consist largely of sand, gravel or glacial till.

~~3~~2. ~~Class III/~~High Hazard: Areas with slopes between 15 percent and 40 percent that are underlain by soils consisting largely of silt and clay.

~~4~~3. ~~Class IV/~~Very High Hazard: Areas with slopes steeper than 15 percent with zones of emergent water (e.g., springs or ground water seepage), areas of landslide deposits regardless of slope, and all steep slope hazard areas sloping 40 percent or steeper.

B. **Seismic Hazard Areas.** Seismic hazard areas are lands that, due to a combination of soil and ground water conditions, are subject to severe risk of ground shaking, subsidence or liquefaction of soils during earthquakes. These areas are typically underlain by soft or loose saturated soils (such as alluvium) and have a shallow ground water table.

C. **Erosion and Sedimentation Hazards.** Erosion hazard areas are lands or areas underlain by soils identified by the U.S. Department of Agriculture Natural Resources Conservation Service (formerly the Soil Conservation Service) as having "severe" or "very severe" erosion hazards. This includes, but is not limited to, the following group of soils when they occur on slopes of 15 percent or greater: Alderwood-Kitsap (AkF), Alderwood gravely sandy loam (AgD), Kitsap silt loam (KpD), Everett (EvD) and Indianola (InD).

~~D. **Steep Slopes.** Steep slopes are those areas sloping 40 percent or steeper.~~

Steep slopes are included as Very High Landslide Hazards so it is unnecessary to repeat them here.

(Ord. 238 Ch. VIII § 3(B), 2000).

20.80.230 Required buffer areas.

A. Required buffer widths for geologic hazard areas shall reflect the sensitivity of the hazard area and the risks associated with development and, in those circumstances permitted by these regulations, the type and intensity of human activity and site design proposed to be conducted on or near the area. ~~Buffers or setbacks shall be~~

Buffer requirements are spelled out in subsection C, below.

~~measured from the top and toe of the slope and along the sides of the slope.~~

B. In determining the appropriate buffer width, the City shall consider the recommendations contained in ~~any technical~~a geotechnical report required by these regulations and prepared by a qualified consultant.

C. For landslide hazard areas, the standard buffer shall be 50 feet from all edges of the landslide hazard area. Larger buffers may be required as needed to eliminate or minimize the risk to people and property based on a geotechnical report prepared by a qualified professional.

Subsection C is proposed to provide a specific buffer distance for landslide hazards. Review of science indicates that landslide hazards should be avoided or mitigated through engineering. While science does not provide a specific buffer distance, a 50-foot buffer is commonly required by other jurisdictions as a standard to prevent impacts in most situations. The regulations are also changed to apply the buffer to the sides of the hazard, in addition to top and toe of slope, to acknowledge that all areas adjacent to hazards are at risk.

~~C~~D. Landslide hazard area ~~B~~buffers may be reduced to a minimum of 15 feet when technical studies conclusively demonstrate that the reduction will adequately protect people and the proposed and surrounding development from the ~~critical~~ landslide hazard.

~~D~~E. ~~Critical l~~Landslide hazard areas and their associated buffers shall be placed either in a separate tract on which development is prohibited, protected by execution of an easement, dedicated to a conservation organization or land trust, or similarly preserved through a permanent protective mechanism acceptable to the City. The location and limitations associated with the critical landslide hazard and its buffer shall be shown on the face of the deed or plat applicable to the property and shall be recorded with the King County Department of Records and Elections. (Ord. 238 Ch. VIII § 3(C), 2000).

20.80.240 Alteration.

A. The City shall approve, condition or deny proposals in a geologic hazard area as appropriate based upon the effective mitigation of

risks posed to property, health and safety. The objective of mitigation measures shall be to render a site containing a geologic hazard as safe as one not containing such hazard. Conditions may include limitations of proposed uses, modification of density, alteration of site layout and other appropriate changes to the proposal. Where potential impacts cannot be effectively mitigated~~, or where the~~ to eliminate a significant risk to public health, safety and ~~welfare, public or private~~ property, or important natural resources ~~is significant notwithstanding mitigation~~, the proposal shall be denied.

B. **~~Class IV~~Very High Landslide Hazard Areas.** Development shall be prohibited in ~~Class IV (~~very high~~)~~ landslide hazards areas or their buffers except as granted by a critical areas special use permit or a critical areas reasonable use permit.

The class numbering provides little value. Therefore it is proposed to use the descriptive names – "Very High" and "Moderate and High" for the hazard areas.

C. **~~Class II, III, IV~~Moderate and High Landslide Hazards.** Alterations proposed to ~~Class II, III, and Iv~~moderate and high Landslide Hazards or their buffers shall be evaluated by a qualified professional through the preparation of the geotechnical report. However, for proposals that include no development, construction, or impervious surfaces, the City, in its sole discretion, may waive the requirement for a geotechnical report. The recommendations contained within the geotechnical report shall be incorporated into the alteration of the landslide hazard area or their buffers.

The geotechnical engineer and/or geologist preparing the report shall provide asssurances that the risk of damage from the proposal, both on-site and off-site, are minimal subject to the conditions set forth in the report, that the proposal will not increase the risk of occurrence of the potential landslide hazard, and that measures to eliminate or reduce risks have been incorporated into the report's recommendations.

Requirements of the geotechnical report in subsection F have been incorporated into the landslide hazard section.

D. ~~Critical~~ **Seismic Hazard Areas.**

The code regulates all seismic hazard areas, so the qualifier "critical" is unnecessary.

1. For one-story and two-story residential structures, a qualified professional shall conduct an evaluation of site response and liquefaction potential based on the performance of similar structures with similar foundation conditions; or

2. For all other proposals, the applicant shall conduct an evaluation of site response and liquefaction potential including sufficient subsurface exploration to determine the site coefficient for use in the static lateral force procedure described in the Uniform Building Code.

E. **Erosion Hazard Areas.**

1. Up to 1,500 square feet may be cleared on any lot in an erosion hazard area without a permit, unless the site also contains another type of critical area or any other threshold contained in SMC 20.50.320 would be exceeded.

2. All development proposals on sites containing erosion hazard areas shall include a temporary erosion and sediment control plan consistent with the requirements of the adopted surface water design manual and a revegetation plan to ensure permanent stabilization of the site. Specific requirements for revegetation plans shall be determined on a case-by-case basis during permit review and administrative guidelines shall be developed by the Department. Critical area revegetation plans may be combined with required landscape, tree retention, and/or other critical area mitigation plans as appropriate.

3. All subdivisions, short subdivisions or binding site plans on sites with erosion hazard areas shall comply with the following additional requirements:

   a. Except as provided in this section, existing vegetation shall be retained on all lots until building permits are approved for development on individual lots;

   b. If any vegetation on the lots is damaged or removed during construction of the subdivision infrastructure, the applicant shall be required to implement the revegetation plan in those areas that have been impacted prior to final inspection of the site development permit or the issuance of any building permit for the subject property;

   c. Clearing of vegetation on individual lots may be allowed prior to building permit approval if the City of Shoreline determines that:

      i. Such clearing is a necessary part of a large scale grading plan,

      ii. It is not feasible to perform such grading on an individual lot basis, and

      iii. Drainage from the graded area will meet water quality standards to be established by administrative rules.

4. Where the City of Shoreline determines that erosion from a development site poses a significant risk of damage to downstream receiving water, the applicant shall be required to provide regular monitoring of surface water discharge from the site. If the project does not meet water quality

standards established by law or administrative rules, the City may suspend further development work on the site until such standards are met.

5. The City may require additional mitigation measures in erosion hazard areas, including, but not limited to, the restriction of major soil disturbing activities associated with site development between October 15th and April 15th to meet the stated purpose contained in SMC 20.80.010 and SMC 20.80.210.

6. The use of hazardous substances, pesticides and fertilizers in erosion hazard areas may be prohibited by the City of Shoreline.

~~F. When development is permitted in geologic hazard areas by these regulations, an applicant and/or its qualified consultant shall provide assurances which include the following:~~

~~1. A report from the geotechnical engineer and/or geologist who prepared the studies required by these regulations that the risk of damage from the proposal, both on-site and off-site, are minimal subject to the conditions set forth in the report, that the proposal will not increase the risk of occurrence of the potential geologic hazard, and that measures to eliminate or reduce risks have been incorporated into the report's recommendations; and~~

~~2. A legal statement which shall be recorded and noted on the face of the deed or plat, executed in a form satisfactory to the City, that characterizes the site as being located within a geologic hazard area, and states that there may or may not be risks associated with the development of the site.~~

Subsection 1 is proposed to be combined with subsection C for landslide hazard areas, above.

Subsection 2 is covered by the notice to title provisions of SMC 20.80.050.

Subsection 3 is added to the mitigation standards listed below in SMC 20.80.250.

~~In addition the provisions for permanent field marking (SMC 20.80.140) may apply; and~~

~~3. Posting of a bond, guarantee or other assurance device approved by the City to cover the cost of monitoring, maintenance and any necessary corrective actions. (Ord. 352 § 1, 2004; Ord. 324 § 1, 2003; Ord. 299 § 1, 2002; Ord. 238 Ch. VIII § 3(D), 2000).~~

20.80.250 Mitigation performance standards and requirements.

The following performance standards shall apply to any mitigations for development proposed within geologic hazard areas located within the City:

A. Relevant performance standards from SMC 20.80.080, 20.80.300, 20.80.350 and 20.80.500 as determined by the City, shall be incorporated into mitigation plans.

B. The following additional performance standards shall be reflected in proposals within geologic hazard areas:

1. Geotechnical studies shall be prepared by a qualified consultant to identify and evaluate potential hazards and to formulate mitigation measures.

2. Construction methods will reduce or not adversely affect geologic hazards.

3. Site planning should minimize disruption of existing topography and natural vegetation.

4. Impervious surface coverage should be minimized.

5. Disturbed areas should be replanted as soon as feasible pursuant to an approved landscape plan.

6. Clearing and grading regulations as set forth by the City shall be followed.

7. The use of retaining walls that allow maintenance of existing natural slope areas are preferred over graded slopes.

8. Temporary erosion and sedimentation controls, pursuant to an approved plan, shall be implemented during construction.

9. Undevelopable geologic hazard areas larger than one-half acre shall be placed in a separate tract, provided this requirement does not make the lot nonconforming.

10. A monitoring program shall be prepared for construction activities permitted in geologic hazard areas.

11. A bond, guarantee or other assurance device approved by the City shall be posted to cover the cost of monitoring, maintenance and any necessary corrective actions.

~~11~~12. Development shall not increase instability or create a hazard to the site or adjacent properties, or result in a significant increase in sedimentation or erosion. (Ord. 238 Ch. VIII § 3(E), 2000).

Borrowed from subsection F in SMC 20.80.240, above.

Subchapter 3. Fish and Wildlife Habitat Conservation Areas

20.80.260 ~~Description~~ Designation and purpose.

A. Fish and wildlife habitat conservation areas include nesting and breeding grounds for State and Federal threatened, endangered, critical or priority species ~~as identified~~listed by the Washington State Department of Fish and Wildlife, including corridors which connect priority habitat, and those areas which provide habitat for species of local significance which have been or may be identified in the City of Shoreline Comprehensive Plan.

"Critical" added to be consistent with SMC 20.80.270. "Listed" added to clarify that it applies to species formally listed by the agencies.

B. The purpose of fish and wildlife habitat conservation areas shall be to provide opportunities for food, cover, nesting, breeding and movement for fish and wildlife within the City; maintain and promote diversity of species and habitat within the City; coordinate habitat protection with elements of the City's established open space corridors wherever possible; help to maintain air and water quality; control erosion; provide areas for recreation, education and scientific study and aesthetic appreciation; and contribute to the established character of the City.

C. The City of Shoreline has given special consideration to the identification and regulation of fish and wildlife habitat conservation areas that support anadromous fisheries in order to preserve and enhance species which are or may be listed as endangered, threatened or priority species by State and Federal agencies. (Ord. 238 Ch. VIII § 4(A), 2000).

20.80.270 Classification.

Fish and wildlife habitat areas are those areas designated by the City based ~~that meet~~ on any of the following criteria, review of the best available science, and input from Washington Department of Fish and Wildlife, Washington Department of Ecology and other agencies:

The classification of habitat areas is proposed to be revised to make it clear that these are areas the City designates and to include best available science and the state agencies in the designation process.

A. The ~~documented~~ presence of species proposed or listed by the Federal government or State of Washington as endangered, threatened, critical, or priority documented by best available science; or

B. The presence of heron rookeries or priority raptor nesting trees; or

C. Type I wetlands, as defined in these regulations; or

D. Type I streams, as defined in these regulations; or

E. Those areas which include the presence of locally significant species, if the City has designated such species. (Ord. 238 Ch. VIII § 4(B), 2000).

20.80.280 Required buffer areas.

A. Buffer widths for fish and wildlife habitat areas shall be based on consideration of the following factors: species specific recommendations of the Washington State Department of Wildlife; recommendations contained in a habitat management plan submitted by a qualified consultant; and the nature and intensity of land uses and activities occurring on the and adjacent to the site.

B. Low impact uses and activities which are consistent with the purpose and function of the habitat buffer and do not detract from its integrity may be permitted within the buffer depending on the sensitivity of the habitat area. Examples of uses and activities which may be permitted in appropriate cases include trails that are pervious, viewing platforms, stormwater management facilities such as grass-lined swales, utility easements and other similar uses and activities; provided, that any impacts to the buffer resulting from such permitted facilities shall be fully mitigated.

C. Fish and wildlife habitat conservation areas and their associated buffers shall be placed either in a separate tract on which development is prohibited, protected by execution of an easement, dedicated to a conservation organization or land trust, or similarly preserved through a permanent protective mechanism acceptable to the City. The location and limitations associated with the critical habitat and its buffer shall be shown on the face of the deed or plat applicable to the property and shall be recorded with the King County Department of Records and Elections. (Ord. 238 Ch. VIII § 4(C), 2000).

20.80.290 Alteration.

A. Alterations of fish and wildlife habitat conservation areas shall be avoided, subject to the reasonable use provision section (SMC 20.30.336) or special use permit section (SMC 20.30.333).

B. Any proposed alterations permitted, consistent with special use or reasonable use review, to fish and wildlife habitat conservation area shall require the preparation of a habitat management plan, consistent with the requirements of the Washington State Department of Fish and Wildlife Priority Habitat Program. The habitat management plan shall be prepared by a qualified consultant and reviewed and approved by the City. (Ord. 238 Ch. VIII § 4(D), 2000).

20.80.300 Mitigation performance standards and requirements.

A. Relevant performance standards for other critical areas (such as wetlands and streams) that may be located within the fish and wildlife habitat conservation area, as determined by the City, shall be incorporated into mitigation plans.

B. The following additional mitigation measures shall be reflected in fish and wildlife habitat conservation area mitigation planning:

1. The maintenance and protection of habitat values shall be considered a priority in site planning and design.

2. Buildings and structures shall be located in a manner that preserves and minimizes adverse impacts to important habitat areas. This may include clustering buildings and locating fences outside of habitat areas.

3. Retained habitat shall be integrated into open space and landscaping.

4. Where possible, habitat and vegetated open space shall be consolidated in contiguous blocks.

5. Habitat shall be located contiguous to other habitat areas, open space or landscaped areas both on and off site to contribute to a continuous system or corridor that provides connections to adjacent habitat areas.

6. Native species shall be used in any landscaping of disturbed or undeveloped areas and in any enhancement of habitat or buffers.

7. The heterogeneity and structural diversity of vegetation shall be emphasized in landscaping.

8. Significant trees, preferably in groups, shall be preserved, consistent with the requirements of Chapter 20.50 SMC, Subchapter 5, Tree Conservation, Land Clearing and Site Grading, and with the objectives found in these standards. (Ord. 238 Ch. VIII § 4(E), 2000).

Subchapter 4. Wetlands

20.80.310 ~~Description~~ Designation and purpose.

A. Wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevelance of vegetation typically adapted for life in saturated soil conditions, as defined by the Washington State Wetlands Idenfication and Delineation Manual (Department of Ecology Publication #96-94). Wetlands generally include swamps, marshes, bogs, and similar areas.

The definition of wetlands is added to make it clear what areas are regulated by the following code sections. The definition is consistent with the GMA (RCW 36.70A.030(20)) definition of wetlands and eliminates the need for subsection E under Classification that attempts to address artificially created wetlands.

Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands.

B. Wetlands help to maintain water quality; store and convey stormwater and floodwater; recharge ground water; provide important fish and wildlife habitat; and serve as areas for recreation, education, scientific study and aesthetic appreciation.

~~B~~C. The City's overall goal shall be to achieve no net loss of wetlands. This goal shall be implemented through retention of the function, value and acreage of wetlands within the City. Wetland buffers serve to moderate runoff volume and flow rates; reduce sediment, chemical nutrient and toxic pollutants; provide shading to maintain desirable water temperatures; provide habitat for wildlife; protect wetland resources from harmful

intrusion; and generally preserve the ecological integrity of the wetland area.

~~C~~D. The primary purpose of the wetland regulations is to avoid detrimental wetland impacts and achieve a goal of no net loss of wetland function, value and acreage; and where possible enhance and restore wetlands. (Ord. 238 Ch. VIII § 5(A), 2000).

20.80.320 Classification.

Wetlands, as defined by this section, shall be ~~designated Type I, Type II, Type III, Type IV and artificial~~classified according to the following criteria:

A. "Type I wetlands" are those wetlands which meet any of the following criteria:

Revised to be consistent with SMC 20.80.260.

1. The presence of species proposed or listed by the Federal government or State of Washington as endangered, threatened, critical or ~~monitored~~priority, or the presence of critical or outstanding actual or potential habitat for those species; or

2. Wetlands having 40 percent to 60 percent open water in dispersed patches with two or more wetland subclasses of vegetation; or

3. High quality examples of a native wetland listed in the terrestrial and/or aquatic ecosystem elements of the Washington Natural Heritage Plan that are presently identified as such or are determined to be of Heritage quality by the Department of Natural Resources; or

4. The presence of plant associations of infrequent occurrence. These include, but are not limited to, plant associations found in bogs and in wetlands with a coniferous

forested wetland class or subclass occurring on organic soils.

B. "Type II wetlands" are those wetlands which are not Type I wetlands and meet any of the following criteria:

1. Wetlands greater than one acre (43,560 sq. ft.) in size;

2. Wetlands equal to or less than one acre (43,560 sq. ft.) but greater than one-half acre (21,780 sq.ft.) in size and have three or more wetland classes; or

3. Wetlands equal to or less than one acre (43,560 sq. ft.) but greater than one-half acre (21,780 sq.ft.) in size, and have a forested wetland class or subclasses.

C. "Type III wetlands" are those wetlands that are equal to or less than one acre in size and that have one or two wetland classes and are not rated as Type IV wetlands, or wetlands less than one-half acre in size having either three wetlands classes or a forested wetland class or subclass.

D. "Type IV wetlands" are those wetlands that are equal to or less than 2,500 square feet, hydrologically isolated and have only one, unforested, wetland class.

~~E. "Artificially created wetlands" are those landscape features, ponds and stormwater detention facilities purposefully or accidentally created. Artificially created wetlands do not include wetlands created as mitigation or wetlands modified for approved land use activities. Purposeful or accidental creation must be demonstrated to the City through documentation, photographs, statements or other evidence.~~

Artificially created wetlands are addressed by the definition of wetlands under GMA and as stated above.

~~Artificial wetlands intentionally created from nonwetland sites for the purposes of wetland mitigation are regulated under this subchapter.~~ (Ord. 238 Ch. VIII § 5(B), 2000).

20.80.330 Required buffer areas.

A. Required wetland buffer widths shall reflect the sensitivity of the area and resource or the risks associated with development and, in those circumstances permitted by these regulations, the type and intensity of human activity and site design proposed to be conducted on or near the critical area. Wetland buffers shall be measured from the wetland edge as delineated and marked in the field using the 1987 Department of Ecology Wetland Manual or adopted successor.

B. Wetland buffers shall be established as follows:

Table 20.80.330B

Wetland Type	~~Maximum~~ Standard Buffer Width (ft)	Minimum Buffer Width (ft)
Type I	150	~~100~~115
Type II	~~100~~115	~~50~~75
Type III	~~50~~65	~~25~~35
Type IV	~~10~~35	~~10~~25

~~D~~C. The ~~maximum~~ standard buffer width shall be established, provided that the buffer may be reduced to the minimum buffer listed above if ~~unless~~ the applicant can demonstrate that a smaller area is adequate to protect the wetland functions and ~~one~~ or both of the following:

Review of science indicates that larger buffers tend to provide greater protection and that very small buffers provide only minimal protective function. Therefore it is proposed to increase several of the buffers and to align them with the buffers for streams to increase consistency. Buffer distances are based in part on the WRIA 8 recommendations.

The following language is revised for clarity and to state that a reduced buffer must protect the wetland functions.

1. The proposed use and~~/or~~ activities are considered low impact, and may include the following:

   a. A site layout with no parking, outdoor storage, or use of machinery;

   b. The proposed use does not involve usage or storage of chemicals; and~~/or~~

   c. Passive areas are located adjacent to the subject buffer; and~~/or~~

   d. Both the wetland and its buffer are incorporated into the site design in a manner which eliminates the risk of adverse impact on the subject critical area.

2. Wetland and buffer enhancement is implemented that will result in equal or greater wetland functions. This includes but is not limited to the following:

   a. Enhancement of fish and wildlife habitat by incorporating structures that are likely to be used by wildlife, including wood duck houses, bat boxes, nesting platforms, snags, rootwads/stumps, birdhouses, and heron nesting areas.

   b. Planting native vegetation that would increase value for fish and wildlife habitat, improve water quality, or provide aesthetic/recreational value.

This revision is to state that mitigation must not only be provided, but must at least maintain the wetland functions to ensure that mitigation fully offsets impacts.

D. When a wetland has salmonid fish use consistent with SMC 20.80.470, the corresponding wetland or stream buffer, whichever is greater, shall be established.

Subsection D is proposed to ensure that a buffer protects fish habitat when such habitat is part of a wetland.

~~C~~E. ~~Applicants may choose to establish additional protections beyond the maximum.~~ The City may extend the width of the buffer on the basis of site-specific analysis when necessary to achieve the goals of this subchapter.

The applicant's choice to expand protection is a given and not a regulation.

~~E~~F. Wetland buffer widths may be modified by averaging buffer widths as set forth herein. Buffer width averaging shall be allowed only where the applicant demonstrates to the City:

~~that the wetland contains variations in sensitivity due to existing physical characteristics; that lower intensity land uses would be located adjacent to areas where buffer width is reduced;~~

The subsection on wetland buffer averaging is outlined to make it easier to follow the specific criteria. The criteria are revised to be more in line with the code adopted by King County following best available science review. The "sensitivity" statement is rephrased at the end of the subsection to make it clearer how sensitivity relates to buffer averaging.

1. ~~that width averaging will not adversely impact the wetland functional values~~The ecological structure and function of the buffer after averaging is equivalent to or greater than the structure and function before averaging;

2. ~~and t~~That the total area contained within the buffer after averaging is no less than that contained within the standard buffer prior to averaging.

3. Buffer averaging ~~shall~~ will not result in a buffer width being reduced by more than 25 percent of the required buffer as set forth in Table 20.80.330B and in no case may the buffer be less than ~~10 feet in~~than the stated minimum width.

The City may require buffer averaging to be desiged to protect areas of greater sensitivity and function based on the recommendations of a wetland report prepared by a qualified professional.

F. Low impact uses and activities which are consistent with the purpose and function of the wetland buffer and do not detract from its integrity may be permitted within the buffer depending on the sensitivity of the wetland. Examples of uses and activities which may be permitted in appropriate cases include trails constructed in a manner to reduce impervious surfaces, viewing platforms, and utility easements; provided, that any impacts to the buffer resulting from such permitted activities is fully mitigated. Uses permitted within the buffer shall be located as far from the wetland as possible.

G. Stormwater management facilities, such as grass lined swales, may not be located within the minimum buffer area as set forth in Table 20.80.330B unless it is determined that the location of the facility will enhance the buffer area, and protect the wetland.

H. A regulated wetland and its associated buffer shall either be placed in a separate tract on which development is prohibited, protected by execution of an easement, dedicated to a conservation organization or land trust, or similarly preserved through a permanent protective mechanism acceptable to the City. The location and limitations associated with the wetland and its buffer shall be shown on the face of the deed or plat applicable to the property and shall be recorded with the King County Department of Records. (Ord. 238 Ch. VIII § 5(C), 2000).

20.80.340 Alteration.

A. **Type I Wetlands.** Alterations of Type I wetlands shall be prohibited subject to the reasonable use provisions and special use permit provision of this title.

B. **Type II, III and IV Wetlands.**

1. Any proposed alteration and mitigation shall comply with the mitigation performance standards and requirements of these regulations; and

2. No net loss of wetland function and value may occur; and

3. Where enhancement or replacement is proposed, ratios shall comply with the requirements of this subchapter. (Ord. 238 Ch. VIII § 5(D), 2000).

20.80.350 Mitigation performance standards and requirements.

A. **Appropriate Wetland Mitigation Sequence and Actions.** Where impacts cannot be avoided, and the applicant has exhausted feasible design alternatives, the applicant or property owner shall seek to implement other appropriate mitigation actions in compliance with the intent, standards and criteria of this section. In an individual case, these actions may include consideration of alternative site plans and layouts, reductions in the density or scope of the proposal, and/or implementation of the performance standards listed in this subchapter.

B. Impacts to wetland functions and values shall be mitigated. Mitigation actions shall be implemented in the preferred sequence: Avoidance, minimization, restoration and replacement. Proposals which include less preferred and/or compensatory mitigation shall demonstrate that:

1. All feasible and reasonable measures will be taken to reduce impacts and losses to the critical area, or to avoid impacts where avoidance is required by these regulations; and

2. The restored, created or enhanced critical area or buffer will be as available and persistent as the critical area or buffer area it replaces; and

3. In the case of wetlands and streams, no overall net loss will occur in wetland or stream functions and values.

C. **Location and Timing of Wetland Mitigation.**

1. Wetland mitigation shall be provided on-site, unless on-site mitigation is not scientifically feasible due to the physical features of the property. The burden of proof shall be on the applicant to demonstrate that mitigation cannot be provided on-site.

2. When mitigation cannot be provided on-site, mitigation shall be provided in the immediate vicinity of the permitted activity on property owned or controlled by the applicant such as an easement, provided such mitigation is beneficial to the critical area and associated resources. It is the responsibility of the applicant to obtain title to off-site mitigation areas.

3. In-kind mitigation shall be provided except when the applicant demonstrates and the City concurs that greater functional and habitat value can be achieved through out-of-kind mitigation.

4. Only when it is determined by the City that subsections (C)(1), (2), and (3) of this section are inappropriate and impractical shall off-site, out-of-kind mitigation be considered.

5. When wetland mitigation is permitted by these regulations on-site or off-site, the mitigation project shall occur near an adequate water supply (river, stream, ground water) with a hydrologic connection to the proposed wetland mitigation area to ensure successful development or restoration.

6. Any agreed upon mitigation proposal shall be completed prior to project construction, unless a phased schedule that assures completion concurrent with project construction, has been approved by the City.

7. Wetland acreage replacement ratios shall be as specified in this section.

8. When wetland mitigation is permitted by these regulations, native plant materials salvaged from the original wetland area shall be utilized to the maximum extent possible.

D. **Wetland Replacement Ratios.**

1. Where wetland alterations are permitted by the City, the applicant shall restore or create areas of wetlands in order to compensate for wetland losses. Equivalent areas shall be determined according to acreage, function, type, location, timing factors and projected success of restoration or creation.

2. When creating or enhancing wetlands, the following acreage replacement ratios shall be used:

Table 20.80.350D

Wetland Type	Wetland Creation Replacement Ratio (Area)	Wetland Enhancement Ratio (Area)
Type I	6:1	~~2~~16:1
Type II	~~2~~3:1	~~1~~12:1
Type III	2:1	~~1~~8:1
Type IV	1. ~~2~~5:1	~~1~~6:1

The wetland replacement and enhancement ratios are proposed to be increased consistent with Ecology's recommendations (publication 04-06-024, Appendix 8-C).

The Department shall have discretion to increase these standards where mitigation is to occur off-site or in other appropriate circumstances based on the recommendations of a wetlands report that includes best available science and is prepared by a qualified professional.

3. Enhanced wetlands shall have higher wetland values and functions than the altered wetland. The values and functions transferred shall be of equal or greater quality to assure no net loss of wetland values and functions.

4. Enhanced and created wetlands shall be appropriately classified and buffered.

5. An enhanced or created wetland and its associated buffer shall be placed either in a separate tract on which development is prohibited, protected by execution of an easement, dedicated to a conservation organization or land trust, or similarly preserved through a permanent protective mechanism acceptable to the City and shall be recorded with the King County Department of Records.

E. **Wetlands Performance Standards.** The performance standards in this section shall be incorporated into mitigation plans submitted to the City for impacts to critical areas. In addition, the City may prepare a technical manual which includes guidelines and requirements for report preparation. The following performance standards shall apply to any mitigations proposed within Type I, Type II, Type III and Type IV wetlands and their buffers.

1. Plants indigenous to the region (not introduced or foreign species) shall be used.

2. Plant selection shall be consistent with the existing or projected hydrologic regime, including base water levels and stormwater event fluctuations.

3. Plants should be commercially available or available from local sources.

4. Plant species high in food and cover value for fish and wildlife shall be used.

5. Mostly perennial species should be planted.

6. Committing significant areas of the site to species that have questionable potential for successful establishment shall be avoided.

7. Plant selection must be approved by a qualified consultant.

8. The following standards shall apply to wetland design and construction:

   a. Water depth shall not exceed six and one-half feet (two meters).

b. The grade or slope that water flows through the wetland shall not exceed six percent.

c. Slopes within the wetland basin and the buffer zone shall not be steeper than 3:1 (horizontal to vertical).

d. The wetland (excluding the buffer area) should not contain more than 60 percent open water as measured at the seasonal high water mark.

9. Substrate should consist of a minimum of one foot, in depth, of clean (uncontaminated with chemicals or solid/hazardous wastes) inorganic/organic materials.

10. Planting densities and placement of plants should be determined by a qualified consultant and shown on the design plans.

11. The planting plan shall be approved by the City.

12. Stockpiling should be confined to upland areas and contract specifications should limit stockpiling of earthen materials to durations in accordance with City clearing and grading standards, unless otherwise approved by the City.

13. Planting instructions shall be submitted which describe proper placement, diversity, and spacing of seeds, tubers, bulbs, rhizomes, sprigs, plugs, and transplanted stock.

14. Controlled release fertilizer shall be applied (if required) at the time of planting and

afterward only as plant conditions warrant (determined during the monitoring process).

15. An irrigation system shall be installed, if necessary, for the initial establishment period.

16. All construction specifications and methods shall be approved by a qualified consultant and the City.

17. Construction management shall be provided by a qualified consultant. On-going work on-site shall be inspected by the City.

F. **Approved Wetland Mitigation Projects – Signature.** On completion of construction, any approved mitigation project shall be signed off by the applicant's qualified consultant and approved by the City. Signature of the qualified consultant and approval by the City will indicate that the construction has been completed as planned.

G. **Monitoring Program and Contingency Plan.**

1. A monitoring program shall be implemented by the applicant to determine the success of the mitigation project and any necessary corrective actions. This program shall determine if the original goals and objectives are being met.

2. A contingency plan shall be established for indemnity in the event that the mitigation project is inadequate or fails. A performance and maintenance bond or other acceptable ~~security device~~financial guarantee is required to ensure the applicant's compliance with the terms of the mitigation agreement. The amount of the performance and maintenance bond shall equal 125

percent of the cost of the mitigation project for a minimum of five years. The bond may be reduced in proportion to work successfully completed over the period of the bond. The bonding period shall coincide with the monitoring period.

3. Monitoring programs prepared to comply with this section shall reflect the following guidelines:

   a. Scientific procedures shall be used to establish the success or failure of the project.

   b. For vegetation determinations, permanent sampling points shall be established.

   c. Vegetative success shall, at a minimum, equal 80 percent survival of planted trees and shrubs and 80 percent cover of desirable understory or emergent plant species at the end of the required monitoring period. Additional standards for vegetative success, including (but not limited to) minimum survival standards following the first growing season, may be required after consideration of a report prepared by a qualified consultant.

   d. Monitoring reports on the current status of the mitigation project shall be submitted to the City. The reports are to be prepared by a qualified consultant and reviewed by the City or a consultant retained by the City and should include monitoring information on wildlife, vegetation, water quality, water flow, stormwater storage and conveyance, and existing or potential degradation, as applicable, and shall be produced on the

following schedule: at the time of construction; 30 days after planting; early in the growing season of the first year; at the end of the growing season of the first year; twice during the second year; and annually thereafter.

e. Monitoring programs shall be established for a minimum of five years.

f. If necessary, failures in the mitigation project shall be corrected.

g. Dead or undesirable vegetation shall be replaced with appropriate plantings.

h. Damage caused by erosion, settling, or other geomorphological processes shall be repaired.

i. The mitigation project shall be re-designed (if necessary) and the new design shall be implemented and monitored, as is subsection (G)(3)(d) of this section.

j. Correction procedures shall be approved by a qualified consultant and the City. (Ord. 238 Ch. VIII § 5(E), 2000).

Subchapter 5. Flood Hazard Areas

20.80.360 Description and purpose.

A. A flood hazard area consists of the following components: floodplain; flood fringe; zero-rise floodway; and Federal Emergency Management Agency (FEMA) floodway.

B. It is the purpose of these regulations to ensure that the City of Shoreline meets the requirements of the National Flood Insurance Program and maintains the City as an eligible community for Federal flood insurance benefits. (Ord. 238 Ch. VIII § 6(A), 2000).

C. A tsunami hazard area may be designated as a flood hazard area by the Federal or State Government.

20.80.370 Classification.

Flood hazard areas shall be determined after obtaining, reviewing and utilizing base flood elevations and available floodway data for a flood having a one percent chance of being equaled or exceeded in any given year, often referred to as the "100-year flood." The base flood is determined for existing conditions, and is shown on Flood Insurance Rate Maps for King County (FIRM) and incorporated areas, current version; or mapped on the King County Sensitive Areas Folio, unless a more complete basin plan including projected flows under future developed conditions has been completed and adopted by the City of Shoreline, in which case these future flow projections shall be used. In areas where the flood insurance study for the City includes detailed base flood calculations, those calculations may be used. (Ord. 238 Ch. VIII § 6(B), 2000).

20.80.380 Flood fringe – Development standards and permitted alterations.

A. Development proposals shall not reduce the effective base flood storage volume of the floodplain. Grading or other activity which would reduce the effective storage volume shall be mitigated by creating compensatory storage on the site or off the site if legal arrangements can be made to assure that the effective compensatory storage volume will be preserved over time.

B. No structure shall be allowed which would be at risk due to stream bank destabilization including, but not limited to, that associated with channel relocation or meandering.

C. All elevated construction shall be designed and certified by a professional structural engineer licensed by the State of Washington and the design shall be approved by the City prior to construction.

D. Subdivisions, short subdivisions, lot line adjustments and binding site plans shall meet the following requirements:

1. New building lots shall contain no less than 5,000 square feet of buildable land outside the zero-rise floodway, and building setback areas shall be shown on the face of the plat to restrict permanent structures to this buildable area;

2. All utilities and facilities such as stormwater facilities, sewer, gas, electrical and water systems shall be located and constructed consistent with the standards and requirements of this section;

3. Base flood data and flood hazard notes shall be shown on the face of the recorded subdivision, short subdivision, lot line adjustment or binding site plan including, but not limited to, the base flood elevation, required flood protection elevations and the boundaries of the floodplain and the zero-rise floodway, if determined; and

4. The following notice shall also be shown on the face of the recorded subdivision, short subdivision, lot line adjustment or binding site plan for all affected lots:

NOTICE
Lots and structures located within Flood Hazard Areas may be inaccessible by emergency vehicles during flood events. Residents and property owners should take appropriate advance precautions.

E. New residential structures and improvements that include the creation of new impervious surfaces associated with existing residential structures shall meet the following requirements:

1. The lowest floor shall be elevated to the flood protection elevation;

2. Portions of a structure which are below the lowest floor area shall not be fully enclosed. The areas and rooms below the lowest floor shall be designed to automatically equalize hydrostatic and hydrodynamic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for satisfying this requirement shall meet or exceed the following requirements:

   a. A minimum of two openings on opposite walls having a total open 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 coverings or devices if they permit the unrestricted entry and exit of floodwaters;

3. Materials and methods which are resistant to and minimize flood damage shall be used; and

4. All electrical, heating, ventilation, plumbing, air conditioning equipment and other utility and service facilities shall be floodproofed to or elevated above the flood protection elevation.

F. New nonresidential structures and substantial improvements of existing nonresidential structures shall meet the following requirements:

1. **Elevation.**

a. Requirements for residential structures contained in subsection (E)(1) of this section shall be met; or

b. The structure shall be floodproofed to the flood protection elevation and shall meet the following requirements:

i. The applicant shall provide certification by a professional civil or structural engineer licensed by the State of Washington that the floodproofing methods are adequate to withstand the flood depths, pressures, velocities, impacts, uplift forces and other factors associated with the base flood. After construction, the engineer shall certify that the permitted work conforms with the approved plans and specifications; and

ii. Approved building permits for floodproofed nonresidential structures shall contain a statement

notifying applicants that flood insurance premiums shall be based upon rates for structures which are one foot below the floodproofed level;

2. Materials and methods which are resistant to and minimize flood damage shall be used; and

3. All electrical, heating, ventilation, plumbing, air conditioning equipment and other utility and service facilities shall be floodproofed to or elevated above the flood protection elevation.

G. All new construction shall be anchored to prevent flotation, collapse or lateral movement of the structure.

H. Mobile homes and mobile home parks shall not be permitted in flood hazard areas.

I. Utilities shall meet the following requirements:

1. New and replacement utilities including, but not limited to, sewage treatment facilities shall be floodproofed to or elevated above the flood protection elevation;

2. Aboveground utility transmission lines, other than electric transmission lines, shall only be allowed for the transport of nonhazardous substances; and

3. Buried utility transmission lines transporting hazardous substances shall be installed at a minimum depth of four feet below the maximum depth of scour for the base flood, as predicted by a professional civil engineer licensed by the State of Washington, and

shall achieve sufficient negative buoyancy so that any potential for flotation or upward migration is eliminated.

J. Critical facilities may be allowed within the flood fringe of the floodplain, but only when no feasible alternative site is available. Critical facilities shall be evaluated through the conditional or special use permit process. Critical facilities constructed within the flood fringe shall have the lowest floor elevated to three or more feet above the base flood elevation. Floodproofing and sealing measures shall be taken to ensure that hazardous substances will not be displaced by or released into floodwaters. Access routes elevated to or above the base flood elevation shall be provided to all critical facilities from the nearest maintained public street or roadway.

K. Prior to approving any permit for alterations in the flood fringe, the City shall determine that all permits required by State or Federal law have been obtained. (Ord. 238 Ch. VIII § 6(C), 2000).

20.80.390 Zero-rise floodway – Development standards and permitted alterations.

A. The requirements which apply to the flood fringe shall also apply to the zero-rise floodway. The more restrictive requirements shall apply where there is a conflict.

B. A development proposal including, but not limited to, new or reconstructed structures shall not cause any increase in the base flood elevation unless the following requirements are met:

1. Amendments to the flood insurance rate map are adopted by FEMA, in accordance with 44 CFR 70, to incorporate the increase in the base flood elevation; and

2. Appropriate legal documents are prepared in which all property owners affected by the increased flood elevations consent to the impacts on their property. These documents shall be filed with the title of record for the affected properties.

C. The following are presumed to produce no increase in base flood elevation and shall not require a special study to establish this fact:

1. New residential structures outside the FEMA floodway on lots in existence before November 27, 1990, which contain less than 5,000 square feet of buildable land outside the zero-rise floodway and which have a total building footprint of all proposed structures on the lot of less than 2,000 square feet;

2. Substantial improvements of existing residential structures in the zero-rise floodway, but outside the FEMA floodway, where the footprint is not increased; or

3. Substantial improvements of existing residential structures meeting the requirements for new residential structures in this title.

D. Post or piling construction techniques which permit water flow beneath a structure shall be used.

E. All temporary structures or substances hazardous to public health, safety and welfare, except for hazardous household substances or consumer products containing hazardous substances, shall be removed from the zero-rise floodway during the flood season from September 30th to May 1st.

F. New residential structures or any structure accessory to a residential use shall meet the following requirements:

1. The structures shall be outside the FEMA floodway; or

2. The structures shall be on lots in existence before November 27, 1990, which contain less than 5,000 square feet of buildable land outside the zero-rise floodway. Structures shall be designed and situated to minimize encroachment into the zero-rise floodway.

G. Utilities may be allowed within the zero-rise floodway if the City determines that no feasible alternative site is available, subject to the requirements of this section. Construction of sewage treatment facilities shall be prohibited.

H. Critical facilities shall not be allowed within the zero-rise floodway except as provided in subsection (I) of this section.

I. Structures and installations which are dependent upon the floodway may be located in the floodway if the development proposal is approved by all agencies with jurisdiction. Such structures include, but are not limited to:

1. Dams or diversions for water supply, flood control, or fisheries enhancement;

2. Flood damage reduction facilities, such as levees and pumping stations;

3. Stream bank stabilization structures where no feasible alternative exists for protecting public or private property;

4. Stormwater conveyance facilities subject to the development standards for streams and wetlands and the surface water design manual;

5. Boat launches and related recreation structures;

6. Bridge piers and abutments; and

7. Other fisheries enhancement or stream restoration projects. (Ord. 238 Ch. VIII § 6(D), 2000).

20.80.400 FEMA floodway – Development standards and permitted alterations.

A. The requirements which apply to the zero-rise floodway shall also apply to the FEMA floodway. The more restrictive requirements shall apply where there is a conflict.

B. A development proposal including, but not limited to, new or reconstructed structures shall not cause any increase in the base flood elevation.

C. New residential or nonresidential structures shall be prohibited within the FEMA floodway.

D. Substantial improvements of existing residential structures in the FEMA floodway, meeting the requirements of WAC 173-158-070, as amended, are presumed to produce no increase in base flood elevation and shall not require a special study to establish this fact. (Ord. 238 Ch. VIII § 6(E), 2000).

20.80.410 Flood hazard areas – Certification by engineer or surveyor.

A. For all new structures or substantial improvements in a flood hazard area, the applicant shall provide

certification by a professional civil engineer or land surveyor licensed by the State of Washington of:

1. The actual as-built elevation of the lowest floor, including basement; and

2. The actual as-built elevation to which the structure is floodproofed, if applicable.

B. The engineer or surveyor shall indicate if the structure has a basement.

C. The City shall maintain the certifications required by this section for public inspection. (Ord. 238 Ch. VIII § 6(F), 2000).

Subchapter 6. Aquifer Recharge Areas

20.80.420 Description and purpose.

A. Aquifer recharge areas provide a source of potable water and contribute to stream discharge during periods of low flow. Urban-type pollutants may enter watercourse supplies through potential infiltration of pollutants through the soil to ground water aquifers.

B. The primary purpose of aquifer recharge area regulations is to protect aquifer recharge areas by providing for regulation of land use activities that pose a risk of potential aquifer contamination and to minimize impacts through the application of strict performance standards. (Ord. 238 Ch. VIII § 7(A), 2000).

20.80.430 Classification.

Aquifer recharge areas shall be classified based on the soil and ground water conditions and risks to surface water during periods of low hydrology. Classification depends on the combined effects of hydrogeological susceptibility to contamination and contaminant loading potential, and includes upland areas underlain by soils consisting largely of silt, clay or glacial till, upland areas underlain by soils consisting largely of sand and gravel, and wellhead protection areas and areas underlain by soils consisting largely of sand and gravel in which there is a predominantly downward or lateral component to ground water flow. (Ord. 238 Ch. VIII § 7(B), 2000).

20.80.440 Alteration.

The following land uses and activities shall require implementation of Best Management Practices (BMPs) as established by the Department of Ecology:

A. Land uses and activities that involve the use, storage, transport or disposal of significant quantities of chemicals, substances or materials that are toxic, dangerous or hazardous, as those terms are defined by State and Federal regulations.

B. On-site community sewage disposal systems.

C. Underground storage of chemicals.

D. Petroleum pipelines.

E. Solid waste landfills. (Ord. 238 Ch. VIII § 7(C), 2000).

20.80.450 Performance standards and requirements.

Any uses or activities located in a aquifer recharge area, as defined within this subchapter, that involve the use, storage, transport or disposal of significant quantities of chemicals, substances, or materials that

are toxic, dangerous or hazardous, as those terms are defined by State and Federal regulations, shall comply with the following additional standards:

A. Underground storage of chemicals, substances or materials that are toxic, hazardous or dangerous is discouraged.

B. Any chemicals, substances or materials that are toxic, hazardous or dangerous shall be segregated and stored in receptacles or containers that meet State and Federal standards.

C. Storage containers shall be located in a designated, secured area that is paved and able to contain leaks and spills, and shall be surrounded by a containment dike.

D. Secondary containment devices shall be constructed around storage areas to retard the spread of any spills and a monitoring system should be implemented.

E. A written operations plan shall be developed, including procedures for loading/unloading liquids and for training of employees in proper materials handling.

F. An emergency response/spill clean-up plan shall be prepared and employees properly trained in to react to accidental spills.

G. Any aboveground storage tanks shall be located within a diked containment area on an impervious surface. The tanks shall include overfill protection systems and positive controls on outlets to prevent uncontrolled discharges.

H. Development should be clustered and impervious surfaces limited where possible.

I. No waste liquids or chemicals of any kind shall be discharged to storm sewers.

J. All development shall implement Best Management Practices (BMPs) for water quality, as approved by the City, including the standards contained within the City of Shoreline Stormwater Design Manual, such as biofiltration swales and use of oil-water separators, and BMPs appropriate to the particular use proposed. (Ord. 238 Ch. VIII § 7(D), 2000).

Subchapter 7. Stream Areas

20.80.460 ~~Description~~ Designation and purpose.

A. Streams are those areas where open surface waters produce a defined channel or bed, not including irrigation ditches, canals, storm or surface water runoff devices or other entirely artificial open watercourses, unless they are used by salmonids or are used to convey streams naturally occurring prior to construction. A channel or bed need not contain water year-round, provided that there is evidence of at least intermittent flow during years of normal rain fall.

The definition of streams is added to the beginning of the streams regulations to clarify what areas the regulations apply to.

B. Stream areas and their associated buffers provide important fish and wildlife habitat and corridors; help to maintain water quality; store and convey stormwater and floodwater; recharge groundwater; and serve as areas for recreation, education and scientific study and aesthetic appreciation.

~~B~~C. The primary purpose of the stream area regulations is to avoid impacts to streams and associated riparian corridors and where possible, provide for stream enhancement and rehabilitation. (Ord. 238 Ch. VIII § 8(A), 2000).

20.80.470 Classification.

Streams shall be designated ~~Type I, Type II, Type III, and Type IV~~ according to the criteria in this section. When more than one stream type is present in short alternating segments on a subject property, it will be classified according to the stream type which is more restrictive.

A. "Type I streams" are those streams identified as "Shorelines of the State" under the City Shoreline Master Program.

~~B~~A. "Type II streams" are those ~~natural~~ streams that are ~~not Type I streams and are~~ either perennial or intermittent and have salmonid fish use~~have one of the following characteristics:~~

~~1. Salmonid fish use;~~

~~2. Potential for salmonid fish use; or~~

~~3. Significant recreational value~~.

The classification of type II streams is simplified to focus on salmonid fish use as the qualifying factor.

~~C~~B. "Type III streams" are those ~~natural~~ streams with perennial (year-round) or intermittent flow and are not used by salmonid fish ~~and have no potential to be used by salmonid fish~~.

~~D~~C. "Type IV streams" are those streams ~~and natural drainage swales~~ with perennial or intermittent flow with channel width less than two feet taken at the ordinary high water mark that are not used by salmonid fish.

D. For the purposes of this section, "salmonid fish use" and "used by salmonid fish" is presumed for:

Subsection D is proposed to clarify the term "salmonid fish use". Salmonid fish use is defined for where fish have been documented as well as where they are presumed based on passability or planned restoration.

1. Streams where naturally reoccuring use by salmonid populations has been documented by a government agency;

2. Streams that are fish passable by salmonid populations from Lake Washington or Puget Sound, as determined by a qualified professional based on review of stream flow, gradient and barriers and criteria for fish passability established by the Washington Deparment of Fish and Wildlife; and

3. Streams that are planned for restoration in a 6-year capital improvement plan adopted by a government agency that will result in a fish passable connection to Lake Washington or Puget Sound.

The Department may waive the presumption of salmonid fish use for stream segments where a qualified professional has determined there are confirmed, long term water quality parameters making the stream segment incapable of supporting fish.

~~E. "Intentionally created streams" are those manmade streams defined as such in these regulations, and do not include streams created as mitigation. Purposeful creation must be demonstrated to the City through documentation, photographs, statements and/or other evidence. Intentionally created streams may include irrigation and drainage ditches, grass-lined swales and canals. Intentionally created streams are excluded from regulation under this subchapter, except manmade streams that provide critical habitat for species of fish and wildlife that are proposed or listed by the Federal government or State of Washington as endangered, threatened, critical, or priority species. Intentionally created streams that provide documented critical habitat for these species shall be classified and treated as natural streams.~~ (Ord. 238 Ch. VIII § 8(B), 2000).

Subsection E on intentionally created streams is removed because it creates confusion and conflict with the definition of streams, which does not include artificially created watercourses (as opposed to "intentionally created" ones).

20.80.480 Required buffer areas.

A. Required buffer widths shall reflect the sensitivity of the stream type, the risks associated with development and, in those circumstances permitted by these regulations, the type and intensity of human activity and site design proposed to be conducted on or near the stream area. Stream buffers shall be measured from the ordinary high water mark (OHWM) or the top of the bank, if the OHWM can not be determined.

B. The following buffers are established for streams:

Table 20.80.480B

Stream Type	~~Maximum~~ Standard Buffer Width (ft)	Minimum Buffer Width (ft)
Type I	150	~~100~~115
Type II	~~100~~115	75
Type III	~~50~~65	~~25~~35
Type IV	~~25~~35	~~10~~25

Review of science indicates that larger buffers tend to provide greater protection and that very small buffers provide only minimal protective function. Therefore it is proposed to increase some of the buffers to be more consistent with the WRIA 8 recommendations.

The following language is revised for clarity and to state that a smaller buffer must protect the wetland functions.

C. The ~~maximum~~ standard buffer width ~~will~~ shall be established, provided that the buffer may be reduced to the minimum buffer listed above if ~~unless~~ the applicant can demonstrate that a smaller buffer is adequate to protect the stream functions and implements one or more enhancement measures to result in a net improvement to the stream and buffer. The measures determined most applicable and/or appropriate will be considered in reducing buffer requirements. These include but are not limited to:

1. Removal of fish barriers to restore accessibility to anadromous fish.

2. Enhancement of fish habitat using log structures incorporated as part of a fish habitat enhancement plan.

3. Enhancement of fish and wildlife habitat structures that are likely to be used by wildlife, including wood duck houses, bat boxes, nesting platforms, snags, rootwads/stumps, birdhouses, and heron nesting areas.

4. Additional enhancement measures may include:

   a. Planting native vegetation within the buffer area, especially vegetation that would increase value for fish and wildlife, increase stream bank or slope stability, improve water quality, or provide aesthetic/recreational value; or

   b. Creation of a surface channel where a stream was previously underground, in a culvert or pipe. Surface channels which are "daylighted" shall be located within a buffer area and shall be designed with energy dissipating functions such as meanders to reduce future erosion;

   c. Removal or modification of existing stream culverts (such as at road crossings) to improve fish passage and flow capabilities; or

   d. Upgrading of retention/detention facilities or other drainage facilities beyond required levels.

D. No structures or improvements shall be permitted within the stream buffer area, including buildings,

decks, docks, except as otherwise permitted or required under the City's adopted Shoreline Master Program, or under one of the following circumstances:

1. When the improvements are part of an approved rehabilitation or mitigation plan; or

2. For the construction of new roads and utilities, and accessory structures, when no feasible alternative location exists; or

3. The construction of trails, consistent with the following criteria:

    a. Trails should be constructed of permeable materials;

    b. Trails shall be designed in a manner that minimizes impact on the stream system;

    c. Trails shall have a maximum trail corridor width of 10 feet; and

    d. Trails should be located within the outer half of the buffer, i.e., that portion of the buffer that is farther away from the stream; or

4. The construction of footbridges; or

5. The construction and placement of informational signs or educational demonstration facilities limited to no more than one square yard surface area and four feet high, provided there is no permanent infringement on stream flow; or

6. The establishment of stormwater management facilities, such as grass lined swales, when located outside of the minimum buffer area as set forth in the Table 20.80.480B.

E. The City may extend the width of the buffer on the basis of site-specific analysis when necessary to comply with an adopted basin plan in accordance with City, County, State or Federal plans to preserve endangered or threatened species.

F. Stream buffer widths may be modified by averaging buffer widths as set forth herein. Buffer width averaging shall be allowed only where the applicant demonstrates to the City:

~~1. Buffer width averaging shall be allowed only where the applicant demonstrates to the City that the stream contains variations in sensitivity due to existing physical characteristics, that lower intensity land uses would be located adjacent to areas where buffer width is reduced,~~

1. The ecological structure and function of the buffer after averaging is equivalent to or greater than the structure and function before averaging;

2. ~~and t~~That the total area contained within the buffer after averaging is no less than that contained within the standard buffer prior to averaging.

~~2~~3. Buffer averaging shall not result in the buffer width being reduced by more than 25 percent of the required buffer as set forth in the table in subsection B of this section and in no case may the buffer be less than ~~25 feet in~~in the stated minimum width.

The subsection on stream buffer averaging is outlined to make it easier to follow the specific criteria. The criteria are revised to be more in line with the code adopted by King County following best available science review. The "sensitivity" statement is rephrased at the end of the subsection to make it clearer how sensitivity relates to buffer averaging.

The City may require buffer averaging to be desiged to protect areas of greater sensitivity and function based on the recommendations of a stream report prepared by a qualified professional.

G. Relocation of a Type I, II, III stream ~~in order to facilitate general site design~~ shall ~~not~~ be allowed~~. Relocation of these classes of streams may take place~~ only when the proposed relocation is part of an approved mitigation or rehabilitation plan, will result in equal or better habitat and water quality, and will not diminish the flow capacity of the stream.

H. Restoring piped watercourses.

1. The city encourages the opening of previously channelized/culverted streams and the rehabilitation and restoration of streams.

2. When piped watercourse sections are restored, a protective buffer shall be required of the stream section. The buffer distance shall be based on an approved restoration plan, regardless of stream classification, and shall be a minimum of 10 feet to allow for restoration and maintenance. The stream and buffer area shall include habitat improvements and measures to prevent erosion, landslide and water quality impacts. Opened channels shall be designed to support fish access, unless determine to be unfeasible by the City.

3. Removal of pipes conveying streams shall only occur when the City determines that the proposal will result in a net improvement of water quality and ecological functions and will not significantly increase the threat of erosion, flooding, slope stability or other hazards.

Subsection H is proposed to encourage watercourse restoration and to recognize that standard buffers discourage such restoration. It also establishes a review process for restoration to ensure that it doesn't result in negative impacts.

4. Where the buffer of the restored stream would extend beyond a required setback on an adjacent property, the applicant shall seek written agreement from the affected neighboring property owner.

(Ord. 299 § 1, 2002; Ord. 238 Ch. VIII § 8(C), 2000).

20.80.490 Alteration.

A. Bridges shall be used to cross Type I streams. Culverted crossings and other obstructive means of crossing Type I streams shall be prohibited.

B. Culverts are allowable only under the following circumstances:

1. Crossing of Type II, III, and IV streams;

2. When fish passage will not be impaired;

3. When the following design criteria are met:

a. Oversized culverts will be installed;

b. Culverts will include gradient controls and creation of pools within the culvert for Type II streams where appropriate; and

c. Gravel substrate will be placed in the bottom of the culvert to a minimum depth of one foot for Type II streams;

4. The applicant or successors shall, at all times, keep any culvert free of debris and sediment to allow free passage of water and, if applicable, fish.

C. The City may require that a culvert be removed from a stream as a condition of approval, unless it is demonstrated conclusively that the culvert is not detrimental to fish habitat or water quality, or removal would be detrimental to fish or wildlife habitat or water quality. (Ord. 238 Ch. VIII § 8(D), 2000).

20.80.500 Mitigation performance standards and requirements.

A. **Appropriate Stream Mitigation Sequence and Actions.** Where impacts cannot be avoided, and the applicant has exhausted feasible design alternatives, the applicant or property owner shall seek to implement other appropriate mitigation actions in compliance with the intent, standards and criteria of this section. In an individual case, these actions may include consideration of alternative site plans and layouts, reductions in the density or scope of the proposal, and/or implementation of the performance standards listed in this section.

B. Significant adverse impacts to stream area functions and values shall be mitigated. Mitigation actions shall be implemented in the preferred sequence: Avoidance, minimization, restoration and replacement. Proposals which include less preferred and/or compensatory mitigation shall demonstrate that:

1. All feasible and reasonable measures will be taken to reduce impacts and losses to the stream, or to avoid impacts where avoidance is required by these regulations; and

2. The restored, created or enhanced stream area or buffer will be available and persistent as the stream or buffer area it replaces; and

3. No overall net loss will occur in stream functions and values.

C. **Location and Timing of Stream Mitigation.**

1. Mitigation shall be provided on-site, unless on-site mitigation is not scientifically feasible due to the physical features of the property. The burden of proof shall be on the applicant to demonstrate that mitigation cannot be provided on-site.

2. When mitigation cannot be provided on-site, mitigation shall be provided in the immediate vicinity of the permitted activity on property owned or controlled by the applicant such as an easement, provided such mitigation is beneficial to the critical area and associated resources. It is the responsibility of the applicant to obtain title to off-site mitigation areas.

3. In-kind mitigation shall be provided except when the applicant demonstrates and the City concurs that greater functional and habitat value can be achieved through out-of-kind mitigation.

4. Only when it is determined by the City that subsections (B)(1), (2), and (3) of this section are inappropriate and impractical shall off-site, out-of-kind mitigation be considered.

5. When stream mitigation is permitted by these regulations on-site or off-site, the mitigation project shall occur near an adequate water supply (river, stream, ground water) with a hydrologic connection to the mitigation area to ensure successful development or restoration.

6. Any agreed upon mitigation proposal shall be completed prior to project construction, unless a phased schedule, that assures

completion concurrent with project construction, has been approved by the City.

7. Restored or created streams, where permitted by these regulations, shall be an equivalent or higher stream value or function than the altered stream.

D. The performance standards in this section and the relevant performance standards located within the wetland standards of SMC 20.80.350(E)(1) through (17) shall be incorporated into mitigation plans submitted to the City for impacts to critical areas. In addition, the City may prepare a technical manual which includes guidelines and requirements for report preparation. The performance standards shall apply to any mitigations proposed within Type I, Type II or Type III streams within the City.

E. On completion of construction, any approved mitigation project must be signed off by the applicant's qualified consultant and approved by the City. Signature of the qualified consultant and approval by the City will indicate that the construction has been completed as planned.

F. **Monitoring Program and Contingency Plan.** A monitoring program shall be implemented by the applicant to determine the success of the mitigation project and any necessary corrective actions. This program shall determine if the original goals and objectives are being met. The monitoring program will be established consistent with the guidelines contained in SMC 20.80.350(G). (Ord. 238 Ch. VIII § 8(E), 2000).

Draft Revisions

Chapter 20.50
Development Standards

Subchapter . Tree Conservation, Land Clearing and Site Grading Standards

20.50.290 Purpose.

The purpose of this subchapter is to reduce the environmental impacts of site development while promoting the reasonable use of land in the City by addressing the following:

A. Prevention of damage to property, harm to persons, and environmental impacts caused by excavations, fills, and the destabilization of soils;

B. Protection of water quality from the adverse impacts associated with erosion and sedimentation;

C. Promotion of building and site planning practices that are consistent with the City's natural topography and vegetative cover;

D. Preservation and enhancement of trees and vegetation which contribute to the visual quality and economic value of development in the City and provide continuity and screening between developments;

E. Protection of critical areas from the impacts of clearing and grading activities;

F. Conservation and restoration of trees and vegetative cover to reduce flooding, the impacts on existing drainageways, and the need for additional stormwater management facilities;

G. Protection of anadromous fish and other native animal and plant species through performance based regulation of clearing and grading;

H. Retention of tree clusters for the abatement of noise, wind protection, and mitigation of air pollution;

I. Rewarding significant tree protection efforts by granting flexibility for certain other development requirements;

J. Providing measures to protect trees that may be impacted during construction;

K. Promotion of prompt development, effective erosion control, and restoration of property following site development; and

L. Replacement of trees removed during site development in order to achieve a goal of no net loss of tree cover throughout the City over time. (Ord. 238 Ch. V § 5(A), 2000).

20.50.300 General requirements.

A. Tree cutting or removal by any means is considered a type of clearing and is regulated subject to the limitations and provisions of this subchapter.

B. All land clearing and site grading shall comply with all standards and requirements adopted by the City of Shoreline. Where a Development Code section or related manual or guide contains a provision that is more restrictive or specific than those detailed in this subchapter, the more restrictive provision shall apply.

C. **Permit Required.** No person shall conduct clearing or grading activities on a site without first obtaining the appropriate permit approved by the Director, unless specifically exempted by SMC 20.50.310.

D. When clearing or grading is planned in conjunction with a new or expanded building or complex that is not exempt from the provisions of this subchapter, all of the required application materials for approval of tree removal, clearing and rough grading of the site shall accompany the development application to allow concurrent review.

E. The Director may require the submittal of required application materials for approval of tree removal, clearing and rough grading of the site with an application for formal subdivision, short subdivision, conditional use or any other land use approval in order to meet the purpose and intent of this subchapter.

F. A clearing and grading permit shall be required if the regulated activity is not associated with another development application on the site that requires a permit.

G. No clearing shall be allowed on a site for the sake of preparing that site for sale or future development where no specific plan for future development has been submitted. The Director may issue a clearing and grading permit as part of a phased development plan where a conceptual plan for development of the property

has been submitted to the City and the owner or developer agrees to submit an application for a building permit or other site development permit in less than 12 months.

H. Replacement trees planted under the requirements of this subchapter on any parcel in the City of Shoreline may not be removed without the written approval of the Department.

I. Any disturbance to vegetation within critical areas and their corresponding buffers is subject to the procedures and standards contained within the critical areas overlay district chapter of the Shoreline Development Code, Chapter 20.80 SMC, Special Districts, in addition to the standards of this subchapter. The standards which result in the greatest protection of the critical areas shall apply. (Ord. 238 Ch. V § 5(B), 2000).

20.50.310 Exemptions from permit.

A. **Complete Exemptions.** The following activities are exempt from the provisions of this subchapter and do not require a permit:

1. Emergency situations ~~on private property~~ involving danger to life or property or substantial fire hazards. A~~ny~~ hazardous tree ~~or vegetation which is an immediate threat to public health, safety, or welfare, or property~~ may be removed without first obtaining a permit regardless of any other provision contained in this subchapter. If possible, trees should be evaluated prior to removal using the International Society of Arboriculture method, Hazard Tree Analysis for Urban Areas, in its most recent adopted form. The party removing the tree ~~will~~ shall contact the City regarding the emergency, if practicable, prior to removing the tree, and no later than one working day following the emergency. After the emergency, the

The emergency exemption is revised to require the party involved to contact the City within one day after the emergency, and to require professional evaluation and site restoration following the emergency.

The section is also changed to apply to both private and public property.

person or agency taking the action shall conduct a professional evaluation and perform site restoration consistent with SMC 20.50.330 and 20.50.360.

2. Removal of trees and/or ground cover by the City and/or utility provider in situations involving immediate danger to life or property, substantial fire hazards, or interruption of services provided by a utility. The City retains the right to dispute the emergency and require that the party obtain a clearing permit and/or require that replacement trees be replanted as mitigation.

3. Installation and regular maintenance of public utilities, under direction of the Director, except substation construction and installation or construction of utilities in parks or environmentally sensitive areas.

4. Cemetery graves involving less than 50 cubic yards of excavation, and related fill per each cemetery plot.

5. Tree and vegetation removal in accordance with an approved Critical Area Stewardship Plan.

6. Removal of trees from property zoned RB & I, CB & NCBD and NB &O, unless within a Critical Area or Critical Area Buffer.

This amendment would exclude commercial zoning districts from the provisions of tree conservation.

B. **Partial Exemptions.** With the exception of the general requirements listed in SMC 20.50.300, the following are exempt from the provisions of this subchapter, provided the development activity does not occur in a critical area or critical area buffer. For those exemptions that refer to size or number, the thresholds are cumulative during a 36-month period for any given parcel:

1. The removal of up to six significant trees (see Chapter 20.20 SMC, Definitions) and associated removal of understory vegetation from any property.

2. Landscape maintenance and alterations on any property that involves the clearing of less than 3,000 square feet, or less than 1,500 square feet if located in a critical drainage area, provided the tree removal threshold listed above is not exceeded. (Ord. 238 Ch. V § 5(C), 2000).

20.50.320 Specific activities subject to the provisions of this subchapter.

All activities listed below must comply with the provisions of this subchapter. For those exemptions that refer to size or number, the thresholds are cumulative during a 36-month period for any given parcel:

A. The construction of new residential, commercial, institutional, or industrial structures or additions.

B. Earthwork of 50 cubic yards or more. This means any activity which moves 50 cubic yards of earth, whether the material is excavated or filled and whether the material is brought into the site, removed from the site, or moved around on the site.

C. Clearing of 3,000 square feet of land area or more or 1,500 square feet or more if located in a critical drainage area.

D. Removal of more than six significant trees from any property.

E. Any clearing or grading within a critical area or buffer of a critical area.

F. Any change of the existing grade by four feet or more.

G. Any work that occurs within or requires the use of a public easement, City-owned tract or City right-of-way.

H. Any land surface modification not specifically exempted from the provisions of this subchapter.

I. Construction or creation of new impervious surface over 1,500 square feet in size, or 500 square feet in size if located in a landslide hazard area or critical drainage area.

J. Any construction of public drainage facilities to be owned or operated by the City.

K. Any construction involving installation of private storm drainage pipes 12-inch in diameter or larger.

L. Any modification of, or construction which affects a stormwater quantity or quality control system. (Does not include maintenance or repair to the original condition).

M. Applicants for forest practice permits (Class IV – general permit) issued by the Washington State Department of Natural Resources (DNR) for the conversion of forested sites to developed sites are also required to obtain a clearing and grading permit. For all other forest practice permits (Class II, III, IV – special permit) issued by DNR for the purpose of commercial timber operations, no development permits will be issued for six years following tree removal. (Ord. 238 Ch. V § 5(D), 2000).

20.50.330 Project review and approval.

A. **Review Criteria.** The Director shall review the application and approve the permit, or approve the permit with conditions; provided, that the application demonstrates compliance with the criteria below.

1. The proposal complies with SMC 20.50.340 through 20.50.370, or has been granted a variance.

2. The proposal complies with all standards and requirements for the underlying permit.

3. If the project is located in a critical area or buffer or has the potential to impact a critical area, the project must comply with the critical areas standards.

4. The project complies with all requirements of the engineering standards and the Surface Water Design Manual.

5. All required bonds or other assurance devices are posted with the City.

B. **Professional Evaluation.** In determining whether a tree removal and/or clearing is to be approved or conditioned, the Director may require the submittal of a professional evaluation and/or a tree protection plan prepared by a certified arborist at the applicant's expense, where the Director deems such services necessary to demonstrate compliance with the standards and guidelines of this subchapter. Third party review of plans, if required, shall also be at the applicant's expense. The Director shall have the sole authority to determine whether the professional evaluation submitted by the applicant is adequate, the evaluator is qualified

and acceptable to the City, and whether third party review of plans is necessary. Required professional evaluation(s) and services may include:

1. Providing a written evaluation of the anticipated effects of proposed construction on the viability of trees on a site;

2. Providing a hazardous tree assessment;

3. Developing plans for, supervising, and/or monitoring implementation of any required tree protection or replacement measures; and/or

4. Conducting a post-construction site inspection and evaluation.

C. **Conditions of Approval.** The Director may specify conditions for work at any stage of the application or project as he/she deems necessary to ensure the proposal's compliance with requirements of this subchapter, critical area standards, engineering standards, the adopted stormwater management regulations, and any other section of the Shoreline Development Code, or to protect public or private property. These conditions may include, but are not limited to hours or seasons within which work may be conducted, or specific work methods.

D. **Designation of Protected Trees.**

1. For the following areas, the retention and planting plan and any application and permit plans shall show all trees designated for protection: areas designated as "protected trees," "native growth protection areas," "sensitive areas," "sensitive area buffers," or such other designation as may be approved

by the Director. Protected vegetation, including protected trees, shall not be modified, harmed or removed except as provided in this subchapter.

2. The Director may require that protected trees be permanently preserved within a tract, easement or other permanent protective mechanism. When required, the location, purpose, and limitation of these protected areas shall be shown on the face of the deed, plat, binding site plan, or similar document and shall be recorded with the King County Department of Records and Elections or its successor. The recorded document shall include the requirement that the protected areas shall not be removed, amended or modified without the written approval of the City.

E. **Preconstruction Meeting Required.** Prior to thecommencement of any permitted clearing and grading activity, a preconstruction meeting shall be held on site with the permittee and appropriate City staff. The project site shall be marked in the field as follows:

1. The extent of clearing and grading to occur;

2. Delineation of any critical areas and critical area buffers;

3. Trees to be removed and retained; and

4. Property lines. (Ord. 238 Ch. V § 5(E), 2000).

20.50.340 Basic operating conditions and standards of performance.

A. Any activity that will clear, grade or otherwise disturb the site, whether requiring a clearing or grading permit or not, shall provide erosion and

sediment control (ESC) that prevents, to the maximum extent possible, the transport of sediment from the site to drainage facilities, water resources and adjacent properties. Erosion and sediment controls shall be applied as specified by the temporary ESC measures and performance criteria and implementation requirements in the adopted stormwater management design manual.

B. Cuts and fills shall conform to the following provisions unless otherwise approved by the Director:

1. **Slope.** No slope of cut and fill surfaces shall be steeper than is safe for the intended use and shall not exceed two horizontal to one vertical, unless otherwise approved by the Director.

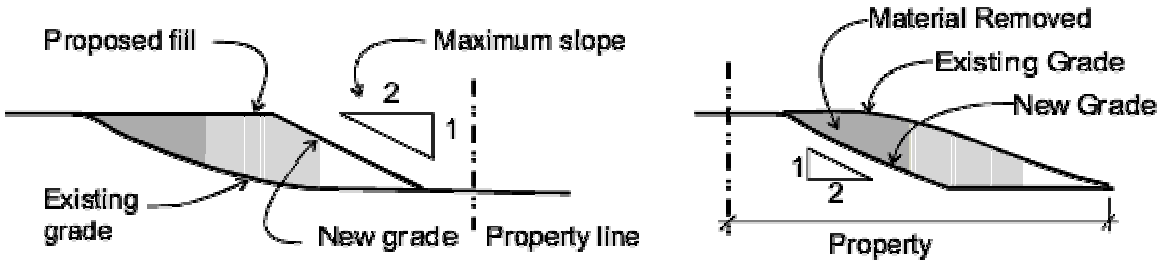

Figure 20.50.340(B): Illustration of fill and cut with maximum slope 2:1.

2. **Erosion Control.** All disturbed areas including faces of cuts and fill slopes shall be prepared and maintained to control erosion in compliance with the Surface Water Design Manual.

3. **p**reparation of Ground. The ground surface shall be prepared to receive fill by removing unsuitable material such as concrete slabs, tree stumps, construction materials, brush and other debris.

4. **Fill Material.** Detrimental amounts of organic material shall not be permitted in fills. Only earth materials which have no rock or similar irreducible material with a maximum dimension greater than 12 inches shall be used. In the absence of an approved soils engineering report, these provisions may be waved by the Director for minor fills not intended to support structures.

5. **Drainage.** Provisions shall be made to:

   a. Prevent any surface water or seepage from damaging the cut face of any excavations or the sloping face of a fill;

   b. Carry any surface waters that are or might be concentrated as a result of a fill or excavation to a natural watercourse, or by other means approved by the department of public works;

6. **Bench/Terrace.** Benches, if required, at least 10 feet in width shall be back-sloped and shall be established at not more than 25 feet vertical intervals to control surface drainage and debris. Swales or ditches on benches shall have a maximum gradient of five percent.

7. **Setbacks.** The tops and the toes of cut and fill slopes shall be set back from property boundaries as far as necessary for safety of the adjacent properties and to prevent damage resulting from water runoff or erosion of the slopes. The tops and the toes of cut and fill slopes shall be set back from structures as far as is necessary for adequacy of foundation support and to prevent damage as a result of water runoff

or erosion of the slopes. Slopes and setbacks shall be determined by the Director.

C. **Access Roads – Maintenance.** Access roads to grading sites shall be maintained and located to the satisfaction of the Director to minimize problems of dust, mud and traffic circulation.

D. **Access Roads – Gate.** Access roads to grading sites shall be controlled by a gate when required by the Director.

E. **Warning Signs.** Signs warning of hazardous conditions, if such exist, shall be affixed at locations as required by the Director.

F. **Temporary Fencing.** Temporary fencing, where required by the Director, to protect life, limb and property, shall be installed. Specific fencing requirements shall be determined by the Director.

G. **Hours of Operation.** Hours of operation for tree cutting, clearing and grading, unless otherwise authorized by the Director, shall be between 7:00 a.m. and 7:00 p.m. weekdays and 9:00 a.m. to 9:00 p.m. on Saturdays and Sundays. Additionally, tree cutting (felling) shall further be limited to daylight hours.

H. **Traffic Control and Haul Plan.** The applicant shall be required to submit a plan detailing traffic control and proposed timing, volume, and routing of trucks and equipment as determined to be necessary by the Director. (Ord. 238 Ch. V § 5(F), 2000).

20.50.350 Development standards for clearing activities.

A. No trees or ground cover shall be removed from critical area or buffer unless the proposed activity is consistent with the critical area standards.

B. **Minimum Retention Requirements.** All proposed development activities that are not exempt from the provisions of this subchapter shall meet the following:

1. At least 20 percent of the significant trees on a given site shall be retained, excluding critical areas, and critical area buffers, **or**

2. At least 30 percent of the significant trees on a given site (which may include critical areas and critical area buffers) shall be retained.

3. The Director may require the retention of additional trees to meet the stated purpose and intent of this ordinance, as required by the critical areas standards, or as site-specific conditions demand using SEPA substantive authority.

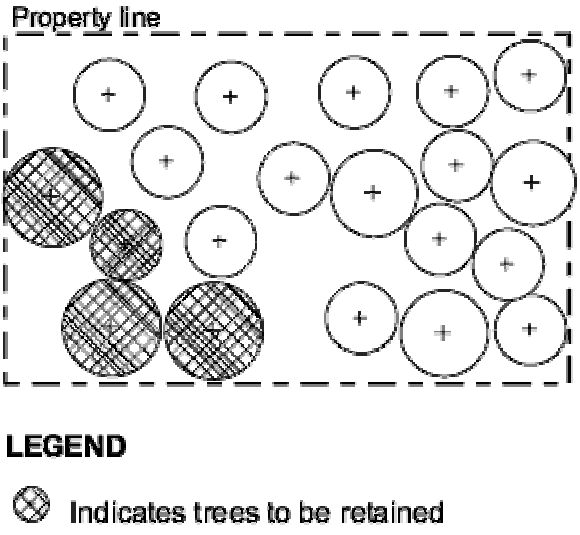

Figure 20.50.350(B)(1): Demonstration of the retention of 20 percent of the significant

trees on a site containing no critical areas.

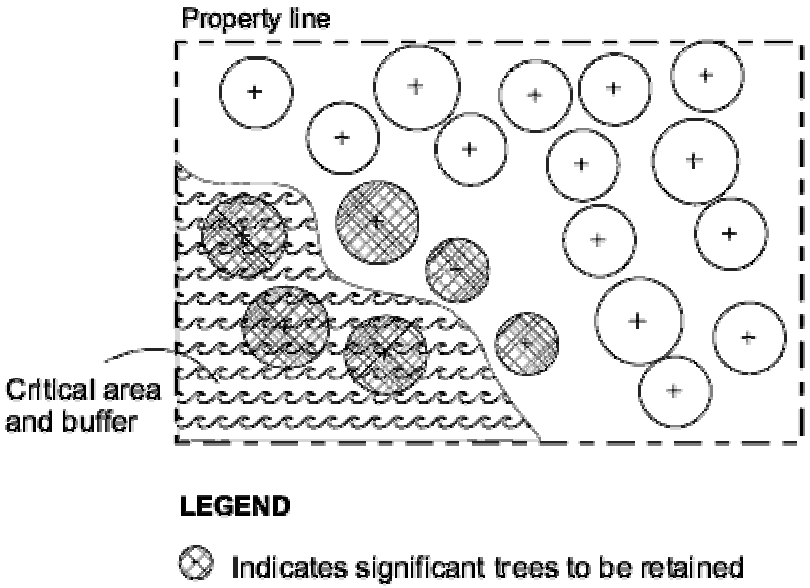

Figure 20.50.350(B)(2): Demonstration of the retention of 30 percent of the significant trees on a site containing a critical area.

Exception 20.50.350(B):

1. *The Director may allow a reduction in the minimum significant tree retention percentage to facilitate preservation of a greater number of smaller trees, a cluster or grove of trees, contiguous perimeter buffers, distinctive skyline features, or based on the City's concurrence with a written recommendation of a arborist certified by the International Society of Arboriculture and approved by the City that retention of the minimum percentage of trees is not advisable on an individual site.*

2. *In addition, the Director may allow a reduction in the minimum significant tree retention percentage if all of the following criteria are satisfied: The exception is necessary because:*

There are special circumstances related to the size, shape, topography, location or surroundings of the subject property.

Strict compliance with the provisions of this Code may jeopardize reasonable use of property.

Proposed vegetation removal, replacement, and any mitigation measures are consistent with the purpose and intent of the regulations.

The granting of the exception or standard reduction will not be detrimental to the public welfare or injurious to other property in the vicinity.

3. If an exception is granted to this standard, the applicant shall still be required to meet the basic tree replacement standards identified in SMC 20.50.360 for all significant trees removed beyond the six allowed per parcel without replacement and up to the maximum that would ordinarily be allowed under SMC 20.50.350(B).

4. In addition, the applicant shall be required to plant four trees for each significant tree removed that would otherwise count towards the minimum retention percentage. Trees replaced under this provision shall be at least 12 feet high for conifers and three inches in caliper if otherwise. This provision may be waived by the Director for restoration enhancement projects conducted under an approved vegetation management plan.

C. **Incentives for Higher Levels of Tree Protection.** The Director may grant reductions or adjustments to other site development standards if the protection levels identified in subsection (B) of this section above are exceeded. On a case by case review, the Director shall determine the balance between tree protection that exceeds the established minimum percentage and variations to site development requirements. If the Director

grants adjustments or reductions to site development standards under this provision, then tree protection requirements shall be recorded on the face of the plat, as a notice to title, or on some other legal document that runs with the property. Adjustments that may be considered are:

1. Reductions or variations of the area, width, or composition of required open space and/or landscaping;

2. Variations in parking lot design and/or and access driveway requirements;

3. Variations in building setback requirements;

4. Variations of grading and stormwater requirements.

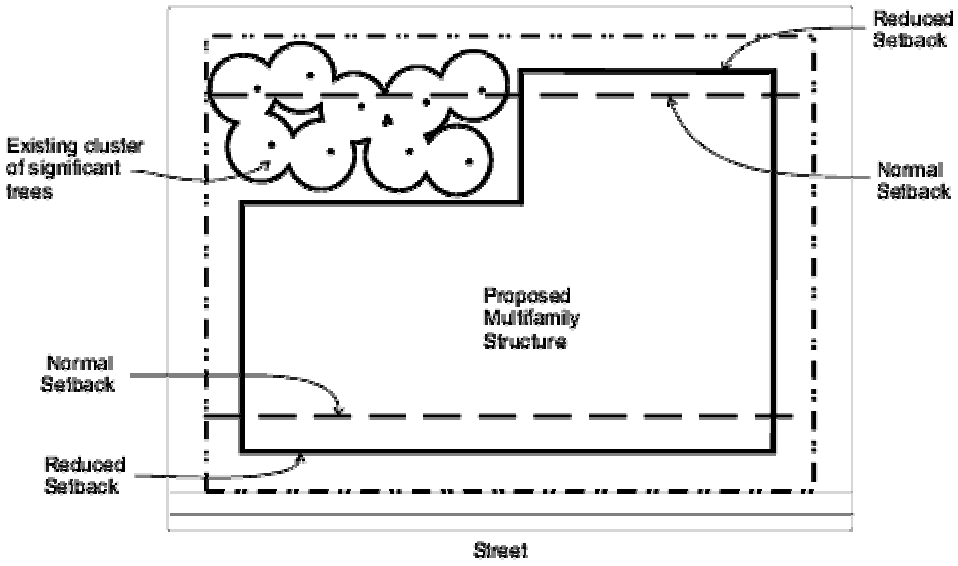

Figure 20.50.350(C): Example of aggregate setback to preserve a cluster of significant trees.

D. **Site Design.** Site improvements shall be designed and constructed to meet the following:

1. Trees should be protected within vegetated islands and stands rather than as individual, isolated trees scattered throughout the site.

2. Site improvements shall be designed to give priority to protection of trees with the following characteristics, functions, or location:

   Existing stands of healthy trees that have a reasonable chance of survival once the site is developed, are well shaped to withstand the wind and maintain stability over the long term, and will not pose a threat to life or property;

   Trees which exceed 50 feet in height.

   Trees and tree clusters which form a continuous canopy.

   Trees that create a distinctive skyline feature.

   Trees that have a screening function or provide relief from glare, blight, commercial or industrial harshness;

   Trees providing habitat value, particularly riparian habitat;

   Trees within the required yard setbacks or around the perimeter of the proposed development;

   Trees having a significant land stability function;

   Trees adjacent to public parks, open space, and sensitive area buffers.

   Trees having a significant water-retention function, such as cottonwoods.

3. Building footprints, parking areas, roadways, utility corridors and other structures shall be designed and located with a consideration of tree protection opportunities.

4. The project grading plans shall accommodate existing trees and avoid alteration to grades around existing significant trees to be retained.

5. Required open space and recreational space shall be designed and located to protect existing stands of trees.

6. The site design and landscape plans shall provide suitable locations and adequate area for replacement trees as required in SMC 20.50.370.

7. In considering trees for protection, the applicant shall avoid selecting trees that may become hazardous because of wind gusts, including trees adjacent to utility corridors where falling trees may cause power outages or other damage. Remaining trees may be susceptible to blow downs because of loss of a buffer from other trees, grade changes affecting the tree health and stability and/or the presence of buildings in close proximity.

8. If significant trees have been removed from a closed, forested situation, an adequate buffer of smaller trees shall be retained or planted on the fringe of such significant trees as determined by a certified arborist.

9. All trees located outside of identified building footprints and driveways and at least 10 feet from proposed structures shall be considered as eligible for preservation. However, all significant trees on a site shall be considered when calculating the minimum retention percentage.

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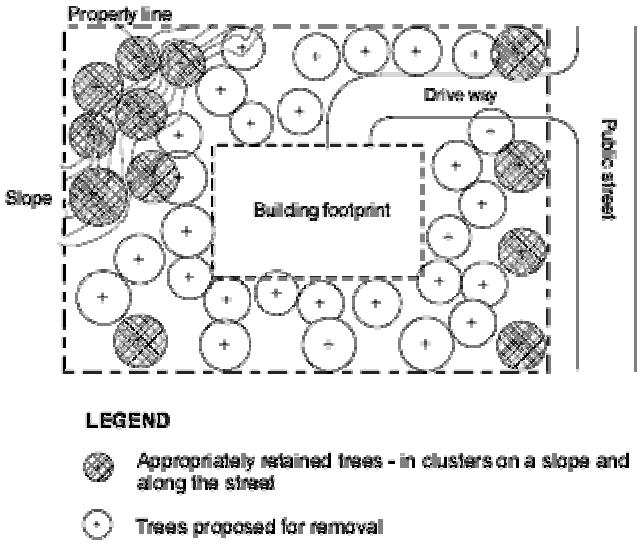

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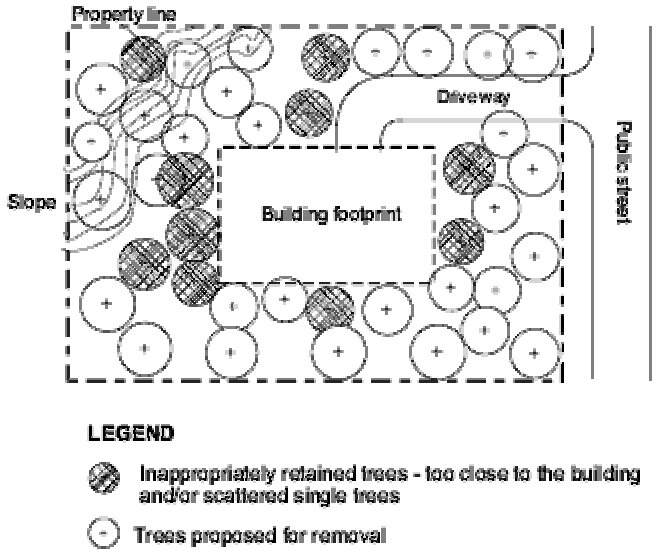

Figure 20.50.350(D): Example of the application of tree retention site design standards. Appropriate retention of a cluster of trees on a slope and frontage trees are shown above. Inappropriate retention of scattered single trees and trees near structures are shown below.

E. **Cutting and Pruning of Protected Trees.** Trees protected under the provisions of this section shall not be topped. Pruning and maintenance of protected trees shall be consistent with best management practices in the field of arboriculture and further the long-term health of the tree. Excessive pruning, including topping, stripping, or imbalances, shall not be allowed unless necessary to protect life and property.

The last sentence is expanded to make the term "excessive pruning" clearer.

F. **Landmark Trees.** Trees which have been designated as landmark trees by the City of Shoreline because they are 30 inches or larger in diameter or particularly impressive or unusual due to species, size, shape, age, historical significance and/or is an outstanding row or group of trees, has become a landmark to the City of Shoreline or is considered a specimen of its species shall not be removed unless the applicant meets the exception requirements of subsection (B) of this section. The Director shall establish criteria and procedures for the designation of landmark trees. (Ord. 238 Ch. V § 5(G), 2000).

20.50.360 Tree replacement and site restoration.

A. **Plans Required.** Prior to any tree removal, the applicant shall demonstrate through a clearing and grading plan, tree retention and planting plan, landscape plan, critical area protection and mitigation plan, or other plans acceptable to the Director that tree replacement will meet the minimum standards of this section. Plans shall be prepared by a qualified person or persons at the applicant's expense. Third party review of plans, if required, shall be at the applicant's expense.

B. The City may require the applicant to relocate or replace trees, shrubs, and ground covers, provide erosion control methods, hydro seed exposed slopes, or otherwise protect and restore the site as determined by the Director or designee.

C. **Replacement Required.** Up to six significant trees and associated vegetation may be removed per parcel with no replacement of trees required. Any significant tree proposed for removal beyond this limit should be replaced as follows:

1. One existing significant tree of eight inches in diameter at breast height for conifers or 12 inches in diameter at breast height for all others equals one new tree.

2. Each additional three inches in diameter at breast height equals one additional new tree, up to three trees per significant tree removed.

3. Minimum size requirements for trees replaced under this provision: deciduous trees shall be at least 1.5 inches in caliper and evergreens six feet in height.

Exception 20.50.360(C):

1. No tree replacement is required ~~in the following cases:~~when

~~*The tree is hazardous, dead, diseased, injured or in a declining condition with no reasonable assurance of remaining vigor.*~~

The tree is proposed for relocation to another suitable planting site; provided, that relocation complies with the standards of this section.

2. The Director may allow a reduction in the minimum replacement trees required or off-site planting of replacement trees if all of the following criteria are satisfied:

There are special circumstances related to the size, shape, topography, location or surroundings of the subject property.

Strict compliance with the provisions of this Code may jeopardize reasonable use of property.

The tree replacement exception for hazardous trees is removed so that replanting would be required. The general provisions allowing up to six trees (hazardous or not) to be removed without replacement would continue to apply.

Proposed vegetation removal, replacement, and any mitigation measures are consistent with the purpose and intent of the regulations.

The granting of the exception or standard reduction will not be detrimental to the public welfare or injurious to other property in the vicinity.

3. The Director may waive this provision for site restoration or enhancement projects conducted under an approved vegetation management plan.

D. The Director may require that a portion of the replacement trees be native species in order to restore or enhance the site to predevelopment character.

E. The condition of replacement trees shall meet or exceed current American Nursery and Landscape Association or equivalent organization's standards for nursery stock.

F. Replacement of removed trees with appropriate native trees at a ratio determined by the Director will be required in critical areas.

G. The Director may consider smaller-sized replacement plants if the applicant can demonstrate that smaller plants are more suited to the species, site conditions, and to the purposes of this subchapter, and are planted in sufficient quantities to meet the intent of this subchapter.

H. All required replacement trees and relocated trees shown on an approved permit shall be maintained in healthy condition by the property owner throughout the life of the project, unless otherwise approved by the Director in a subsequent permit.

I. Where development activity has occurred that does not comply with the requirements of this subchapter, the requirements of any other section of the Shoreline Development Code, or approved permit conditions, the Director may require the site to be restored to as near preproject original condition as possible. Such restoration shall be determined by the Director and may include, but shall not be limited to, the following:

1. Filling, stabilizing and landscaping with vegetation similar to that which was removed, cut or filled;

2. Planting and maintenance of trees of a size and number that will reasonably assure survival and that replace functions and values of removed trees; and

3. Reseeding and landscaping with vegetation similar to that which was removed, in areas without significant trees where bare ground exists.

J. Significant trees which would otherwise be retained, but which were unlawfully removed or damaged or destroyed through some fault of the applicant or their representatives shall be replaced in a manner determined by the Director.

K. **Performance Assurance.** A performance bond or other acceptable security device to ensure the installation, maintenance and adequate performance of tree retention, replacement, and protection measures may be required in an amount determined by the Director.

L. **Monitoring.** The Director may require submittal of periodic monitoring reports as necessary to ensure survival of replacement trees. The

contents of the monitoring report shall be determined by the Director.

M. **Discovery of Undocumented Critical Areas.** The Director may stop work authorized by a clearing and grading permit if previously undocumented critical areas are discovered on the site. The Director has the authority to require additional studies, plans and mitigations should previously undocumented critical areas be found on a site. (Ord. 299 § 1, 2002; Ord. 238 Ch. V § 5(H), 2000).

20.50.370 Tree protection standards.

The following protection measure shall be imposed for all trees to be retained on-site during the construction process.

A. All required tree protection measures shall be shown on the tree protection and replacement plan, clearing and grading plan, or other plan submitted to meet the requirements of this subchapter.

B. Tree dripline areas shall be protected. No fill, excavation, construction materials, or equipment staging or traffic shall be allowed in the dripline areas of trees that are to be retained.

C. Prior to any land disturbance, temporary construction fences must be placed around the dripline of trees to be preserved. If a cluster of trees is proposed for retention the barrier shall be placed around the edge formed by the drip lines of the trees to be retained.

D. Tree protection barriers shall be a minimum of four feet high, constructed of chain link, or polyethylene laminar safety fencing or similar material, subject to approval by the Director. "Tree Protection Area" signs shall be posted visibly on all sides of the fenced areas. On large

or multiple-project sites, the Director may also require that signs requesting subcontractor cooperation and compliance with tree protection standards be posted at site entrances.

E. Where tree protection areas are remote from areas of land disturbance, and where approved by the Director, alternative forms of tree protection may be used in lieu of tree protection barriers; provided, that protected trees are completely surrounded with continuous rope or flagging and are accompanied by "Tree Leave Area – Keep Out" signs.

F. Rock walls shall be constructed around the tree, equal to the dripline, when existing grade levels are lowered or raised by the proposed grading.

G. Retain small trees, bushes and understory plants within the tree protection zone to the maximum extent practicable.

H. **Preventative Measures.** In addition to the above minimum tree protection measures, the applicant should support tree protection efforts by employing, as appropriate, the following preventative measures, consistent with best management practices for maintaining the health of the tree:

1. Pruning of visible deadwood on trees to be protected or relocated;

2. Application of fertilizer to enhance the vigor of stressed trees;

3. Use of soil amendments and soil aeration in tree protection and planting areas;

4. Mulching over tree drip line areas; and

5. Ensuring proper watering during and immediately after construction and throughout the first growing season after construction.

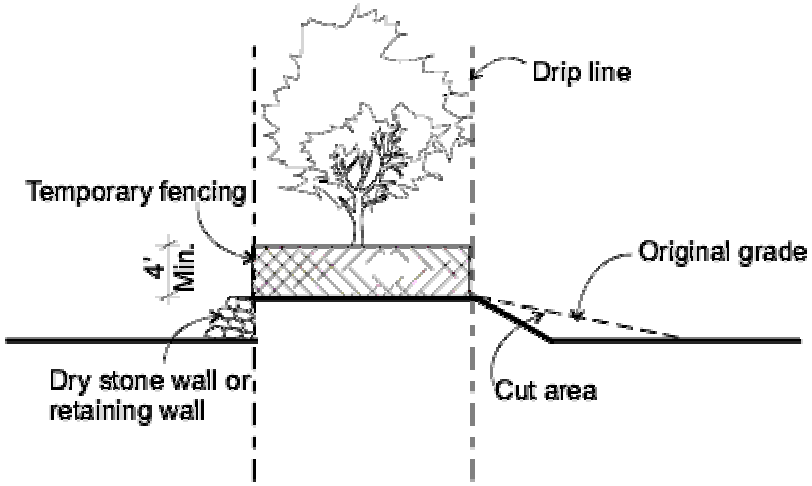

Figure 20.50.370: Illustration of standard techniques used to protect trees during construction.

Exception 20.50.370:
The Director may waive certain protection requirements, allow alternative methods, or require additional protection measures based on concurrence with the recommendation of a certified arborist deemed acceptable to the City. (Ord. 238 Ch. V § 5(I), 2000).

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OCTOBER 2003

DRAFT

TECHNICAL MEMORANDUM:

SELECTED SUMMARY OF BEST AVAILABLE SCIENCE IN SUPPORT OF CITY OF SHORELINE CRITICAL AREAS UPDATE

Prepared for:

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CONTENTS

1 INTRODUCTION

1.1 Project Authorization

At the request of the City of Shoreline, Adolfson Associates, Inc. (Adolfson) has prepared this technical memorandum to provide guidance to the City as they develop the "best available science" record for the update of their critical areas ordinance. Adolfson focused on providing a brief summary of scientific information related to managing the City's stream, wetland, wildlife, and marine/nearshore resources.

This technical memorandum summarizes the findings of a brief review of selected scientific documents and evaluates the applicability of the science to the City's critical areas. This review includes relevant studies from the Office of Community Development's "Citations of Recommended Sources for Designating and Protecting Critical Areas," as well as other selected sources. This review was limited by the available scope and budget authorized for this task. Additional scientific information, not reviewed under this scope of work, may be relevant to the City's critical areas. No field visits were conducted as a part of the development of this technical memorandum.

1.2 Overview of Growth Management Act Requirements

Under the 1990 Growth Management Act (GMA) (RCW 360.70A.060), counties and cities are required to adopt development regulations that protect the functions and values of critical areas including, but not limited to, streams, wetlands, and wildlife habitat. In 1995, the Washington State legislature added a new section to the GMA to ensure that counties and cities consider reliable scientific information when adopting policies and development regulations to designate and protect critical areas. RCW 36.70A.172(1) states:

> *In designating and protecting critical areas under this chapter, counties and cities shall include the best available science in developing policies and development regulations to protect the functions and values of critical areas.*

In addition, RCW 36.70A.172(1) states that special consideration must be given to "measures necessary to preserve or enhance anadromous fisheries," which refers to those species that reproduce in fresh water and migrate to salt water for some portion of their life, returning to fresh water. The term "fisheries" commonly refers to stocks of fish that are managed for commercial, recreational, cultural, or ceremonial uses (WDFW, 1997).

In response to this legislation, the State Office of Community, Trade, and Economic Development (CTED) promulgated rules to guide cities and counties in identifying and including the best available science in their critical area policies and regulations. These rules are found under WAC 365-195-900-925.

2 STREAMS AND RIPARIAN AREAS

2.1 Importance of Streams and Riparian Areas

Stream systems are one of the most productive natural ecosystems. Riparian areas play a significant role in the protection of the functions of adjacent aquatic habitats. Both streams and their riparian areas provide important habitats for aquatic species and other wildlife, as well as contribute to recreation, water supply, economic, and cultural and historic values. Specific stream functions are discussed in the following section.

2.2 Functions of Streams

Elements necessary for healthy salmonid populations and for populations of other aquatic organisms rely on processes sustained by the dynamic interaction between the streams and their adjacent riparian areas (Naiman et al., 1992). Stream and riparian area functions include:

- Maintaining stream baseflows;
- Maintaining water quality;
- Providing in-stream structural diversity; and
- Providing biotic input of insects and organic matter.

2.3 Function of Riparian Buffers

Riparian buffers along stream banks help to mitigate the impacts of urbanization and disturbance on adjacent lands (Finkenbine et al., 2000 in Bolton and Shellberg, 2001). Knutson and Naef (1997) summarize many of the functions of riparian buffers for Washington. The Washington Department of Fish and Wildlife's (WDFW) recommended standard buffer widths previously released in the Office of Community Development's Model Critical Areas Code for the state's five-tier stream typing system were based on this latter research (Table 1) (OCD, 2002). The model code is currently being revised.

Buffer widths reported to be effective for riparian functions vary considerably by function; the literature is not definitive in identifying one buffer width for each function studied (Williams and Lavey, 1986; Johnson and Ryba, 1992). The wide range of reported effective buffer widths indicates that site-specific factors such as climate, slope, aspect, and land use are also important in determining the outcome of each study. However, a general relationship between buffer width and buffer effectiveness can be found in reviews of previous studies on buffers. Studies indicate that buffers 100 to 150 feet (30 to 45 meters) wide provide most (on the order of 80 percent) of the potential functions. In general, larger buffer widths tend to be most closely correlated with wildlife habitat functions; findings from previous studies range in some cases up to 600 feet for larger mammals and birds (Jones et al., 1988). There is also little research

specifically on effectiveness of riparian buffers in urban environments (Herson-Jones et al., 1995). Buffer distances can be viewed mainly as guidelines, as the literature shows that site-specific factors, including buffer quality, may impact buffer effectiveness along with buffer width (Naiman et al., 1992; Castelle et al., 1994).

Table 1. Riparian Habitat Area Buffer Recommendations: Washington Department of Fish and Wildlife

Stream Type	Recommended Riparian Width
Type 1 & 2, shorelines of statewide significance	250 feet
Type 3 or other perennial or fish bearing streams, 5-20 feet wide	200 feet
Type 3 or other perennial or fish bearing streams, less than 5 feet wide	150 feet
Type 4 and 5 (low mass wasting potential)	150 feet
Type 4 and 5 (high mass wasting potential)	225 feet

Source: OCD, 2002; For definitions of the stream types see the Washington Administrative Code Sections 222-16-030 and 031.

2.4 Stream Management in Urban Environments

Some recent studies have focused on the general effects of urbanization on streams in the lowland Puget Sound region (Booth, 2000; Horner and May, 1999). In these studies, a general trend has emerged that places a greater emphasis on evaluation of buffer effectiveness in the context of watershed processes and landscape-level alterations to watersheds (Roni et al., 2002; Richards et al., 1996).

The loss or disturbance of native riparian area is closely tied to urbanization in a watershed (Horner and May, 1999; Leavitt, 1998). However, water quality and the amount of impervious area have also been associated with stream degradation and impacts to native riparian areas. The adverse impacts of impervious area and water quality functions, which can include alteration of stream hydrology and degradation of water quality, are compounded by degradation of riparian areas (Bledsoe and Watson, 2001; May et al., 1997a).

Land uses, such as high-density residential development or commercial development, located adjacent to riparian areas can result in greater impacts than lower density single-family residential uses because of factors such as greater impervious surface and greater potential for human intrusion into the buffer (Pitt et al., 1986). In most urban areas, prescriptive buffers may not be adequate to maintain stream or riparian functions because most of the functions of buffers have been compromised by past land use actions. For example, protection or restoration of the natural large woody debris recruitment function of riparian areas is difficult in areas that lack mature forested streamside vegetation (Larson, 2000). Watershed-based strategies that address hydrology and water quality in addition to riparian area width and quality may also be helpful to successfully address management of streams (Booth, 2000; Horner and May, 1999). When applied in the

context of a basin-wide change, these strategies, which may include stormwater management and land use controls, may most effectively address protection, enhancement, and restoration of stream systems.

Barriers like culverts and stormwater control structures can inhibit fish migration and prohibit fish from accessing upstream habitats. Barriers that do not prevent the migration of fish may limit many natural processes necessary for salmonid fish production including the natural redistribution of substrate and woody debris. Restoring fish passage is an effective way to increase the quality and accessibility of habitat and can result in relatively large increases in potential fish production at a nominal cost (Roni et al., 2002). Stream channels with high quality habitat (low gradient, high pool frequency, high woody debris recruitment from riparian areas) produce greater benefits (Roni et al., 2002). Land use actions or incentives that address such issues can help conserve and enhance stream functions necessary to maintain and restore populations of anadromous fish.

In urban settings where individual functions and elements of stream habitat are not optimal for salmonids, the combined effect of conditions in a stream basin may allow salmonids to successfully use its habitats. The combined effects of the individual processes that form and support habitat, such as input of organic material and substrate types, may be sufficient to allow some salmonids to live and reproduce. In addition, small changes in stream function (e.g., improving habitat access by removing a fish-passage barrier), in combination with watershed-based restoration strategies, may provide substantial benefits to salmonid populations in urbanized basins.

2.5 Fisheries Habitat and Salmonid Use in the City of Shoreline

The City of Shoreline contains two streams that have documented salmonid use. Another stream has documented anadromous salmonid use, but that documentation is for reaches outside the city limits. Much of this information comes from a series of draft stream basin inventories completed by the City in 2003 (Tetra Tech/KCM, 2003a, b, c, and d). The City contains many small watercourses that are remnant portions of previously existing natural drainage systems that likely contain cutthroat trout. No substantial information exists as to the presence or absence of fish within these smaller drainages.

In general, the geographic location, topography, geology, and level of existing urbanization in the City of Shoreline limit the extent to which its streams can provide the necessary biological requirements for salmonid species and other aquatic organisms.

Boeing Creek has documented salmonid use including Chinook salmon (*Oncorhynchus tshawytscha*), a listed Federal Threatened species; chum salmon (*O. keta*); coho salmon, also a listed Federal Candidate species, (*O. kisutch*); and sea run cutthroat trout (*Salmo clarki*).

McAleer Creek has documented anadromous salmonid use including Chinook salmon (LFPSF), coho salmon, and sockeye salmon (*O. nerka*) (Tetra Tech/KCM, 2003d). Most use occurs outside the city limits, but coho salmon and resident cutthroat trout have been observed in portions of McAleer Creek within the city limits.

Chinook salmon, coho salmon, and sockeye salmon have been documented in Thornton Creek outside of the city limits (WDFW 1998). Resident cutthroat trout are common throughout the Thornton Creek system (Tetra Tech/KCM, 2003d).

Many of the City's smaller streams are likely to contain resident cutthroat trout.

2.6 Functions of Streams and Riparian Areas in the City of Shoreline

The City of Shoreline is in the process of updating their stream inventory. In this inventory, streams are mapped and evaluated as to their ability to perform basic stream functions such as contributing to stream baseflow, water quality improvement, and providing in-stream habitat and structure. Preliminary stream habitat assessments (Tetra Tech/KCM, 2003a, b, and d) rate the stream habitat conditions in the City's streams as poor to fair.

2.7 Data Gaps

Two data gaps were discovered in the preparation of this study. The first is the lack of best available science literature specifically pertaining to urbanizing watersheds and the buffers needed to protect environmentally sensitive areas in the central Puget Sound area specifically, and in the urban Pacific Northwest in general. The second data gap is the lack of information on some aspects of the City's streams and their associated riparian habitat. A draft stream inventory has been prepared for the City that evaluates the streams in the city limits, and is a good start in the assessment of stream conditions, providing information beyond many other jurisdictions in the region. In addition to the stream inventory currently being prepared by the City, an assessment of fish and wildlife use in the City's streams and riparian corridors will be useful in making policy decisions and modifications regarding sensitive areas. In addition, documentation of water quality parameters and buffer quality could be included as part of this background documentation.

3 WETLANDS AND WETLAND BUFFERS

This section briefly summarizes some of the pertinent scientific literature for wetlands and wetland buffers. This section also builds on the existing information regarding wetlands in the City by summarizing additional sources pertaining to wetland functions and values.

Wetlands and their buffers provide important functions and values for both the human and biological environment. These functions include control of hydrology, improvement of water quality, contribution to stream base flow and groundwater recharge, production of nutrients, and provision of wildlife habitat. These functions are discussed in more detail below.

Wetlands are also valued for social and economic values, including their recreational and educational value, and the role they play in mitigating flooding and its associated health and safety concerns.

3.1 Wetland Definition

Wetlands are formally defined by the U.S. Army Corps of Engineers (Corps), the Environmental Protection Agency (EPA), the Washington Shoreline Management Act (SMA) (1971) and the Washington State Growth Management Act (GMA) (1992) as:

> … *those areas that are inundated or saturated by surface 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* (Federal Register, 1982, 1986).

In addition, the Washington Shoreline Management Act definition and the GMA definition add:

> *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 artificially created wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands.*

This same definition of wetland is used in the Washington State Wetlands Identification and Delineation Manual (Ecology, 1997).

Wetlands are typically rated based on size and habitat, and on their relative functions and values. In the State of Washington, the Department of Ecology (Ecology) has developed a wetland rating system for ranking wetlands according to their relative importance. This rating system is outlined in the *Washington State Wetland Rating System for Western Washington* (Publication No. 93-74, Ecology, 1991). Ecology is currently re-evaluating the wetland rating system for western Washington and will be updating this system in the near future.

3.2 Wetland Functions and Values

Wetlands are integral parts of the natural landscape. Their "functions and values" to both the environment and to the general public depend on several elements including their size and location within a basin, as well as their diversity and quality. While each wetland provides various beneficial functions, not all wetlands perform all functions, nor do they perform all functions equally well (Novitski et al., 1995).

Several studies have found that wetland functions and values are compromised by urbanization (Azous and Horner, 2001; Mitsch and Gosselink, 2000; Castelle et al., 1992a; May et al., 1997a; Booth, 2000; City of Portland, 2001). In urban settings individual functions of wetlands may not be optimal. For example, wetlands can provide significant stormwater control, even if they are degraded and comprise only a small percentage of area within a basin. Also, wetlands are important elements of stream systems and fish habitat. Within the urban environment, even degraded wetlands can provide rearing and refuge habitat for fish and other wildlife, along with other benefits that help keep streams healthy.

The functions provided by wetlands and their assigned human-based values have been identified and evaluated through several studies (Cowardin et al., 1979; Adamus et al., 1987; Mitsch and Gosselink, 2000; Hruby, 1995; Reppert et al., 1979; Cooke, 1995.). These functions include:

- Flood water attenuation and flood peak desynchronization;
- Stream base flow maintenance and groundwater support;
- Shoreline protection;
- Water quality improvement;
- Biological support and wildlife habitat; and
- Recreation, education, and open space.

3.3 Functions and Values of Wetland Buffers

Wetland buffers are vegetated upland areas immediately adjacent to wetlands. These areas provide beneficial functions that enhance and protect the many functions and values of wetlands described above. Buffers are particularly important for wildlife because many of the wildlife species associated with wetlands also require terrestrial habitats for their survival. Terrestrial habitats surrounding wetlands also provide a buffer to help mitigate the impacts of urbanization such as runoff from impervious surfaces and human intrusion.

Buffer areas retain sediments, nutrients, pesticides, pathogens, and other pollutants that may be present in runoff (Ecology, 1996). Reduction of sediment and pollutant discharge to wetlands can reduce or prevent alterations to plant and animal communities and degradation of water quality. As a result, buffers also increase the ability of wetlands to further provide sediment and pollutant removal. Upland buffers can infiltrate floodwater, reducing the effects of water level fluctuations in wetlands. Buffers composed of forested and shrub vegetation provide shade and can help maintain water and wildlife habitat quality.

Several literature reviews have been published summarizing the effectiveness of various buffer widths, mainly for riparian areas, but also for wetlands (Castelle et al., 1992a; Castelle and Johnson, 2000; Desbonnet et al., 1994; FEMAT, 1993). Some literature sources indicate that buffer widths beneficial for protecting a given function or group of

functions depend on numerous site-specific factors. These factors include the plant community (species, density, and age), aspect, slope, and soil type, as well as adjacent land use. The body of science also indicates that the appropriate buffer width for a given wetland is specific to the functions to be achieved by that buffer.

Studies of buffers in forest practices and agriculture indicate that buffers ranging from 25 to 100 feet may be adequate to preserve some of the individual beneficial functions of wetlands. When looking at aggregates of wetland functions, other studies indicate that buffers ranging from 100 to 150 feet wide provide most (on the order of 80 percent) of potential functions in most situations.

In some cases, buffers of 200 or 300 feet or more from the aquatic resource have been documented as more appropriate for some wildlife species. Wildlife species that use wetlands for a portion of their life cycle also depend on terrestrial habitats for food, cover, nesting, and/or travel corridors. A variety of wildlife species utilize the edge habitat between wetlands and uplands habitat. Terrestrial habitat areas provide a source of large woody debris used by wildlife for foraging, nesting, and cover (O'Connell, 2000). Buffers also provide separation between wetland habitat and human disturbance. This distance improves the quality of wildlife habitat by lessening the effects of noise, light, and human motion/activity on animal species sensitive to these disturbances.

There are many different variables affecting wetland functions in urban areas, and applying prescriptive buffer standards alone may not be adequate to protect wetland systems. Due to the type and degree of cumulative impacts to urban wetlands (and streams) that have already occurred as a result of high levels of total impervious area and past disturbance to wetlands, it may also be necessary to develop strategies, such as stormwater management, to protect wetlands in the context of basin-wide change (Booth, 2000; Azous and Horner, 2001; Booth and Reinelt, 1993).

3.3.1 Wetland and Buffer Mitigation Success

The Clean Water Act Section 404(b)(1) Guidelines for wetland mitigation require "no net loss" of wetlands by first avoiding, minimizing, rectifying, and reducing impacts to wetlands and their functions. Where impacts cannot be avoided, mitigation may be required. Most wetland mitigation projects in Washington have not been successful for various reasons and have resulted in lost acreage, wetland types, and wetland functions (Castelle et al., 1992b; Washington Department of Ecology, 2001; Mockler et al., 1998). An initial study by Ecology (Castelle et al., 1992b) reported that 50 percent or more of the mitigation projects studied did not meet permit requirements. Common problems included:

- Inadequate design;
- Failure to implement the design;
- Lack of proper maintenance, site infestation by exotic species;
- Grazing by geese or other animals;

- Destruction by floods, erosion, fires, or other catastrophic events;
- Failure to maintain water levels and failure to protect projects from on-site and off-site impacts such as sediment and pollutant loading; and
- Off-road vehicles.

Twenty-four mitigation sites in Washington were analyzed by Ecology and found that although mitigation success has improved in the last 10 years, there is still much room for improvement. The Ecology (2001) study had the following findings:

- Only 29 percent of the projects were achieving all their specified measures;
- Only 84 percent of the total acreage of mitigation was actually established;
- Only 65 percent of the total acreage of lost wetlands was replaced with new wetlands;
- 54 percent of the projects were found to be minimally successful or not successful;
- Wetland enhancement as a type of mitigation performed poorly, compared to creation (50 percent of enhancement sites provided minimal or no contribution to overall wetland functions; 75 percent of sites provided minimal or no contribution to general habitat function); and
- 60 percent of created wetlands were moderately or fully successful and provided significant contribution to water quality and quantity functions.

Ecology (2001) concluded that although better site selection, design and performance standards will help to improve wetland mitigation, consistent follow-up and adaptive management, both to correct problems with current projects and to provide feedback for decision-making on future projects, will result in the greatest overall improvement. Most successful projects had long-term monitoring of at least five years and applied adaptive management strategies. The literature is conflicting on whether on-site mitigation or off-site mitigation can adequately compensate for loss of wetlands and their functions (Erwin, 1990; Castelle et al., 1992a; Kusler, 1992).

Buffer mitigation projects generally are affected by the same factors as wetland mitigation. Success of plant growth in wetland buffers depends on water, nutrient and soil requirements for plants, and controlling the invasion of non-native species (Gwin et al., 1999; Magee et al., 1999). Success of buffer mitigation projects also depends on minimizing human disturbance in the buffer. Buffers in some urban environments, due to close proximity to development, have been altered through dumping of debris, clearing, conversions to residential lawns, and other human disturbances (Desbonnet et al., 1994; Cooke, 1992, Castelle et al., 1992a). However, impacts to buffer areas were less likely in areas where residents had been educated about the value of buffers (Gwin et al., 1999; Kentula, 2002).

3.3.2 Mitigation Ratios

Generally, wetland mitigation is implemented over a larger area than the wetland area adversely affected by a proposed project. Mitigation ratios are typically greater than 1:1 for several reasons, some of which are based on science and others which are policy-driven. Higher ratios act as disincentives to fill wetlands. They also provide an opportunity to achieve certain functions over a larger area, thus compensating for a temporal loss of function from the smaller but presumably more mature impact site. In addition, larger replacement ratios compensate for the inability to achieve full replacement acreage of lost wetlands (Washington Department of Ecology, 2001; Kusler and Kentula, 1990).

Mitigation ratios for wetlands in most local jurisdictions in western Washington currently range between 1:1 and 4:1. However, more information is needed to understand whether lost wetland functions and acreage can be entirely compensated. The previously released Draft OCD Model Critical Areas Ordinance (2002) recommends the following wetland mitigation ratios using Ecology's wetland classification scheme, which is also currently being revised:

- Category I wetlands - 6:1
- Category II wetlands - 3:1
- Category III wetlands - 2:1
- Category IV wetlands - 1.5:1

3.4 Functions and Values of Wetlands and Wetland Buffers in the City of Shoreline

The City of Shoreline is currently in the process of completing inventories of wetlands in its city limits. Further assessment of this data would be beneficial prior to assessing wetland, and in particular wetland buffer functions and values.

The geographic location, topography, geology, and level of existing urbanization in the City of Shoreline limit the extent to which its wetlands can provide the functions described above. However, even in urban settings where individual functions of wetlands are minimal, the combined functions of the wetland systems may provide many of the functional benefits (e.g., stormwater control) not provided by individual wetlands.

3.5 Data Gaps

Two data gaps were discovered in the preparation of this study: the lack of detailed information on the City's wetlands (including wetland functional assessments), and a lack of information on the quality of riparian habitats, and the use of these habitats by wildlife.

4 MARINE/NEARSHORE AREAS

This section briefly summarizes a review of selected relevant science related to marine/nearshore areas adjacent to the City of Shoreline. Three primary sources were utilized to summarize science issues in the nearshore environment for the City including: *Reconnaissance Assessment of the State of the Nearshore Report: Including Vashon and Maury Islands (WRIAs 8 and 9*) (King County DNR, 2001); the Washington Department of Natural Resources (DNR) Shorezone Inventory (WDNR, 2001); and the *King County Nearshore Habitat Mapping Data Report: Picnic Point to Shilshole Marina* (Woodruff et al., 2001).

4.1 Importance of Marine/Nearshore Areas

Estuarine systems include nearshore zones and are one of the most productive natural ecosystems because they act as nurseries for many of the world's fisheries. In addition to providing important habitat for fish and wildlife, marine nearshore areas also contribute to recreation, economic, cultural, and historic values. Understanding of the marine nearshore areas in the region are, however, incomplete due to the complexity of the ecosystem, and the lack of funds to research these areas in greater detail (King County DNR, 2001).

4.2 Marine/Nearshore Areas in the City of Shoreline

The following provides a preliminary description of selected characteristics along the marine nearshore areas of Puget Sound adjacent to the City of Shoreline and summarizes habitats and species that contribute to the City's marine nearshore areas. Information was compiled from existing literature and data sources, and summarizes current and historical information.

4.3 Functions of Nearshore Zones

Puget Sound forms the western boundary of the City of Shoreline. The marine nearshore environment extends approximately 3.5 miles in the city limits and approximately one-half mile along the City's potential annexation area (Point Wells).

Nearshore zones contain many habitat types including eelgrass meadows, kelp forests, flats, tidal marshes, sub-estuaries, sand spits, beaches and backshores, banks and bluffs, and marine riparian vegetation. Nearshore habitat areas provide many critical functions including:

- Habitat for fish/wildlife;
- Nutrient processing;
- Wave and current energy buffering; and
- Foraging, rearing, refuge, migration for fish/wildlife.

4.3.1 Wetlands

Tidal marshes include salt and freshwater habitats that experience tidal inundation (KCDNR, 2001). Several wetlands have been mapped by various sources in the City's shoreline jurisdiction. According to the 1987 National Wetlands Inventory (NWI), the entire marine nearshore area in the city limits and UGA boundary is designated as a Class 1 "estuarine intertidal regular unconsolidated shore" wetland. The King County Sensitive Areas Map Folio (King County, 1990) also identifies intertidal wetlands encompassing the entire nearshore area within the City's boundaries.

One non-tidal wetland has been documented in the City's marine nearshore zone (Tetratech/KCM, 2003c). This palustrine forested wetland is less than one acre in size and is associated with Barnacle Creek. Priority habitats and species data indicate that a small (less than 1 acre) scrub/shrub wetland associated with Coyote Creek is also located in the marine nearshore zone.

4.3.2 Marine Riparian Zones

Marine riparian vegetation is defined as vegetation overhanging the intertidal zone (King County DNR, 2001). Marine riparian zones function by: protecting water quality; providing wildlife habitat; regulating microclimate; providing shade, nutrients and prey; stabilizing banks; and providing large woody debris (Anchor Environmental and People for Puget Sound, 2002). Vegetated marine riparian zones are lacking within the marine nearshore area in the city limits (WDNR, 2001).

4.3.3 Banks and Bluffs

Banks and bluffs are part of the riparian zone and function by providing sediment to adjacent beaches, habitat to bluff-dwelling animals, rooting area for riparian vegetation, and a source of groundwater seepage to marine waters (King County DNR, 2001). Shoreline development and armoring, vegetation clearing, and changes in hydrology, among others, can adversely impact bluffs. The ShoreZone Inventory (WDNR, 2001) maps indicate that there are moderate height inclined cliffs composed of fines/mud and sand in the areas north of and surrounding Richmond Beach Park.

4.3.4 Beaches and Backshore

Beaches are generally steeper than tidal flats (King County DNR, 2001). Backshore areas are immediately landward of beaches and are zones inundated by storm-driven tides. A typical profile of an undisturbed shoreline in Central Puget Sound would include an upper backshore or storm berm area that collects logs, algae, and other debris during storms (King County DNR, 2001). The intertidal portion of the beach is typically relatively steep and comprised of a mixture of cobbles and gravel in a sand matrix (King County DNR, 2001).

Sediment abundance throughout the City's beaches is characterized predominantly as "moderate." Erosional areas are located south of the Innis Arden Reserve.

4.3.5 Flats

Flats generally include gently sloping sandy or muddy intertidal or shallow subtidal areas (King County DNR, 2001), and are used by juvenile salmonids, shorebirds, and shellfish, among others. Flats are generally located at the mouths of streams where sediment transported downstream is deposited, and in areas of low wave and current energies where longshore waves and currents deposit sediment (King County DNR, 2001). Sand flats are located in the vicinity of the Barnacle and Boeing Creek outlets. Sand and gravel flats are mapped in the Point Wells area, extending to the mouth of Barnacle Creek.

4.3.6 Eelgrass Meadows

The importance of eelgrass has been described in various sources, including the *Reconnaissance Assessment of the State of the Nearshore Environment* (King County DNR, 2001). Eelgrass beds are found in intertidal areas and provide feeding and rearing habitat for a large number of marine organisms. Eelgrass beds have been documented in Puget Sound in the marine nearshore areas within the city limits (Woodruff et al., 2001 and WDNR, 2001). Eelgrass has been documented throughout the entire marine nearshore area of the City of Shoreline, and are most dense north and south of the mouth of Boeing Creek (Woodruff et al., 2001).

4.3.7 Kelp Forests

The function of kelp has been described in *Reconnaissance Assessment of the State of the Nearshore Environment* (King County DNR, 2001). Kelp provides habitat for many fish species, including rockfish and salmonids, potential spawning substrate for herring, and buffering of shorelines from waves and currents, among other functions. A change in kelp distribution may indicate the coarsening of shallow subtidal sediments (such as that caused by erosion related to a seawall) or an increase in nutrient loading (such as from sewage effluent). Kelp is sporadic and limited in its extent throughout the marine nearshore areas within the city limits (Woodruff et al., 2001).

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Item #	Draft Code Section	Questions/Comments (as of 1/__/05 through 1/31/05)	Staff Response
1	**Definitions**		
2	**20.20.046 C definitions.** **Critical Areas** An area with one or more of the following environmental characteristics: A. Geologic hazard areas, including but not limited to: Steep slopes; Landslide hazard areas; Seismic hazard areas; and Erosion hazard areas; B. Flood ~~plain~~hazard areas; ~~C. Soils classified as having high water tables;~~ ~~D. Soils classified as highly erodible, subject to erosion, or highly acidic;~~ ~~E. Seismic hazard areas;~~ ~~F~~C. Stream corridors; ~~G. Estuaries;~~ ~~H~~D. Aquifer recharge areas; E~~I~~. Wetlands ~~and wetland transition areas~~; and F~~J~~. Fish and wildlife ~~H~~habitat conservation areas~~s of endangered species~~. (Ord. 352 § 1, 2004).	Chapter 20.20 Definition of "Critical Areas" Steep Slopes was removed as one of the characteristics of a critical area, yet in a number of places in the CAO, there is still reference to "steep slopes". Why were soils having high water tables removed? What was the purpose of having highly acidic soils as part of a critical area and why was it removed? You removed Estuaries from the definition. I assume because Shoreline doesn't have any. We don't have any Aquifer recharge areas either. Why wasn't that removed? You removed a "wetland transition area" from the definition. What is that and why was it removed? Do fish and wildlife habitat conservation areas cover more than just endangered species? If so, section F is broader than what was there before, because only conservation areas of endangered species were covered.	All of the items referenced in the comment were removed in order to clearly identify the critical areas identified by the GMA, wetlands, geologic hazard areas, aquifer recharge areas, fish and wildlife habitat areas, flood hazard areas, and streams. The term endangered species was removed from the definition specifically because fish and wildlife habitat areas typically include listed, threatened, priority and endangered species. This is explained in SMC20.80.230(A).

Item #	Draft Code Section	Questions/Comments (as of 1/__/05 through 1/31/05)	Staff Response
3	**20.20.22 F definitions.** **Flood Hazard Areas** Those areas in the City of Shoreline subject to inundation by the base flood including, but not limited to, streams, lakes, wetlands and closed depressions.	A "Flood Plain" is an ecosystem while a "Hazard" area is a completely different issue.	Staff agrees with this comment
4	**20.20.024 H definitions.** **Hazardous Trees** Trees that have a structural defect, combination of defects or disease resulting in a structural defect that, under the normal range of environmental conditions at the site, will result in the loss of a major structural component of that tree in a manner that will: 1. 1. Damage a residential structure or accessory structure, place of employment or public assembly or approved parking for a residential structure or accessory structure or place of employment or public assembly; 2. Damage an approved road or utility facility; or 3. Prevent emergency access in the case of medical hardship. Removal of hazardous trees shall occur consistent with the tree conservation permitting and site restoration requirements of SMC 20.50.290 to 20.50.370.	The word "will" in the 6th line of the definition should be "may". The way the definition reads now, a tree is hazardous only if a structural defect will result in a loss of a major structural component of the tree. It should be that the defect may cause a loss of a major component and then only if the loss would in all likelihood damage the items in subparagraphs 1and 2, or may prevent access as in subparagraph 3. The final sentence is not actually part of the definition of a hazardous tree and should probably be moved to another section.	The term "will" is used in context of the recommendation of an arborist as required to determine if a tree is hazardous or not. Determination of a hazardous tree is typically done under emergency circumstances, using the term "may" allows for wide speculation on the future viability of a tree or it's structural component. The final sentence, while not part of the definition, guides the reader to the relevant code section.

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5	**20.20.046 S definitions.** **Streams** Those areas in the City of Shoreline where open surface waters produce a defined channel or bed, not including irrigation ditches, canals, storm or surface water runoff devices or other entirely artificial open watercourses, unless they are used by salmonids or are used to convey streams naturally occurring prior to construction ~~in such watercourses~~. A channel or bed need not contain water year-round, provided that there is evidence of at least intermittent flow during years of normal rain fall.	Remove the phrase "in the City of Shoreline." It puts this definition in conflict with the one later in the code and if a portion of a stream is outside but immediately adjacent to our City limits, we should afford it the same level of protection that we provide to the portion of the stream within our City. In Stream Definitions, it is not clear why the word "open" has been added. It would seem the CAO would encourage and promote the day lighting of streams whenever and where ever feasible. Please clarify in a plain language summary, the definition of "stream" to include artificial created watercourses that may convey fish. How do buffers apply to piped watercourses that may be defined as a stream? By adding the term "open" to the definition, it seems to say that a stream can never run through a pipe even for a short distance and still be called a stream while it is in the pipe. The obvious outcome of that analysis would be that buffers would disappear for the portion of the stream in the pipe, even though fish could still easily pass through. I can understand that if the "stream" is piped in over a long distance that it at some point loses its ability to be a stream, but I think the distinctions drawn in the document between open and covered and natural and artificial need to be looked at closer.	Agreed, "in the City of Shoreline" in unnecessary and could be deleted. Regarding "open," the current definition appears to only apply to open stream channels based on the wording "surface waters produce a defined channel or bed." Adding the word "open" further clarifies that it does not apply to underground/piped waters. The CAO does encourage daylighting (see SMC 20.80.480(I). Critical areas regulations are required to protect the "functions" of critical areas. For streams, buffer functions include shade, climate, woody debris, and sediment and pollution removal. These functions no longer are effective or they operate differently, when a stream is piped. For example, no longer is there justification to preserve shading when a stream is in a pipe. For short pipe sections, it is likely that buffers extending from the ends of the adjacent stream channel would also "buffer" the piped section. .
6	**Tree Conservation, Land Clearing and Site Grading Standards**		
7	**20.50 Tree Conservation, Land Clearing and Site Grading Standards**	What is a significant tree and where is it defined?	Significant trees are defined in SMC 20.20.048 under Tree, significant.

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8	**20.50.300 General requirements.** A. Tree cutting or removal by any means is considered a type of clearing and is regulated subject to the limitations and provisions of this subchapter.	Are "pruning" and "cutting" a tree the same?	A director's interpretation of this section was issued in March of 2001. It is included as "Attachment II" at the end of the comments.
9	**20.50.310 Exemptions from permit.** A. **Complete Exemptions.** The following activities are exempt from the provisions of this subchapter and do not require a permit: … 6. Removal of trees from property zoned RB & I, CB & NCBD and NB &O, unless within a Critical Area or Critical Area Buffer.	Why do we want to exclude commercial zoning districts from the provisions of tree conservation? Can't we have businesses and trees in the same area?	Most stands of significant trees are in residential zones. Retention of trees on Commercial sites often results in site design that limits redevelopment.
10	**20.50.310 Exemptions from permit.** B. **Partial Exemptions.** With the exception of the general requirements listed in SMC 20.50.300, the following are exempt from the provisions of this subchapter, provided the development activity does not occur in a critical area or critical area buffer. For those exemptions that refer to size or number, the thresholds are cumulative during a 36-month period for any given parcel: 1. The removal of up to six significant trees (see Chapter 20.20 SMC, Definitions) and associated removal of understory vegetation from any property. 2. Landscape maintenance and alterations on any property that involves the clearing of less than 3,000 square feet, or less than 1,500 square feet if located in a critical drainage area, provided the tree removal threshold listed above is not exceeded. (Ord. 238 Ch. V § 5(C), 2000).	Practically, how does the City keep track of how many significant trees are removed from a property unless there is a complaint? Wouldn't it be better to replace a significant tree concept with a percentage of total trees allowed to be removed? i.e. can't remove more that 10% or 20% of trees without a permit.	The city currently does not keep a running total of trees cut on a parcel, especially if we are not notified of the cutting. Staff does not have an opinion whether a percentage system would work better or not.

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11	**20.50.330(A)(5) Project review and approval.** A. **Review Criteria.** The Director shall review the application and approve the permit, or approve the permit with conditions; provided that the application demonstrates compliance with the criteria below. … 5. All required bonds or other assurance devices are posted with the City.	It looks like something was deleted from this paragraph (A)(5). Was it?	No changes are proposed to this section.
12	**20.50.350 Development standards for clearing activities.** A. No trees or ground cover shall be removed from critical area or buffer unless the proposed activity is consistent with the critical area standards.	When can you remove a plant defined as a noxious weed by the State from a critical area? i.e. Can you remove English Ivy from a Landslide area even though you may improve the health of the area while degrading the ability of the area to withstand a landslide?	The removal of an invasive species is exempted by SMC 20.80.030(H), a proposed exemption to encourage conservation and enhancement activities, such as the planting of native vegetation.
13	**20.50.350 Development standards for clearing activities.** … F. **Landmark Trees.** Trees which have been designated as landmark trees by the City of Shoreline because they are 30 inches or larger in diameter or particularly impressive or unusual due to species, size, shape, age, historical significance and/or is an outstanding row or group of trees, has become a landmark to the City of Shoreline or is considered a specimen of its species shall not be removed unless the applicant meets the exception requirements of subsection (B) of this section. The Director shall establish criteria and procedures for the designation of landmark trees. (Ord. 238 Ch. V § 5(G), 2000).	How high up the tree do you measure the diameter of a Landmark Tree?	The diameter of any tree is measured at breast height as defined under “tree, significant” in SMC 20.20.048.

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15	**Critical Areas – General Provisions**		
16	**20.80.010 Purpose.** … B. By identifying and regulating development and alterations to critical areas and their buffers, it is the intent of this chapter to: … 1. Protect the public from injury, loss of life, property damage or financial losses due to flooding, erosion, landslide, seismic events, soils subsidence or steep slope failure;	The last line refers to "steep slope" failure. You previously removed the definition of steep slope from the chapter so this reference needs to be changed.	The definition of "steep slope hazard areas" remains in the code (SMC 20.20.046(S)).
17	**20.80.020 Critical areas maps.** A. The approximate location and extent of identified critical areas within the City's planning area are shown on the critical areas maps adopted as part of this chapter. These maps shall be used for informational purposes only to assist property owners and other interested parties. Boundaries and locations indicated on the maps are generalized. Critical areas and their buffers may occur within the City which have not previously been mapped. B. The actual presence or absence, type, extent, boundaries, and classification of critical areas shall be identified in the field by a qualified professional, and determined by the City, according to the procedures, definitions and criteria established by this chapter. In the event of any conflict between the critical area location or designation shown on the City's maps and the criteria or standards of this chapter, the criteria and standards shall prevail.	Need to focus closely on how the regulations actually affect a property owner, and in particular whether the CAO will place affirmative duties on a property owner to comply with the terms of the CAO. Does an owner who is planning to develop or modify his property have an affirmative duty to determine if his property includes a critical area, if his property is not included on any of Shoreline's critical area maps? Or is it the obligation of the City to determine whether the property includes a critical area. Section (A) suggests that the maps are for informational purposes only, but when will the city be able to force a property owner to provide geotechnical info on his property if the property is not within the general critical areas on the maps?	Staff is currently producing a City wide critical areas maps that will depict areas of known critical areas. This map will serve as a type of warning that critical areas may be present on a property. The City may then require further studies, at the applicant's expense to determine the extent of critical areas on the property. The authority is provided under SMC 20.30.110(D). For geotechnical critical areas, the City relies on variety of sources to determine if a parcel has slopes over 15%, the first of which is site topography. If it is clear that a site has slopes greater than 15%, they fall under the provisions of the critical areas ordinance.

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18	**20.80.030 Exemptions.** The following activities shall be exempt from the provisions of this chapter: … I. Removal of hazardous trees in accordance with SMC 20.50.310(A)(1). **20.50.310 Exemptions from permit.** A. **Complete Exemptions.** The following activities are exempt from the provisions of this subchapter and do not require a permit: 1. Emergency situations ~~on private property~~ involving danger to life or property or substantial fire hazards. ~~Any~~ hazardous tree ~~or vegetation which is an immediate threat to public health, safety, or welfare, or property~~ may be removed without first obtaining a permit regardless of any other provision contained in this subchapter. If possible, trees should be evaluated prior to removal using the International Society of Arboriculture method, Hazard Tree Analysis for Urban Areas, in its most recent adopted form. The party removing the tree ~~will~~ shall contact the City regarding the emergency, if practicable, prior to removing the tree, and no later than one working day following the emergency. After the emergency, the person or agency taking the action shall conduct a professional evaluation and perform site restoration consistent with SMC 20.50.330 and 20.50.360.	The revisions for clearing create an overly large loophole. Hazard trees in critical areas can be removed without advance notice, even if there is no imminent threat. 48 hours advance notice should be required unless there is an imminent threat, meaning that there is a significant risk of loss of life or property in that 48 hour period. I could see this happening if a major windstorm were coming, but it couldn't be used as an emergency excuse during a calm summer day. The advance notice would provide an opportunity for the city to review the hazard determination while the tree is still standing, and perhaps avoid some ex post facto debates.	The existing code section states that, "if possible, trees should be evaluated prior to removal…" the section further states that the party removing the tree shall contact the City prior to removing the tree if possible.

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19	**20.80.030 Exemptions.** … G. Activities occurring in areas which may be considered small steep slopes (areas of 40 percent slope or greater with a vertical elevation change of up to, but not greater than 20 feet), such as berms, retaining walls, excavations and small natural slopes, and activities on steep slopes created through prior legal grading activity may be exempted based upon City review of a soils report prepared by a qualified geologist or geotechnical engineer which demonstrates that no adverse impact will result from the exemption;	Is the parenthetical beginning on line 2 the definition for "all steep slopes" or just "small steep slopes"? Why do we have a definition for small steep slopes when it is not referred to in the rest of the CAO? Maybe we want to call it something other than small steep slopes. There are references later on to moderate hazard and high hazard areas based on the slope of a hillside in the Landslide definitions. The "steep slope" concept is confusing when the CAO is viewed as a whole.	This section is not proposed to be altered during this critical areas update. We do not have a definition of "small steep slopes" in the critical areas ordinance because they are exempted from the ordinance.

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20	**20.80.030 Exemptions.** … J. View preservation and enhancement programs may be permitted in Critical Areas and their buffers if a Critical Area Stewardship Plan is approved as a Clearing Permit under SMC 20.50.290 and 20.50.300. The Critical Area Stewardship Plan must meet all of the following criteria: 1. The Plan will result in no net loss of the functions and values of each critical area. 2. The Plan will maintain or enhance the natural hydrologic systems on the site. 3. The Plan will maintain, enhance or restore native vegetation on the site. 4. The Plan will maintain habitat for fish and wildlife on the site and enhance the existing habitat. The Plan may be phased. A performance bond or other acceptable security device to ensure the implementation of the plan may be required in an amount to be determined by the Director. The Director may require submittal of periodic monitoring reports as necessary to ensure that the criteria of the plan are being met. The contents of the monitoring report shall be determined by the Director, and may be subject to third party review, paid for by the applicant, at the Director's discretion.	With respect to view preservation (covenants), could this provision be used by other areas/neighborhoods who might pre-emptively create some kind of neighborhood association with their own "view" covenants to allow them to top or remove trees more so than otherwise would be allowed under code? We need to remember that we all have "views" (i.e. the Sound is not the only kind of "view") that someone might want to protect. This appears to be the only "non-environmental" function and value we offer special protection to. Does this set any kind of unintended legal precedent to open up other non-environmental parameters for protection? I like this new section allowing for view preservation in critical areas. My understanding of tree cutting and view preservation is as follows. If you are not in a critical area, you can preserve your view by cutting down trees, (or topping trees?) as long as you cut down trees less than 8" in diameter. And if they are in excess of 8", then you can cut down up to 6 in a 36 month period of time. If you are in a critical area, before this section was added, you couldn't cut any trees down. Now you can file a critical area stewardship plan which once approved by the city, would allow the critical area to be modified for view preservation and enhancement according to the plan. A performance bond should always be required. Change "may" to "will".	The City of Shoreline is under no obligation to adhere to the covenants of any homeowners association. If a property owner met the provisions of this code section, certain trees could be removed. No precedent would be established unless an amendment was adopted. Staff concurs with this general interpretation of the code. In very few cases, the small amount of a bond is less than the cost to maintain the file on the bond. In this case, a bond may not be required.

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21	**20.80.030 Exemptions.** … ~~I~~L. Educational activities, scientific research, and outdoor recreational activities, including but not limited to interpretive field trips, bird watching, and use of existing trails for horseback riding, bicycling and hiking, that will not have an adverse effect on the critical area;	According to this paragraph, you can use existing trails through critical areas for horseback riding. It is hard to imagine that such a use would not have an adverse impact on a critical area. And I note that horseback riding on trails next to streams or fish and wildlife habitats is not one of the examples used to describe non intrusive uses later in the CAO. Are there any parts of Shoreline where you can actually keep horses? If not, then maybe this section should be revised. At least keep horses on trails used by horses, as opposed to any trail that now exists in Shoreline.	Staff agrees that "horseback riding" should be deleted. Should "swimming" at "beaches" be allowed?
22	**20.80.030 Exemptions.** … ~~K~~N. Minor activities not mentioned above and determined by the City to have minimal impacts to a critical area;	What is the definition of "minimal"?	We are open to suggestions for improving the wording of this exemption, but feel that it is important to have an exemption so that a permit process is not required for all minor activities that have no measurable impact.
23	**20.80.030 Exemptions.** … P. Up to six significant trees may be removed from a critical area or a critical area buffer if a Clearing Permit is approved under SMC 20.50.290 and 20.50.300 and includes sufficient mitigation so that there is no net loss of the functions and values of each type of critical area.	Ch 20.80.030 P says that even in a critical area, you can cut down up to 6 significant trees if you get permission and mitigate. The definition of significant tree (8") makes sense only sometimes. Net Loss. This is problematic in that there is a functional loss with each tree removed. The removal of six trees on most suburban lots could be considered significant. Even restored there is a net loss between the time of restoration and functional maturity.	Non-significant trees would fall under exemption SMC 20.80.030(M) routine maintenance of existing landscaping. To qualify for "no net loss" under this exemption, a qualified professional in the field of the critical area affected would determine the level of protection to ensure "no net loss" of functions and values.

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24	**20.80.040 Partial exemptions.** A. The following are exempt from the provisions of this chapter except for the notice to title provisions and the flood hazard area provisions, if applicable. 1. Structural modification of, addition to, or replacement of structures, except single detached residences, in existence before November 27, 1990, which do not meet the building setback or buffer requirements for wetlands, streams or steep slope hazard areas if the modification, addition, replacement or related activity does not increase the existing building footprint of the structure lying within the above-described building setback area, sensitive area or buffer; 2. Structural modification of, addition to, or replacement of single detached residences in existence before November 27, 1990, which do not meet the building setback or buffer requirements for wetlands, streams or steep slope hazard areas if the modification, addition, replacement or related activity does not increase the existing footprint of the residence lying within the above-described buffer or building setback area by more than 750 square feet over that existing before November 27, 1990, and no portion of the modification, addition or replacement is located closer to the critical area or, if the existing residence is within the critical area, extend farther into the critical area; and	Why is there a distinction between structures that are not single family detached residences, (paragraph A 1) and single family detached residences, (paragraph A 2)? One allows changes as long as the footprint isn't modified. The other allows up to a 750 sq. foot addition to the footprint. I thought we eliminated the square foot requirement when we addressed technical changes to this part of the code a year ago. If not, we should eliminate it now. The real issue is whether the modification impacts the critical area's values and functions. It has nothing to do with the size of the modification. As an example, take a U shaped building wholly within a critical area. Why shouldn't a property owner be able to change the U into a rectangular building? And what difference does it make whether it is single family or not? Both paragraphs (1 and 2) refer to "steep slope hazard areas". This is an undefined term.	This section establishes slightly different standards for single family residences as opposed to other structures. No change is proposed for this section. Steep slopes are defined in SMC 20.20.046

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25	**20.80.040 Partial exemptions.** … B. A permit or approval sought as part of a development proposal for which multiple permits are required is exempt from the provisions of this chapter, except for the notice to title provisions, as applicable if: 1. The City of Shoreline has previously reviewed all critical areas on the site; and 2. There is no material change in the development proposal since the prior review; and 3. There is no new information available which may alter previous critical area review of the site or a particular critical area; and 4. The permit or approval under which the prior review was conducted has not expired or, if no expiration date, no more than five years have lapsed since the issuance of that permit or approval; and 5. The prior permit or approval, including any conditions, has been complied with. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(H), 2000. Formerly 20.80.080.).	This section seems to exempt large developments from the CAO. Does this mean if you need a grading permit and a building permit that the entire development is exempted from the CAO? Or does this mean that once a development is approved and you apply for an additional permit related to the development, that it doesn't allow the city to re-review its approvals if the new permit doesn't impact the critical area? This entire paragraph is unclear and needs to be redrafted to clarify what it is intended to cover.	This does not exempt large developments from the CAO. The exemption makes it so that review is not required multiple times for the same project. For example, if critical areas review is conducted for a plat and the conditions remain the same, then a second round of review is not require to build the individual houses of that plat. No changes are currently proposed, but staff could work on improving clarity if seen as a priority.

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26	**20.80.050 Notice to title.** A. To inform subsequent purchasers of real property of the existence of critical areas, ~~W~~when development is permitted in an identified critical area ~~which is comprised of a regulated critical area~~ or its associated buffer, a notice to title applicable to the property shall be filed with the King County Department of Records. The notice shall state that critical areas or buffers have been identified on the property and the fact that limitations on actions in or affecting the critical area or buffer may exist. The notice shall run with the land. This notice shall not be required for development by a public agency or public or private utility when: 1. Within a recorded easement or right-of-way; or 2. On the site of a permanent public facility. ~~the area shall be placed either in a separate tract on which development is prohibited, protected by execution of an easement, dedicated to a conservation organization or land trust, or similarly preserved through a permanent protective mechanism acceptable to the City. The location and limitations associated with the critical area shall be shown on the face of the deed or plat applicable to the property and shall be recorded with the King County Department of Records.~~ B. Subdivisions, short subdivisions, development agreements, and binding site ~~plans which include critical areas or their buffers~~ shall establish a separate tract (a critical areas tract) as a permanent protective measure for wetlands, streams, fish and wildlife habitat, landslide hazard areas and their buffers. The plat or binding site plan for the project shall clearly depict the critical areas tract, and shall include all of the subject critical area and any required buffer, as well as additional lands, as determined by the developer. Restrictions to development within the critical area tract shall be clearly noted on the plat or plan. Restrictions shall be consistent with this chapter for the entire critical area tract, including any additional areas included voluntarily by the Developer. Should the critical area tract include several types of critical areas the developer may wish to establish separate critical areas tracts. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 1(M), 2000. Formerly 20.80.130.).	While it is important for prospective purchasers to be made aware that land they are contemplating buying has a critical area on it, it is difficult to understand how the tract will be legally described when by their nature, critical area boundaries and their buffers are ever changing. In addition, forcing property owners to alert prospective purchasers of the possibility of critical areas will in some cases substantially reduce the value of the land in question.	The notice to title does not require a property owner to delineate the boundaries of a critical area that may be on their property. It is true that the presence of a critical area may subtract from the value of a property.

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27	**20.80.080 Alteration or development of critical areas – Standards and criteria.** ~~All impacts to critical areas functions and values shall~~ ~~be mitigated~~.This section applies to mitigation required with all critical areas reviews, approvals and enforcement pursuant to this Chapter. This section is supplemented with specific measures under subchapters for particular critical areas. The proponent for a project involving critical areas shall seek to avoid, minimize and mitigate the impacts to the critical areas through ~~Mitigation~~ actions ~~by an applicant or property ownershall~~that occur in the following sequence:	Where it states "projects that involve critical areas shall seek to avoid, minimize…", I suggest removing "seek to". It's too soft.	Agreed; propose to remove "seek to" from the statement.
28	**Geologic Hazard Areas**		
29	**20.80.220 Classification.** Geologic hazard areas shall be classified according to the criteria in this section as follows: A. **Landslide Hazard Areas.** Landslide hazard areas are classified as ~~"Class I", "Class II", "Class III" or "Class IV"~~ as follows: ~~1. Class I/Low Hazard: Areas with slopes of less than 15 percent.~~ ~~2~~1. ~~Class II~~/Moderate Hazard: Areas with slopes between 15 percent and 40 percent and that are underlain by soils that consist largely of sand, gravel or glacial till. ~~3~~2. ~~Class III~~/High Hazard: Areas with slopes between 15 percent and 40 percent that are underlain by soils consisting largely of silt and clay. ~~4~~3. ~~Class IV~~/Very High Hazard: Areas with slopes steeper than 15 percent with zones of emergent water (e.g., springs or ground water seepage), areas of landslide deposits regardless of slope, and all steep slope hazard areas sloping 40 percent or steeper. B. **Seismic Hazard Areas.** Seismic hazard areas are lands that, due to a combination of soil and ground water conditions, are subject to severe risk of ground shaking, subsidence or liquefaction of soils during earthquakes. These areas are typically underlain by soft or loose	Concerned with how a slope is calculated. Tim told me that an average is taken to determine a slope. So if you had a slope, a portion of which was less than 15% and portions that were more than 15%, the average would be taken? Why is the phrase, "steep slope hazard" included? It seems to confuse things in several ways. First, steep slopes are no longer defined. Second, it suggests that there are areas sloping 40% or more that are not very high hazard areas, and it isn't clear why. Third, it doesn't seem to add anything. If an engineered solution developed by a qualified professional fixes slide/erosion/earthquake hazards on my site (including the proposed 50 ft buffer), will my site be removed from the critical area designation? If not, then why not?	The definition for steep slope hazard area reads, in part, "Those areas in the City of Shoreline on slopes 40 percent or steeper within a vertical elevation change of at least 10 feet. A slope is delineated by establishing its toe and top and is measured by averaging the inclination over at least 10 feet of vertical relief." The average would be taken from the top to the toe of the slope, not an average of the applicant's choice. Slopes less than 40% would be measured in a similar manner. If grading/engineering removes the hazard completely, then it may no longer exist and would no longer require protection. However, engineering solutions often mitigate without removing the hazard. In those cases, the hazard would continue to be regulated for future development.

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	saturated soils (such as alluvium) and have a shallow ground water table. C. **Erosion and Sedimentation Hazards.** Erosion hazard areas are lands or areas underlain by soils identified by the U.S. Department of Agriculture Natural Resources Conservation Service (formerly the Soil Conservation Service) as having "severe" or "very severe" erosion hazards. This includes, but is not limited to, the following group of soils when they occur on slopes of 15 percent or greater: Alderwood-Kitsap (AkF), Alderwood gravely sandy loam (AgD), Kitsap silt loam (KpD), Everett (EvD) and Indianola (InD). ~~D. **Steep Slopes.** Steep slopes are those areas sloping 40 percent or steeper.~~ (Ord. 238 Ch. VIII § 3(B), 2000).		
30	**20.80.230 Required buffer areas.** … C. For landslide hazard areas, the standard buffer shall be 50 feet from all edges of the landslide hazard area. Larger buffers may be required as needed to eliminate or minimize the risk to people and property based on a geotechnical report prepared by a qualified professional.	Why are buffers the same for moderate, high and very high landslide areas?	Staff agrees that variation on buffers may be warranted for different slopes.
31	**20.80.230 Required buffer areas.** … ~~C~~D. Landslide hazard area ~~B~~buffers may be reduced to a minimum of 15 feet when technical studies conclusively demonstrate that the reduction will adequately protect people and the proposed and surrounding development from the ~~critical~~ landslide hazard.	Can a technical study ever "conclusively" show anything? It seems to me that the study should not be showing that people will be protected but that the risk of a slide is not increased. If no additional risk of a slide is caused by a development, then the buffer should be allowed to be reduced down to the minimum of 15 feet.	Might consider changing language to "demonstrates that the reduction will not increase the risk of the hazard to people and property on or off site."
32	**20.80.240 Alteration.** A. The City shall approve, condition or deny proposals in a geologic hazard area as appropriate based upon the effective mitigation of risks posed to property, health and safety. The objective of mitigation measures shall be to render a site containing a geologic hazard as safe	The second sentence in this paragraph is not possible. I don't think mitigation measures can ever make a geologic hazard as safe as an area not containing a geologic hazard. And further, this paragraph says that if mitigation cannot "eliminate" the risk, then the proposal to alter the critical area should be denied. Paragraph A only applies to moderate and high landslide areas as paragraph B says	The elimination of a geologic hazard is the objective of mitigation measures. Although all risks may not be eliminated, this section requires that the applicant eliminate significant risk. Staff agrees with the last sentence of this comment.

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	as one not containing such hazard. Conditions may include limitations of proposed uses, modification of density, alteration of site layout and other appropriate changes to the proposal. Where potential impacts cannot be effectively mitigated, ~~or where the~~ to eliminate a significant risk to public health, safety and ~~welfare, public or private property~~, or important natural resources ~~is significant notwithstanding~~ ~~mitigation,~~ the proposal shall be denied. B. ~~**Class IV**~~**Very High Landslide Hazard Areas.** Development shall be prohibited in ~~Class IV~~ (very high) landslide hazards areas or their buffers except as granted by a critical areas special use permit or a critical areas reasonable use permit. C. ~~**Class II, III, IV**~~**Moderate and High Landslide Hazards.** Alterations proposed to ~~Class II, III,~~ and ~~IV~~moderate and high Landslide Hazards or their buffers shall be evaluated by a qualified professional through the preparation of the geotechnical report. However, for proposals that include no development, construction, or impervious surfaces, the City, in its sole discretion, may waive the requirement for a geotechnical report. The recommendations contained within the geotechnical report shall be incorporated into the alteration of the landslide hazard area or their buffers. The geotechnical engineer and/or geologist preparing the report shall provide assurances that the risk of damage from the proposal, both on-site and off-site, are minimal subject to the conditions set forth in the report, that the proposal will not increase the risk of occurrence of the potential landslide hazard, and that measures to eliminate or reduce risks have been incorporated into the report's recommendations.	no changes are allowed at all to a very high hazard area except through reasonable or special use permits. The new language added to paragraph C directly contradicts paragraph A in that it seems to allow for a modification to be approved if a geotechnical engineer states that measures simply to "reduce" a risk have been incorporated into the plan. Paragraph A requires "elimination" of the risk. The final unreferenced subsection to paragraph C was moved from paragraph F. Had it been left as its own paragraph, it would have allowed a property owner to get a geotechnical engineer to prepare a report for any alteration to a geologic hazard area. Now you can only do so for a moderate or high (not very high) landslide hazard area. Did you mean to limit an owner's right to alter a critical area to Landslide hazard areas only?	Alterations to very high hazard areas are not allowed, hence their exclusion from this section. Staff does not agree that moving the paragraph changes the requirements of an application or specific piece of property.

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33	**20.80.240(E) Erosion Hazard Areas.** … 4. Where the City of Shoreline determines that erosion from a development site poses a significant risk of damage to downstream receiving water, the applicant shall be required to provide regular monitoring of surface water discharge from the site. If the project does not meet water quality standards established by law or administrative rules, the City may suspend further development work on the site until such standards are met.	What is "downstream receiving water"?	"Downstream receiving water" is the water (stream, lake or sound) located down slope from the activity that would "receive" sediment or pollutants that are washed down from a site.
34	**20.80.240(E) Erosion Hazard Areas.** … 6. The use of hazardous substances, pesticides and fertilizers in erosion hazard areas may be prohibited by the City of Shoreline.	Under what circumstances "may" the City prohibit the use of pesticides and other hazardous substances? Is there an obligation of good faith? Does the City have to prove irreparable damage to something? What rights does a property owner have to object? And why is the right limited only to erosion hazard areas? Are you assuming that pesticides run off only in erosion areas? Why wouldn't there be run off from a very high landslide area or other critical areas?	The prohibition would likely be the result of site specific circumstances.
35	**20.80.250 Mitigation performance standards and requirements.** B. The following additional performance standards shall be reflected in proposals within geologic hazard areas: … 7. The use of retaining walls that allow maintenance of existing natural slope areas are preferred over graded slopes. … ~~11~~12. Development shall not increase instability or create a hazard to the site or adjacent properties, or result in a significant increase in sedimentation or erosion. (Ord. 238 Ch. VIII § 3(E), 2000).	(B)(7) Why are retaining walls preferred over graded slopes? It seems like a retaining wall is just as much of a modification as regrading the slope. (B)(12) This section contradicts Ch 20.80.240 A which says that mitigation or modification to a critical area will only be allowed if the hazard is eliminated.	Retaining walls are preferred over graded slopes because graded slopes typically contain looser material that may be distributed over time, whereas material retained behind a wall may be better managed. Section (B)(12) states that development shall not increase instability or create a hazard. Section (A) states that a proposal shall be denied when mitigation cannot eliminate a significant risk. We see no contradiction in the two sections.

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36	**Fish and Wildlife Habitat Conservation Areas**		
37	**20.80.260 Designation and purpose.** A. Fish and wildlife habitat conservation areas include nesting and breeding grounds for State and Federal threatened, endangered, critical or priority species ~~as identified~~ listed by the Washington State Department of Fish and Wildlife, including corridors which connect priority habitat, and those areas which provide habitat for species of local significance which have been or may be identified in the City of Shoreline Comprehensive Plan. … C. The City of Shoreline has given special consideration to the identification and regulation of fish and wildlife habitat conservation areas that support anadromous fisheries in order to preserve and enhance species which are or may be listed as endangered, threatened or priority species by State and Federal agencies. (Ord. 238 Ch. VIII § 4(A), 2000).	Is the word "listed" in line 4 more restrictive than the deleted word "identified"? Note that subsection A requires that certain species be listed for there to be a habitat conservation area while subsection C provides that the City may give special consideration to areas where the species is or may be listed. Paragraph (C) should be in the findings, not the code. It does not appear to be legally enforceable or implementable.	The word "listed" is more precise. State and federal agencies formally "list" threatened and endangered species. This statement falls under the Description and Purpose section, it is meant to give clarity and reason to the chapter.

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38	**20.80.270 Classification.** Fish and wildlife habitat areas are those areas designated by the City based ~~that meet~~ on any of the following criteria, review of the best available science, and input from Washington Department of Fish and Wildlife, Washington Department of Ecology and other agencies: A. The ~~documented~~ presence of species proposed or listed by the Federal government or State of Washington as endangered, threatened, critical, or priority documented by best available science; or B. The presence of heron rookeries or priority raptor nesting trees; or C. Type I wetlands, as defined in these regulations; or D. Type I streams, as defined in these regulations; or E. Those areas which include the presence of locally significant species, if the City has designated such species. (Ord. 238 Ch. VIII § 4(B), 2000).	The first paragraph seems awkward, and should be reworded. This section requires only that the species be proposed or listed. The added words, "documented by best available science" are redundant as the introductory paragraph on page 60 already provides that best available science be reviewed and modifies subsections A-E. Do we define priority raptors anywhere? Is this a reference to state listing? What is a "priority raptor nesting tree"? As an example of why the CAO is so hard to enforce, take a situation where a listed priority raptor decides to make a nest in a fir tree that is in the middle of a shopping mall parking lot. Obviously the bird is happy with the location of the nest or it wouldn't have built it there. So why do we have to place a buffer around the tree and call the shopping mall a critical area? Wouldn't it be better to just recognize that the tree is probably critical to the raptor and let it go at that? Would the CAO as written not allow the owner of the property to make changes to his shopping mall for so long as the raptor chose to have a nest in the tree?	Could move "any of the following criteria" to just before the list to improve how the first sentence reads. Staff disagrees that this should be removed. BAS establishes factual basis rather than antecdotal information. This is a reference to the state listing criteria. A priority raptor nesting tree is a tree that has been determined to contain the nest of a raptor that is listed by the Dept. of Fish and Wildlife, DOE, or other agency.

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39	**20.80.280 Required buffer areas.** A. Buffer widths for fish and wildlife habitat areas shall be based on consideration of the following factors: species specific recommendations of the Washington State Department of Wildlife; recommendations contained in a habitat management plan submitted by a qualified consultant; and the nature and intensity of land uses and activities occurring on the and adjacent to the site.	Why is there no buffer table for FWHCAs? In the absence of a table, how will buffers for FWHCAs be quantified?	There is a wide range of protection recommendations for habitat areas, depending on the type of species and how much research has been completed. Some species have recommended buffers, some have seasonal buffers (such during breading season), and others have recommended management practices, but no specific buffers.
40	**20.80.290 Alteration.** A. Alterations of fish and wildlife habitat conservation areas shall be avoided, subject to the reasonable use provision section (SMC 20.30.336) or special use permit section (SMC 20.30.333). B. Any proposed alterations permitted, consistent with special use or reasonable use review, to fish and wildlife habitat conservation area shall require the preparation of a habitat management plan, consistent with the requirements of the Washington State Department of Fish and Wildlife Priority Habitat Program. The habitat management plan shall be prepared by a qualified consultant and reviewed and approved by the City. (Ord. 238 Ch. VIII § 4(D), 2000).	Do these paragraphs read that fish and wildlife conservation areas can only be altered through the reasonable or special use permit section and then only if a habitat management plan is submitted and approved? How does this fit in with Ch 20.80.040 A which allows certain alterations to Landslide areas? Does this mean if the Landslide area is next to a stream and has overlapping buffers, the more restrictive wildlife conservation area buffer would apply?	Staff agrees with this comment. The most restrictive of any critical area buffer applies in all situations.
41	**20.80.300 Mitigation performance standards and requirements.** (For fish and wildlife habitat conservation areas.)	Suggest adding a performance standard that all stormwater must be mitigated on site. At the very least, it should be encouraged.	The City is currently using King County's 2000 surface water manual which determines drainage requirements.

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42	**Wetlands**		
43	**20.80.310 ~~Description~~ Designation and purpose.** A. Wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevelance of vegetation typically adapted for life in saturated soil conditions, as defined by the Washington State Wetlands Identification and Delineation Manual (Department of Ecology Publication #96-94). Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands. B. Wetlands help to maintain water quality; store and convey stormwater and floodwater; recharge ground water; provide important fish and wildlife habitat; and serve as areas for recreation, education, scientific study and aesthetic appreciation. ~~B~~C. The City's overall goal shall be to achieve no net loss of wetlands. This goal shall be implemented through retention of the function, value and acreage of wetlands within the City. Wetland buffers serve to moderate runoff volume and flow rates; reduce sediment, chemical nutrient and toxic pollutants; provide shading to maintain desirable water temperatures; provide habitat for wildlife; protect wetland resources from harmful intrusion; and generally preserve the ecological integrity of the wetland area.	(The second paragraph of A) Why shouldn't wetlands that are artificially but inadvertently created be preserved? Take the drainage ditch next to I-5. It was artificially created and after years of neglect now has all the ingredients of a wetland. Why shouldn't it be preserved? What would happen if you artificially move a stream because of a road and create a new stream? (This would still be a stream because it was created to mitigate the loss of an existing stream). But then what if over the years the artificial stream becomes a wetland? Is it still protected? Clearly this paragraph was added to address the drainage ditch next to I-5 that may have at one time been a branch of Thornton Creek. Why are we fighting so hard to not classify this as a wetland or a stream? Why would artificial wetlands be excluded? In Section C. it states that the goal is "no net loss". There has already been significant loss of wetlands and wetland function within the city. The Ordnance should seek to moves us in a more restorative direction.	This language was not added to address the drainage ditch next to I-5. The proposed definition language of subsection (A) is nearly verbatim from the state definition of wetlands and is consistent with Ecology's regulation of wetlands. In adding the state language, we did not seek to classify the lands along I-5 one way or the other. (See RCW 36.70A.030(20).) The intent of this section is to not punish a person who has created habitat on their property in the past, such as a trout pond, marsh area, etc.

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44	**20.80.320 Classification.** Wetlands, as defined by this section, shall be ~~designated Type I, Type II, Type III, Type IV and artificial~~classified according to the following criteria: A. "Type I wetlands" are those wetlands which meet any of the following criteria: 1. The presence of species proposed or listed by the Federal government or State of Washington as endangered, threatened, critical or ~~monitored~~priority, or the presence of critical or outstanding actual or potential habitat for those species; or 2. Wetlands having 40 percent to 60 percent open water in dispersed patches with two or more wetland subclasses of vegetation; or 3. High quality examples of a native wetland listed in the terrestrial and/or aquatic ecosystem elements of the Washington Natural Heritage Plan that are presently identified as such or are determined to be of Heritage quality by the Department of Natural Resources; or 4. The presence of plant associations of infrequent occurrence. These include, but are not limited to, plant associations found in bogs and in wetlands with a coniferous forested wetland class or subclass occurring on organic soils. B. "Type II wetlands" are those wetlands which are not Type I wetlands and meet any of the following criteria: 1. Wetlands greater than one acre (43,560 sq. ft.) in size; 2. Wetlands equal to or less than one acre (43,560 sq. ft.) but greater than one-half acre (21,780 sq.ft.) in size and have three or more wetland classes; or 3. Wetlands equal to or less than one acre (43,560 sq. ft.) but greater than one-half acre (21,780 sq.ft.) in size, and have a forested wetland class or subclasses. C. "Type III wetlands" are those wetlands that are equal to or less than one acre in size and that have one or two wetland classes and are not rated as Type IV wetlands, or wetlands less than one-half acre in size having either three wetlands classes or a forested wetland class or subclass.	Are there any size limitations for a Type I Wetland? If not, can a Type I wetland be a Type II, III or IV wetland too, depending on its size? I think there needs to be a size limit for Type I wetlands. I am not sure what the term "wetland classes" means in Ch 20.80.320 B 2. Does it mean that there can be a type II wetland if it has 3 or more of the criteria that define a type I wetland? If that is not what was intended, then I don't know what a "wetland class" is. And if that is what was intended, then the term wetland class should be changed to read, "wetland criteria in Ch 20.80.320 A". In fact, anywhere in these subsections where the term "wetland class" appears, the term "class" should be changed to "criteria in Ch 20.80.320 A". (E) The concept of accidentally creating a wetland has been removed from the CAO. Accidentally created wetlands are not addressed anywhere in the CAO. Do we want to address this issue?	While there is no size limitation, a Type I wetland is not also a Type II, III, or IV wetland (although it may be inclusive of the characteristics of those wetlands). If a wetland, of any size, meets any of the criteria of a Type I wetland, then it is a Type I wetland. If a wetland is not a Type I wetland, and it meets any of the criteria for a Type II wetland, then it is a Type II wetland. And so on. In accordance with the definition of wetlands, wetlands do not include those "artificial wetlands intentionally created." Therefore, "accidental" wetlands, or wetlands that slowly develop over time, are regulated as wetlands under this code.

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	D. "Type IV wetlands" are those wetlands that are equal to or less than 2,500 square feet, hydrologically isolated and have only one, unforested, wetland class. ~~E. "Artificially created wetlands" are those landscape features, ponds and stormwater detention facilities purposefully or accidentally created. Artificially created wetlands do not include wetlands created as mitigation or wetlands modified for approved land use activities. Purposeful or accidental creation must be demonstrated to the City through documentation, photographs, statements or other evidence. Artificial wetlands intentionally created from nonwetland sites for the purposes of wetland mitigation are regulated under this subchapter.~~ (Ord. 238 Ch. VIII § 5(B), 2000).		
45	**20.80.330 Required buffer areas.** (See draft for complete text of section including the table of buffers.)	Nowhere in this chapter does it address upland or adjacent land use impacts. There is a natural relationship between buffer width and impacts from upland activities. Presently it falls to the owner of properties at waters edge to mitigate all impacts upland of him whether he owns the property or not. The standard buffer for a 50x50 sq ft type IV wetland (2500 sq ft) is 10,850 sq ft. The buffer is 4.3 times the size of the wetland!!!!!!!!! And Type IV wetlands don't have a minimum size, either. How small does a wetland have to be before it is not worth protecting? 100 square feet? 10 square feet? 1 square foot?	While Ecology recommends buffers relative to adjacent land use intensity, in the Ecology guidance nearly all the land use categories that occur in Shoreline are listed as "high intensity." Low and moderate intensity land uses include rural and forest types of land uses. Upland activities located beyond the buffer are required to comply with storm drainage and water quality standards. The exemptions section, SMC 20.80.030(F), includes an exemption for some small, low quality wetlands. The Commission may wish to consider some type of adjustment to the formula to address the "big buffer for a small wetland" issue.

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46	**20.80.330 Required buffer areas.** … ~~D~~C. The ~~maximum~~ standard buffer width shall be established, provided that the buffer may be reduced to the minimum buffer listed above if ~~unless~~ the applicant can demonstrate that a smaller area is adequate to protect the wetland functions and ~~-~~one or both of the following: 1. The proposed use and/or activities are considered low impact, and may include the following: a. A site layout with no parking, outdoor storage, or use of machinery; b. The proposed use does not involve usage or storage of chemicals; and/or c. Passive areas are located adjacent to the subject buffer; and/or d. Both the wetland and its buffer are incorporated into the site design in a manner which eliminates the risk of adverse impact on the subject critical area.	The use of the word "may" in paragraph (1) makes this permissive, which seems to underline the minor edits to the subpoints. Can't tell whether subpoints (a) through (d) have any legal effect. Recommend making it explicit if the proposed use must be considered low impact and must meet all of the following criteria (or, if not, make it clear that they are optional).	Staff agrees this may be confusing and warrants consideration of alternative language.
47	**20.80.330 Required buffer areas.** … ~~C~~E. ~~Applicants may choose to establish additional protections beyond the maximum.~~The City may extend the width of the buffer on the basis of site specific analysis when necessary to achieve the goals of this subchapter.	I would leave in "Applicants may choose…" line and change it to read, "Applicants are encouraged…". It sends a clear message that the city expects applicants to take a proactive approach.	The City cannot impose restrictions that go beyond the maximum requirements of its own code. Therefore, this sentence is proposed to be removed. If an applicant wants to go above and beyond our code requirements, that would be encouraged.

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48	**20.80.330 Required buffer areas.** H. A regulated wetland and its associated buffer shall either be placed in a separate tract on which development is prohibited, protected by execution of an easement, dedicated to a conservation organization or land trust, or similarly preserved through a permanent protective mechanism acceptable to the City. The location and limitations associated with the wetland and its buffer shall be shown on the face of the deed or plat applicable to the property and shall be recorded with the King County Department of Records. (Ord. 238 Ch. VIII § 5(C), 2000).	I don't understand how the requirement to place a wetland in a separate tract works. Does anyone really place deed restrictions on their property or separate wetlands into separate tracts? If so, who forces the property owner to do it and how does the process work?	Yes, deed and tract restriction are commonly used in this region. Typically, title or plat notices are recorded at the time of permit approval. For example, during approval of a plat, a tract would be recorded on the plat drawings as part of the plat review process.
49	**20.80.340 Alteration.** A. **Type I Wetlands.** Alterations of Type I wetlands shall be prohibited subject to the reasonable use provisions and special use permit provision of this title.	How is "Reasonable Use" defined? Without a size limitation on Type I Wetlands, it seems that Type II, III, and IV wetlands could all be alternatively classified as Type I wetlands and therefore only modifiable through the reasonable or special use permit provisions.	"Reasonable use" is defined in SMC 20.20.044(R), although the nature of the legal context of this term inhibits our ability to define it more narrowly.
50	**20.80.350 Mitigation performance standards and requirements.** A. **Appropriate Wetland Mitigation Sequence and Actions.** Where impacts cannot be avoided, and the applicant has exhausted feasible design alternatives, the applicant or property owner shall seek to implement other appropriate mitigation actions in compliance with the intent, standards and criteria of this section. In an individual case, these actions may include consideration of alternative site plans and layouts, reductions in the density or scope of the proposal, and/or implementation of the performance standards listed in this subchapter.	How "exhausted" defined? Does "feasible" mean technically or economically or both?	These are subjective terms that are defined on a case by case basis. The Commission may wish to consider alternative language.

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51	**20.80.350 Mitigation performance standards and requirements.** … B. Impacts to wetland functions and values shall be mitigated. Mitigation actions shall be implemented in the preferred sequence: Avoidance, minimization, restoration and replacement. Proposals which include less preferred and/or compensatory mitigation shall demonstrate that: 1. All feasible and reasonable measures will be taken to reduce impacts and losses to the critical area, or to avoid impacts where avoidance is required by these regulations; and 2. The restored, created or enhanced critical area or buffer will be as available and persistent as the critical area or buffer area it replaces; and 3. In the case of wetlands and streams, no overall net loss will occur in wetland or stream functions and values.	The last sentence of paragraph (B) seems to indicate that a prospective developer could build in a critical area. At what point would a development be denied?	The highest level of review falls under a critical areas reasonable use permit. This permit is required when a proposal is nearly or entirely encumbered by a critical area. Under certain circumstances a proposal not meeting the standard of "reasonable use" may be denied.

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52	**20.80.350 Mitigation performance standards and requirements.** … C. **Location and Timing of Wetland Mitigation.** 1. Wetland mitigation shall be provided on-site, unless on-site mitigation is not scientifically feasible due to the physical features of the property. The burden of proof shall be on the applicant to demonstrate that mitigation cannot be provided on-site. 2. When mitigation cannot be provided on-site, mitigation shall be provided in the immediate vicinity of the permitted activity on property owned or controlled by the applicant such as an easement, provided such mitigation is beneficial to the critical area and associated resources. It is the responsibility of the applicant to obtain title to off-site mitigation areas. 3. In-kind mitigation shall be provided except when the applicant demonstrates and the City concurs that greater functional and habitat value can be achieved through out of-kind mitigation. 4. Only when it is determined by the City that subsections (C)(1), (2), and (3) of this section are inappropriate and impractical shall off-site, out-of-kind mitigation be considered. 5. When wetland mitigation is permitted by these regulations on-site or off-site, the mitigation project shall occur near an adequate water supply (river, stream, ground water) with a hydrologic connection to the proposed wetland mitigation area to ensure successful development or restoration. *[This requirement is repeated in SMC 20.80.500(C) for application to streams.]*	Why is off-site mitigation considered to be inherently less valuable than on-site mitigation, realizing that environmental problems (and solutions) are often basin or area wide? Must off-site mitigation be adjacent to the critical area being developed? The way I read section (5), even though you have a Type IV isolated wetland that is not hydrologically connected to a water source, if you destroy that Type IV wetland and provide an alternate wetland, the alternate wetland mitigation area must be near an adequate water supply with a hydrologic connection. That doesn't seem fair.	It is our understanding that on-site mitigation is generally preferred over off-site mitigation because it ensures that the type of area being mitigated is comparable to the area of impact and it reduces the likelihood of permanent displacement of wetland and buffer areas. Proximity appears to provide greater certainty that the mitigation will be immediately related to the impacts. For example, if mitigation is provided off-site, but the mitigation site does not have the appropriate hydrology, the mitigation may fail or may not provide the same level of function.

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53	**20.80.350 Mitigation performance standards and requirements.** … D. **Wetland Replacement Ratios.** 2. When creating or enhancing wetlands, the following acreage replacement ratios shall be used: *[See Table 20.80.350D in the draft text.]*	After Tim Stewart explained how this table works, I don't have any questions about it. However, no one will ever be able to figure out what the table means and how it works without Mr. Stewart explaining it to them. Maybe an example should be given in the statute so people will understand how the table works.	Staff agrees with this comment and will develop examples.
54	**20.80.350 Mitigation performance standards and requirements.** … E. **Wetlands Performance Standards.** The performance standards in this section shall be incorporated into mitigation plans submitted to the City for impacts to critical areas. In addition, the City may prepare a technical manual which includes guidelines and requirements for report preparation. The following performance standards shall apply to any mitigations proposed within Type I, Type II, Type III and Type IV wetlands and their buffers. … 7. Plant selection must be approved by a qualified consultant. … 16. All construction specifications and methods shall be approved by a qualified consultant and the City.	(E)(7) and (16) Reference is made to a qualified consultant. Who hires the consultant? The City or the property owner?	For any type of development proposal, the applicant is required to hire and pay for his or her own consultants.

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55	**20.80.350 Mitigation performance standards and requirements.** … G. **Monitoring Program and Contingency Plan.** 1. A monitoring program shall be implemented by the applicant to determine the success of the mitigation project and any necessary corrective actions. This program shall determine if the original goals and objectives are being met. 2. A contingency plan shall be established for indemnity in the event that the mitigation project is inadequate or fails. A performance and maintenance bond or other acceptable ~~security device~~ financial guarantee is required to ensure the applicant's compliance with the terms of the mitigation agreement. The amount of the performance and maintenance bond shall equal 125 percent of the cost of the mitigation project for a minimum of five years. The bond may be reduced in proportion to work successfully completed over the period of the bond. The bonding period shall coincide with the monitoring period. 3. Monitoring programs prepared to comply with this section shall reflect the following guidelines: … d. Monitoring reports on the current status of the mitigation project shall be submitted to the City. The reports are to be prepared by a qualified consultant and reviewed by the City or a consultant retained by the City and should include monitoring information on wildlife, vegetation, water quality, water flow, stormwater storage and conveyance, and existing or potential degradation, as applicable, and shall be produced on the following schedule: at the time of construction; 30 days after planting; early in the growing season of the first year; at the end of the growing season of the first year; twice during the second year; and annually thereafter. e. Monitoring programs shall be established for a minimum of five years.	How long must the creator of a wetland mitigation area post a bond for? Who pays for the monitoring reports? If the City decides to retain a consultant to review the status of the mitigation project, who pays for it? Under what circumstances would the City do that? If a wetland fails after 4 years and must be replaced, does the property owner then have to guaranty the survival of the wetland for at least another 5 years or only 1 year?	A typical wetland monitoring project lasts five years. The applicant. The applicant incurs all costs of their proposed development. We would typically review the mitigation project if a monitoring report came back negative. The new mitigation project may be required to survive for an additional five years. Typically this is decided upon by the qualified professional involved with the project.

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56	**Flood Hazard Areas**		
57	**20.80.380 Flood fringe – Development standards and permitted alterations.** … E. New residential structures and improvements that include the creation of new impervious surfaces associated with existing residential structures shall meet the following requirements: 1. The lowest floor shall be elevated to the flood protection elevation;	Does (E)(1) mean that if you are in a floodplain that you can't have a basement?	Yes. However, mapped flood plains in Shoreline are very limited.
58	**Aquifer Recharge Areas**		
59	**20.80.420 Description and purpose.** A. Aquifer recharge areas provide a source of potable water and contribute to stream discharge during periods of low flow. Urban-type pollutants may enter watercourse supplies through potential infiltration of pollutants through the soil to ground water aquifers.	Does the City have any Aquifer Recharge Areas? Could the City ever have one if it doesn't already? If not, then this Subchapter 6 could probably be eliminated.	There are no known aquifer recharge areas in Shoreline. Conceivably one could be identified in the future.

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60	**Stream Areas**		
61	**20.80.460 Description and purpose.** A. Streams are those areas where open surface waters produce a defined channel or bed, not including irrigation ditches, canals, storm or surface water runoff devices or other entirely artificial open watercourses, unless they are used by salmonids or are used to convey streams naturally occurring prior to construction. A channel or bed need not contain water year round, provided that there is evidence of at least intermittent flow during years of normal rain fall.	Why can't artificial or underground watercourses be streams?	Artificial water courses can be classified as a stream if it is used by salmonids or is used to convey a stream naturally occurring prior to construction. An underground watercourse does not meet the definition of surface water that produces a defined channel or bed.
62	**20.80.470 Classification.** *[Numbering is corrected in this section.]* Streams shall be designated ~~Type I, Type II, Type III, and Type IV~~ according to the criteria in this section. When more than one stream type is present in short alternating segments on a subject property, it will be classified according to the stream type which is more restrictive. A. "Type I streams" are those streams identified as "Shorelines of the State" under the City Shoreline Master Program. B. "Type II streams" are those ~~natural~~ streams that are ~~not Type I streams and are~~ either perennial or intermittent and have salmonid fish use~~have one of the following characteristics:~~ ~~1. Salmonid fish use;~~ ~~2. Potential for salmonid fish use; or~~ ~~3. Significant recreational value~~. C. "Type III streams" are those ~~natural~~ streams with perennial (year-round) or intermittent flow and are not used by salmonid fish~~ and have~~	There is no specific reference to Puget Sound, marine waters, or the like. The definition of stream appears to technically include Puget Sound as it is written, it is confusing and potentially misleading. Even a very knowledgeable reader could read this draft code and not be able to determine whether Puget Sound shorelines are protected. Someone might not realize that "Type 1 streams" include Puget Sound, and sending them to the SMP to look for Shorelines of the State seems awkward. Recommend explicitly adding Puget Sound shorelines either to the definition of stream or, under 20.80.470.A, stating that Type 1 streams include the shoreline of Puget Sound. Type II streams used to be classified if it just had the potential for salmonid fish use. Now for it to be classified that way it must have salmonid fish use. To tighten up the definition even more, is it now clear that one siting of a salmonid will not be enough to meet the standard of "used by salmonid fish"? They now have to be documented and passability has to be shown. This looks like it was clearly added to address the issue of the one fish that was sited in Thornton Creek.	Shoreline protects the Puget Sound shoreline using the Shoreline Master Program. It does not appear that the code intended to include the Puget Sound as a Type I "stream," because the Sound is clearly not a stream. All streams that are "shorelines of state" would be Type I, but not all shorelines of the state would be streams. The "potential for salmonid use" is clarified in the new section (E), which based on state language and GMA direction. State rule WAC 222-16-031 states that fish use should be presumed when either documented or water quality parameters are met. GMA mandates giving special consideration to anadromous fish (those that swim to Lake Washington or the Puget Sound and back). In the current language, it is unclear what areas have "potential for salmonid fish use."

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	~~no potential to be used by salmonid fish~~. D. "Type IV streams" are those streams ~~and natural drainage swales~~ with perennial or intermittent flow with channel width less than two feet taken at the ordinary high water mark that are not used by salmonid fish. E. For the purposes of this section, "salmonid fish use" and "used by salmonid fish" is presumed for: 1. Streams where naturally reoccuring use by salmonid populations has been documented by a government agency; 2. Streams that are fish passable by salmonid populations from Lake Washington or Puget Sound, as determined by a qualified professional based on review of stream flow, gradient and barriers and criteria for fish passability established by the Washington Deparment of Fish and Wildlife; and 3. Streams that are planned for restoration in a 6-year capital improvement plan adopted by a government agency that will result in a fish passable connection to Lake Washington or Puget Sound. The Department may waive the presumption of salmonid fish use for stream segments where a qualified professional has determined there are confirmed, long term water quality parameters making the stream segment incapable of supporting fish. ~~E. "Intentionally created streams" are those manmade streams defined as such in these regulations, and do not include streams created as mitigation. Purposeful creation must be demonstrated to the City through documentation, photographs, statements and/or other evidence. Intentionally created streams may include irrigation and drainage ditches, grass-lined swales and canals. Intentionally created streams are excluded from regulation under this subchapter, except manmade streams that provide critical habitat for species of fish and wildlife that are proposed or listed by the Federal government or State of Washington as endangered, threatened, critical, or priority species. Intentionally created streams that provide documented critical habitat for these species shall be classified and treated as natural streams.~~ (Ord. 238 Ch. VIII § 8(B), 2000).	(E)(1) Why waive the presumption of salmonid fish use based solely on water quality parameters? It seems to me we should be looking at restoring stream health so that salmonid fish use is again viable, especially if there is historical evidence of previous salmonid populations. (E)(1) Why is a government agency rather than a qualified professional determining "salmonid fish use"? (E)(3) Was this section put in just because DOT doesn't have any plans to remove the fish barrier under I-5 on Thornton Creek? (previous E) The removal of this section will be a big deal. I don't understand the rationale in the box provided by staff. Again, I don't think there should be a distinction as to how a stream got there, either naturally, artificially, intentionally or unintentionally. Once it is there, the CAO should protect the functions and values of the stream.	The term "used by salmonid fish" has been subject ot extensive litigation and judicial interpretation. We have seen "dueling scientists" reach entirely different conclusions. This definition is proposed by staff to provide legislative clarity. Staff agrees this definition will be a point of contention. (E)(3) proposes fish-level protection for streams, even if fish are not present or presumed, if restoration is planned. The common way agencies plan restoration projects, is to include them in their capital improvement programs. One of the key reasons for removing the previous (E) is that it was a repetitive and not entirely consistent with the definition of stream in SMC 20.20.046.

Item #	Draft Code Section	Questions/Comments (as of 1/__/05 through 1/31/05)	Staff Response
63	**20.80.480 Required buffer areas.** … 4. Additional enhancement measures may include: a. Planting native vegetation within the buffer area, especially vegetation that would increase value for fish and wildlife, increase stream bank or slope stability, improve water quality, or provide aesthetic/recreational value; or b. Creation of a surface channel where a stream was previously underground, in a culvert or pipe. Surface channels which are "daylighted" shall be located within a buffer area and shall be designed with energy dissipating functions such as meanders to reduce future erosion; …	Are streams that are created by daylighting a channel artificial? Or are they natural because that is what they were before they were piped in. Are they still artificial streams but considered streams because they were intentionally created to mitigate the removal of a previously artificial stream? Very confusing.	The City makes no distinction between artificial and natural watercourses. The distinction made is between open and piped watercourses.

Item #	Draft Code Section	Questions/Comments (as of 1/__/05 through 1/31/05)	Staff Response
64	**20.80.480 Required buffer areas.** … D. No structures or improvements shall be permitted within the stream buffer area, including buildings, decks, docks, except as otherwise permitted or required under the City's adopted Shoreline Master Program, or under one of the following circumstances: 1. When the improvements are part of an approved rehabilitation or mitigation plan; or 2. For the construction of new roads and utilities, and accessory structures, when no feasible alternative location exists; or 3. The construction of trails, consistent with the following criteria: a. Trails should be constructed of permeable materials; b. Trails shall be designed in a manner that minimizes impact on the stream system; c. Trails shall have a maximum trail corridor width of 10 feet; and d. Trails should be located within the outer half of the buffer, i.e., that portion of the buffer that is farther away from the stream; or 4. The construction of footbridges; or 5. The construction and placement of informational signs or educational demonstration facilities limited to no more than one square yard surface area and four feet high, provided there is no permanent infringement on stream flow; or 6. The establishment of stormwater management facilities, such as grass lined swales, when located outside of the minimum buffer area as set forth in the Table 20.80.480B.	Are there any height restrictions to having structures overhang buffer areas? As an example, why couldn't a deck overhang a buffer area if it on the 3rd floor of a single family house and is 20-30 feet above the buffer area? Replace "grass lined" with bio-swales.	Buffers apply at all height levels. The Commission may wish to add an exception for overhangs.

Item #	Draft Code Section	Questions/Comments (as of 1/__/05 through 1/31/05)	Staff Response
65	**20.80.480 Required buffer areas.** … H. Restoring piped watercourses. 1. The city encourages the opening of previously channelized/culverted streams and the rehabilitation and restoration of streams. 2. When piped watercourse sections are restored, a protective buffer shall be required of the stream section. The buffer distance shall be based on an approved restoration plan, regardless of stream classification, and shall be a minimum of 10 feet to allow for restoration and maintenance. The stream and buffer area shall include habitat improvements and measures to prevent erosion, landslide and water quality impacts. Opened channels shall be designed to support fish access, unless determine to be unfeasible by the City. 4. Removal of pipes conveying streams shall only occur when the City determines that the proposal will result in a net improvement of water quality and ecological functions and will not significantly increase the threat of erosion, flooding, slope stability or other hazards. 5. Where the buffer of the restored stream would extend beyond a required setback on an adjacent property, the applicant shall seek written agreement from the affected neighboring property owner. (Ord. 299 § 1, 2002; Ord. 238 Ch. VIII § 8(C), 2000).	Recommend changing the requirement from "the applicant shall seek written agreement" to "the applicant shall obtain written agreement." Otherwise, it has no more effect than a notice requirement.	Staff agrees with this assesment.

Item #	Draft Code Section	Questions/Comments (as of 1/__/05 through 1/31/05)	Staff Response
66	**20.80.500 Mitigation performance standards and requirements.** A. **Appropriate Stream Mitigation Sequence and Actions.** Where impacts cannot be avoided, and the applicant has exhausted feasible design alternatives, the applicant or property owner shall seek to implement other appropriate mitigation actions in compliance with the intent, standards and criteria of this section. In an individual case, these actions may include consideration of alternative site plans and layouts, reductions in the density or scope of the proposal, and/or implementation of the performance standards listed in this section.	In critical areas, impacts that cannot be avoided should not be allowed. In my experience, rarely are there no feasible design alternatives.	This section is not proposed to change as a result of this update. An incident where all impact cannot be avoided may be a situation where a property is entirely encumbered by a critical area and it's buffer. In this case a critical areas reasonable use permit is required.
67	**20.80.500 Mitigation performance standards and requirements.** … B. Significant adverse impacts to stream area functions and values shall be mitigated. Mitigation actions shall be implemented in the preferred sequence: Avoidance, minimization, restoration and replacement. Proposals which include less preferred and/or compensatory mitigation shall demonstrate that: 1. All feasible and reasonable measures will be taken to reduce impacts and losses to the stream, or to avoid impacts where avoidance is required by these regulations; and 2. The restored, created or enhanced stream area or buffer will be available and persistent as the stream or buffer area it replaces; and 3. No overall net loss will occur in stream functions and values.	How much is "significant. How is this measured?	Significant is a subjective term that is determined and interpreted by qualified professionals in their field of expertise.

Item #	*Draft Code Section*	*Questions/Comments (as of 1/__/05 through 1/31/05)*	*Staff Response*
68	**20.80.500 Mitigation performance standards and requirements.** … C. **Location and Timing of Stream Mitigation.** 1. Mitigation shall be provided on-site, unless on-site mitigation is not scientifically feasible due to the physical features of the property. The burden of proof shall be on the applicant to demonstrate that mitigation cannot be provided on-site. 2. When mitigation cannot be provided on-site, mitigation shall be provided in the immediate vicinity of the permitted activity on property owned or controlled by the applicant such as an easement, provided such mitigation is beneficial to the critical area and associated resources. It is the responsibility of the applicant to obtain title to off-site mitigation areas.	I'm not clear on why development can be allowed if the site is "scientifically" unsuitable. In my experience with present technology and design expertise it is rare that impacts to a site cannot be mitigated. If they cannot be mitigated then I would question why we would let the proposed development proceed.	This clarifies that "feasibility" is science and not fiscal.
69		Designate all streams and their buffers as fish and wildlife habitat conservation areas.	Staff agrees with this comment. Streams, wetlands and their buffers do function as fish and wildlife habitat areas.

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Item #	*Current Draft Code Section*	*Proposed Change to Draft Code*	*Proposed Draft Code Section*
1	**20.20.046 S definitions.** **Streams** Those areas in the City of Shoreline where <u>open</u> surface waters produce a defined channel or bed, not including irrigation ditches, canals, storm or surface water runoff devices or other entirely artificial <u>open</u> watercourses, unless they are used by salmonids or are used to convey streams naturally occurring prior to construction ~~in such watercourses~~. <u>A channel or bed need not contain water year-round, provided that there is evidence of at least intermittent flow during years of normal rain fall.</u>	Remove the phrase "in the City of Shoreline."	**20.20.046 S definitions.** **Streams** Those areas ~~in the City of Shoreline~~ where <u>open</u> surface waters produce a defined channel or bed, not including irrigation ditches, canals, storm or surface water runoff devices or other entirely artificial <u>open</u> watercourses, unless they are used by salmonids or are used to convey streams naturally occurring prior to construction ~~in such watercourses~~. <u>A channel or bed need not contain water year-round, provided that there is evidence of at least intermittent flow during years of normal rain fall.</u>
2	**20.80.030 Exemptions.** … <u>L.</u> Educational activities, scientific research, and outdoor recreational activities, including but not limited to interpretive field trips, bird watching, and use of existing trails for horseback riding, bicycling and hiking, that will not have an adverse effect on the critical area;	Remove "Horseback Riding" Insert "public beach access and other water recreation related activities"	**20.80.030 Exemptions.** … <u>L.</u> Educational activities, scientific research, and outdoor recreational activities, including but not limited to interpretive field trips, bird watching, <u>public beach access including water recreation related activities,</u> ~~and use of existing trails for horseback riding~~, bicycling and hiking, that will not have an adverse effect on the critical area;

Item #	Current Draft Code Section	Proposed Change to Draft Code	Proposed Draft Code Section
3	**20.80.080 Alteration or development of critical areas – Standards and criteria.** ~~All impacts to critical areas functions and values shall~~ ~~be mitigated~~.This section applies to mitigation required with all critical areas reviews, approvals and enforcement pursuant to this Chapter. This section is supplemented with specific measures under subchapters for particular critical areas. The proponent for a project involving critical areas shall seek to avoid, minimize and mitigate the impacts to the critical areas through ~~Mitigation~~ actions ~~by an applicant or property ownershall~~that occur in the following sequence:	Remove the phrase “seek to” from this code section	**20.80.080 Alteration or development of critical areas – Standards and criteria.** ~~All impacts to critical areas functions and values shall~~ ~~be mitigated~~.This section applies to mitigation required with all critical areas reviews, approvals and enforcement pursuant to this Chapter. This section is supplemented with specific measures under subchapters for particular critical areas. The proponent for a project involving critical areas shall ~~seek to~~ avoid, minimize and mitigate the impacts to the critical areas through ~~Mitigation~~ actions ~~by an applicant or property ownershall~~that occur in the following sequence:
4	**20.80.230 Required buffer areas.** … D. Landslide hazard area buffers may be reduced to a minimum of 15 feet when technical studies conclusively demonstrate that the reduction will adequately protect people and the proposed and surrounding development from the landslide hazard.	Remove “conclusively” and reword the section to reduce risk of a hazard to people and property.	**20.80.230 Required buffer areas.** … D. Landslide hazard area buffers may be reduced to a minimum of 15 feet when technical studies ~~conclusively~~ demonstrate that the reduction will not increase the risk of the hazard to people or property on or off site.

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5	**20.80.270 Classification.** Fish and wildlife habitat areas are those areas designated by the City based ~~that meet~~ on any of the following criteria, review of the best available science, and input from Washington Department of Fish and Wildlife, Washington Department of Ecology and other agencies: A. The ~~documented~~ presence of species proposed or listed by the Federal government or State of Washington as endangered, threatened, critical, or priority documented by best available science; or B. The presence of heron rookeries or priority raptor nesting trees; or C. Type I wetlands, as defined in these regulations; or D. Type I streams, as defined in these regulations; or E. Those areas which include the presence of locally significant species, if the City has designated such species. (Ord. 238 Ch. VIII § 4(B), 2000).	All regulated streams and wetlands, and their buffers should be considered fish and wildlife habitat areas. The Puget Sound should be considered a fish and wildlife habitat area.	**20.80.270 Classification.** A. Fish and wildlife habitat conservation areas are those areas designated by the City based ~~that meet~~ on review of the best available science; input from Washington Department of Fish and Wildlife, Washington Department of Ecology, and other agencies; and any of the following criteria, ~~review of the best available science, and input from Washington Department of Fish and Wildlife, Washington Department of Ecology and other agencies~~: 1~~A~~. The ~~documented~~ presence of species proposed or listed by the Federal government or the State of Washington as endangered, threatened, critical, or priority ~~documented by best available science~~; or 2~~B~~. The presence of heron rookeries or priority raptor nesting trees; or 3. Streams and wetlands and their associated buffers that provide significant habitat for fish and wildlife. ~~C. Type I wetlands, as defined in these regulations; or~~ ~~D. Type I streams, as defined in these regulations; or~~

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5			B. The City designates the following fish and wildlife habitat conservation areas that meet the above criteria, and this designation does not preclude designation of additional areas as provided in SCC 20.80.270(A):~~C~~ 1. All regulated streams and wetlands and their associated buffers as determined by a qualified specialist. 2~~D~~. The waters, bed and shoreline of Puget Sound up to~~to its~~ the ordinary high water mark.
6	**20.80.470 Classification.** *[Numbering is corrected in this section.]* Streams shall be designated ~~Type I, Type II, Type III, and Type IV~~ according to the criteria in this section. When more than one stream type is present in short alternating segments on a subject property, it will be classified according to the stream type which is more restrictive. A. "Type I streams" are those streams identified as "Shorelines of the State" under the City Shoreline Master Program. B. "Type II streams" are those ~~natural~~ streams that are ~~not Type I streams and are~~ either perennial or intermittent and have salmonid fish use~~have one of the following characteristics:~~ ~~1. Salmonid fish use;~~	See next page for proposed change.	**20.80.470 Classification.** *[Numbering is corrected in this section.]* Streams shall be designated ~~Type I, Type II, Type III, and Type IV~~ according to the criteria in this section. When more than one stream type is present in short alternating segments on a subject property, it will be classified according to the stream type which is more restrictive. A. "Type I streams" are those streams identified as "Shorelines of the State" under the City Shoreline Master Program. B. "Type II streams" are those ~~natural~~ streams

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	~~2. Potential for salmonid fish use; or~~ ~~3. Significant recreational value~~. C. "Type III streams" are those ~~natural~~ streams with perennial (year-round) or intermittent flow and are not used by salmonid fish~~ and have no potential to be used by salmonid fish~~. D. "Type IV streams" are those streams ~~and natural drainage swales~~ with perennial or intermittent flow with channel width less than two feet taken at the ordinary high water mark that are not used by salmonid fish. E. For the purposes of this section, "salmonid fish use" and "used by salmonid fish" is presumed for: 1. Streams where naturally reoccurring use by salmonid populations has been documented by a government agency; 2. Streams that are fish passable by salmonid populations from Lake Washington or Puget Sound, as determined by a qualified professional based on review of stream flow, gradient and barriers and criteria for fish passability established by the Washington Department of Fish and Wildlife; and 3. Streams that are planned for restoration in a 6-year capital improvement plan adopted by a government agency that will result in a fish passable connection to Lake Washington or Puget Sound. The Department may waive the presumption of salmonid fish use for stream segments where a qualified professional has determined there are confirmed, long term water quality parameters making the stream segment incapable of supporting fish. ~~E. "Intentionally created streams" are those manmade streams defined as such in these regulations, and do not include streams created as mitigation. Purposeful creation must be demonstrated to the City through documentation, photographs, statements and/or other evidence. Intentionally created streams may include irrigation and drainage ditches, grass-lined swales and canals. Intentionally created streams are excluded from regulation under this subchapter, except manmade streams that provide critical habitat for species of fish and wildlife that are proposed or listed by the Federal government or State of Washington as endangered, threatened, critical, or priority species.~~	Include language to allow proposals for private dam removal to be considered when assessing fish passability.	that are ~~not Type I streams and are e~~ither perennial or intermittent and have salmonid fish use~~have one of the following characteristics:~~ ~~1. Salmonid fish use;~~ ~~2. Potential for salmonid fish use; or~~ ~~3. Significant recreational value~~. C. "Type III streams" are those ~~natural~~ streams with perennial (year-round) or intermittent flow and are not used by salmonid fish~~ and have no potential to be used by salmonid fish~~. D. "Type IV streams" are those streams ~~and natural drainage swales~~ with perennial or intermittent flow with channel width less than two feet taken at the ordinary high water mark that are not used by salmonid fish. E. For the purposes of this section, "salmonid fish use" and "used by salmonid fish" is presumed for: 1. Streams where naturally reoccurring use by salmonid populations has been documented by a government agency; 2. Streams that are fish passable by salmonid populations from Lake Washington or Puget Sound, as determined by a qualified professional based on review of stream flow, gradient and barriers and criteria for fish passability established by the Washington Department of Fish and Wildlife; and 3. Streams that are: a. planned for restoration in a 6-year capital improvement plan adopted by a government agency that will result in a fish passable connection to Lake Washington or Puget Sound. b. Planned removal of private dams that will result in a fish passable connection to Lake

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	~~Intentionally created streams that provide documented critical habitat for these species shall be classified and treated as natural streams.~~ (Ord. 238 Ch. VIII § 8(B), 2000).		Washington or the Puget Sound. The Department may waive the presumption of salmonid fish use for stream segments where a qualified professional has determined there are confirmed, long term water quality parameters making the stream segment incapable of supporting fish. ~~E. "Intentionally created streams" are those manmade streams defined as such in these regulations, and do not include streams created as mitigation. Purposeful creation must be demonstrated to the City through documentation, photographs, statements and/or other evidence. Intentionally created streams may include irrigation and drainage ditches, grass-lined swales and canals. Intentionally created streams are excluded from regulation under this subchapter, except manmade streams that provide critical habitat for species of fish and wildlife that are proposed or listed by the Federal government or State of Washington as endangered, threatened, critical, or priority species. Intentionally created streams that provide documented critical habitat for these species shall be classified and treated as natural streams.~~ (Ord. 238 Ch. VIII § 8(B), 2000).

Item #	Current Draft Code Section	Proposed Change to Draft Code	Proposed Draft Code Section
7	**20.80.480 Required buffer areas.** … H. Restoring piped watercourses. 1. The city encourages the opening of previously channelized/culverted streams and the rehabilitation and restoration of streams. 2. When piped watercourse sections are restored, a protective buffer shall be required of the stream section. The buffer distance shall be based on an approved restoration plan, regardless of stream classification, and shall be a minimum of 10 feet to allow for restoration and maintenance. The stream and buffer area shall include habitat improvements and measures to prevent erosion, landslide and water quality impacts. Opened channels shall be designed to support fish access, unless determine to be unfeasible by the City. 4. Removal of pipes conveying streams shall only occur when the City determines that the proposal will result in a net improvement of water quality and ecological functions and will not significantly increase the threat of erosion, flooding, slope stability or other hazards. 5. Where the buffer of the restored stream would extend beyond a required setback on an adjacent property, the applicant shall seek written agreement from the affected neighboring property owner. (Ord. 299 § 1, 2002; Ord. 238 Ch. VIII § 8(C), 2000).	Change the requirement, “the applicant shall seek written agreement” to “the applicant shall obtain a written agreement.”	**20.80.480 Required buffer areas.** … H. Restoring piped watercourses. 1. The city encourages the opening of previously channelized/culverted streams and the rehabilitation and restoration of streams. 2. When piped watercourse sections are restored, a protective buffer shall be required of the stream section. The buffer distance shall be based on an approved restoration plan, regardless of stream classification, and shall be a minimum of 10 feet to allow for restoration and maintenance. The stream and buffer area shall include habitat improvements and measures to prevent erosion, landslide and water quality impacts. Opened channels shall be designed to support fish access, unless determine to be unfeasible by the City. 4. Removal of pipes conveying streams shall only occur when the City determines that the proposal will result in a net improvement of water quality and ecological functions and will not significantly increase the threat of erosion, flooding, slope stability or other hazards. 5. Where the buffer of the restored stream would extend beyond a required setback on an adjacent property, the applicant shall ~~seek~~ obtain a written agreement from the affected neighboring property owner. (Ord. 299 § 1, 2002; Ord. 238 Ch. VIII § 8(C), 2000).

Item #	Current Draft Code Section	Proposed Change to Draft Code	Proposed Draft Code Section
8	**20.80.320 Classification.** Wetlands, as defined by this section, shall be ~~designated Type I, Type II, Type III, Type IV and artificial~~classified according to the following criteria: A. "Type I wetlands" are those wetlands which meet any of the following criteria: 1. The presence of species proposed or listed by the Federal government or State of Washington as endangered, threatened, critical or ~~monitored~~priority, or the presence of critical or outstanding actual or potential habitat for those species; or 2. Wetlands having 40 percent to 60 percent open water in dispersed patches with two or more wetland subclasses of vegetation; or 3. High quality examples of a native wetland listed in the terrestrial and/or aquatic ecosystem elements of the Washington Natural Heritage Plan that are presently identified as such or are determined to be of Heritage quality by the Department of Natural Resources; or 4. The presence of plant associations of infrequent occurrence. These include, but are not limited to, plant associations found in bogs and in wetlands with a coniferous forested wetland class or subclass occurring on organic soils. B. "Type II wetlands" are those wetlands which are not Type I wetlands	Adopt the Washington State Department of Ecology's Washington State Wetland Rating System for Western Washington.	Section 20.80.320 would need to be repealed in it's entirety. A new section 20.80.320 could adopt Ecology's manual by reference. The manual is viewable at http://www.ecy.wa.gov/biblio/0406025.html

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	and meet any of the following criteria: 1. Wetlands greater than one acre (43,560 sq. ft.) in size; 2. Wetlands equal to or less than one acre (43,560 sq. ft.) but greater than one-half acre (21,780 sq.ft.) in size and have three or more wetland classes; or 3. Wetlands equal to or less than one acre (43,560 sq. ft.) but greater than one-half acre (21,780 sq.ft.) in size, and have a forested wetland class or subclasses. C. "Type III wetlands" are those wetlands that are equal to or less than one acre in size and that have one or two wetland classes and are not rated as Type IV wetlands, or wetlands less than one-half acre in size having either three wetlands classes or a forested wetland class or subclass. D. "Type IV wetlands" are those wetlands that are equal to or less than 2,500 square feet, hydrologically isolated and have only one, unforested, wetland class. ~~E. "Artificially created wetlands" are those landscape features, ponds and stormwater detention facilities purposefully or accidentally created. Artificially created wetlands do not include wetlands created as mitigation or wetlands modified for approved land use activities. Purposeful or accidental creation must be demonstrated to the City through documentation, photographs, statements or other evidence. Artificial wetlands intentionally created from nonwetland sites for the purposes of wetland mitigation are~~		

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	~~regulated under this subchapter.~~ (Ord. 238 Ch. VIII § 5(B), 2000).		
9	20.80.030 (F) exemptions F. Activities affecting <u>isolated</u> Type IV wetlands which are individually smaller than 1,000 square feet and~~/or~~ cumulatively smaller than 2,500 square feet in size <u>where 80 percent or greater of the wetland area has been altered or is covered by invasives and the wetland has been determined to be of low hydraulic and habitat function</u>;	When cumulative impacts will be between 1,000 and 2,500 square feet, the City should require mitigation.	20.80.030 (F) exemptions F. Activities affecting <u>isolated</u> Type IV wetlands which are individually smaller than 1,000 square feet.
10	**20.80.080 Alteration or development of critical areas – Standards and criteria.** ~~All impacts to critical areas functions and values shall be mitigated.~~<u>This section applies to mitigation required with all critical areas reviews, approvals and enforcement pursuant to this Chapter. This section is supplemented with specific measures under subchapters for particular critical areas. The proponent for a project involving critical areas shall seek to avoid, minimize and mitigate the impacts to the critical areas through</u> ~~Mitigation~~ actions ~~by an applicant or property owner shall~~<u>that</u> occur in the following sequence: A. Avoiding the impact altogether by not taking a certain action or parts of actions; B. Minimizing impacts by limiting the degree or magnitude of the action	As defined by the WAC 197-11-768, mitigation is a sequence of six steps to be followed. Add “Monitoring the impact and taking appropriate corrective measures”.	**20.80.080 Alteration or development of critical areas – Standards and criteria.** ~~All impacts to critical areas functions and values shall be mitigated.~~<u>This section applies to mitigation required with all critical areas reviews, approvals and enforcement pursuant to this Chapter. This section is supplemented with specific measures under subchapters for particular critical areas. The proponent for a project involving critical areas shall seek to avoid, minimize and mitigate the impacts to the critical areas through</u> ~~Mitigation~~ actions ~~by an applicant or property owner shall~~<u>that</u> occur in the following sequence: A. Avoiding the impact altogether by not taking a

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	and its implementation; C. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment; D. Reducing or eliminating the impact over time through preservation and maintenance operations during the life of the action; and/or E. Compensating for the impact by replacing or providing substitute resources or environments. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 2(B), 2000. Formerly 20.80.170.).		certain action or parts of actions; B. Minimizing impacts by limiting the degree or magnitude of the action and its implementation; C. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment; D. Reducing or eliminating the impact over time through preservation and maintenance operations during the life of the action; and/or E. Compensating for the impact by replacing or providing substitute resources or environments. (Ord. 324 § 1, 2003; Ord. 238 Ch. VIII § 2(B), 2000. Formerly 20.80.170.). <u>F. Monitoring the impact and taking approprate corrective measures.</u>
11			