Sensitive Areas and Tree Protection Update Project
Advisory Group

Meeting #5 – Review of Draft #3 Proposed Updates
Wednesday July 26, 2017 – 5:00 to 6:30 PM (Duvall Visitors Center)

MEETING AGENDA

The City is updating Sensitive Areas and Tree Protection standards – this agenda is for the 5th Advisory Group meeting. This meeting will focus on the Sensitive Areas Ordinance update, and will be an opportunity to review Draft #2 proposed updates – including incorporation of comments and feedback received on the Initial Draft.

This meeting is relatively short, as it will be followed by the Planning Commission / City Council Workshop at 7:00 PM. Discussion will be aimed at building agreement on key update issues.

5:00 – 5:10	**Introduction** Recap of Meeting #4: Lara Agenda preview: Aaron	No action
5:10 – 5:35	**Geologically Hazardous Areas** Review of BAS and proposed updates Discussion / questions on this section	Review BAS and proposed updates for Geologically Hazardous Areas section ahead of the meeting.
5:35 – 6:20	**Key SAO Update Issues – including density calculations, and buffer reduction / alteration allowances** For each key issue / section: • **BAS Recap** • **What we heard after Meeting #4** • **Implications of changes** • **Staff recommendation** • **Issue "voting" to focus discussion**	Review SAO Draft #2 Redline Updates, and Comment & Response Tracking Matrix ahead of meeting Discussion
6:20 – 6:25	**Public Comment** Opportunity for input and questions from any interested members of the public in attendance (other than Advisory Group members)	No action
6:25 – 6:30	**Next Steps – August 15th Meeting #6** Additional Discussion (as needed) and Recommendation Re-Initiating Tree Protection Update Effort	No action

Please stay for the Planning Commission / City Council Workshop at 7PM.

Please call Lara Thomas (425-789-9658) if you have any questions on the project.

City of Duvall
Sensitive Areas and Tree Protection Update

Planning Commission / City Council Workshop

Lara Thomas, Planning Director
Aaron Booy, ESA

July 26, 2017

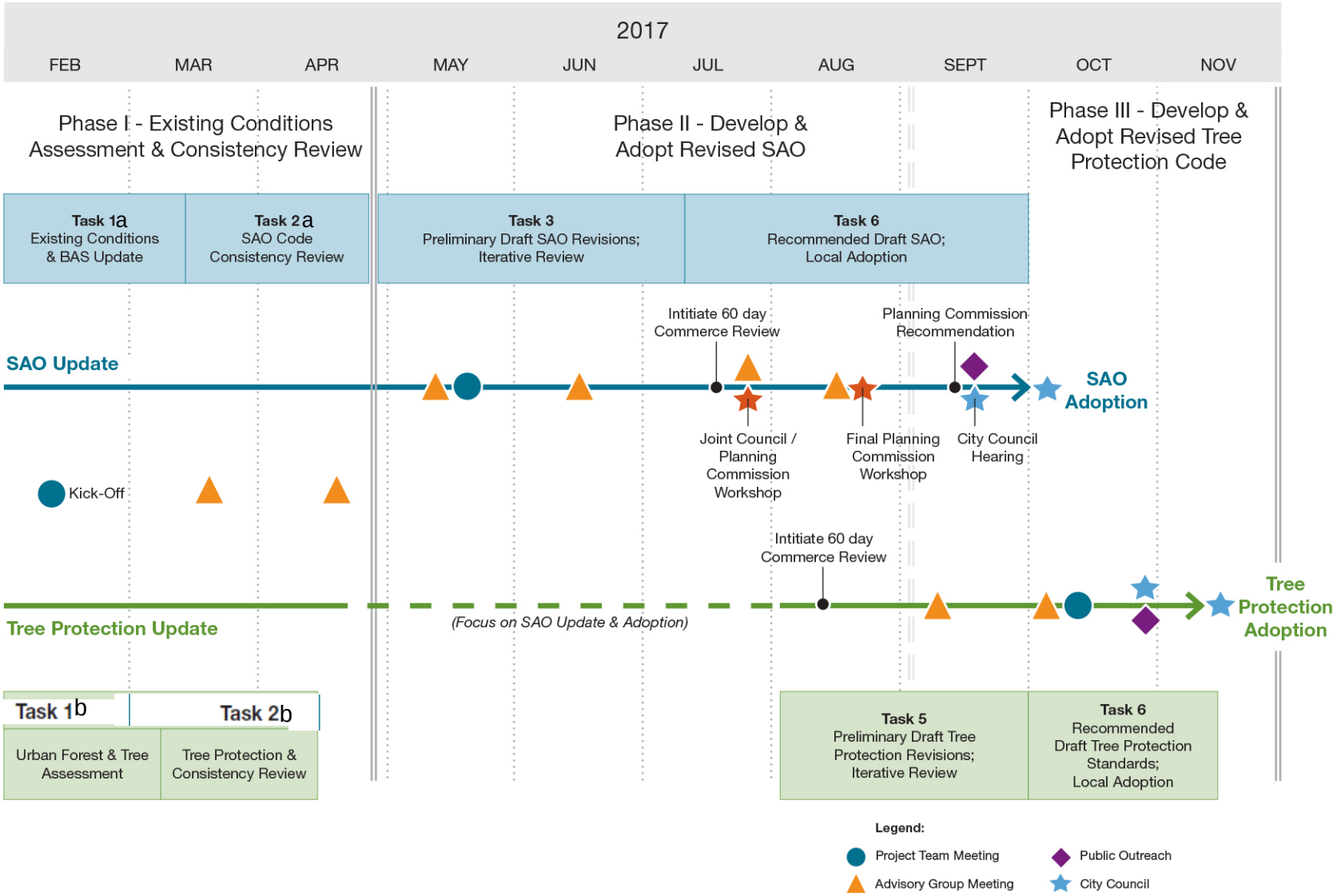
Workshop Overview

- Introduction
- Project overview
- Sensitive Areas background
- BAS & State requirements
- Recent City Policy Updates
- Advisory Committee
- Key Sensitive Areas update issues

Project Overview

- Purpose
  - Protection for natural environment, public health and safety
  - Ensuring future development is consistent with City vision
  - Improved implementation of development standards
- Project Approach & Schedule

Project Approach & Schedule



What are Sensitive Areas?

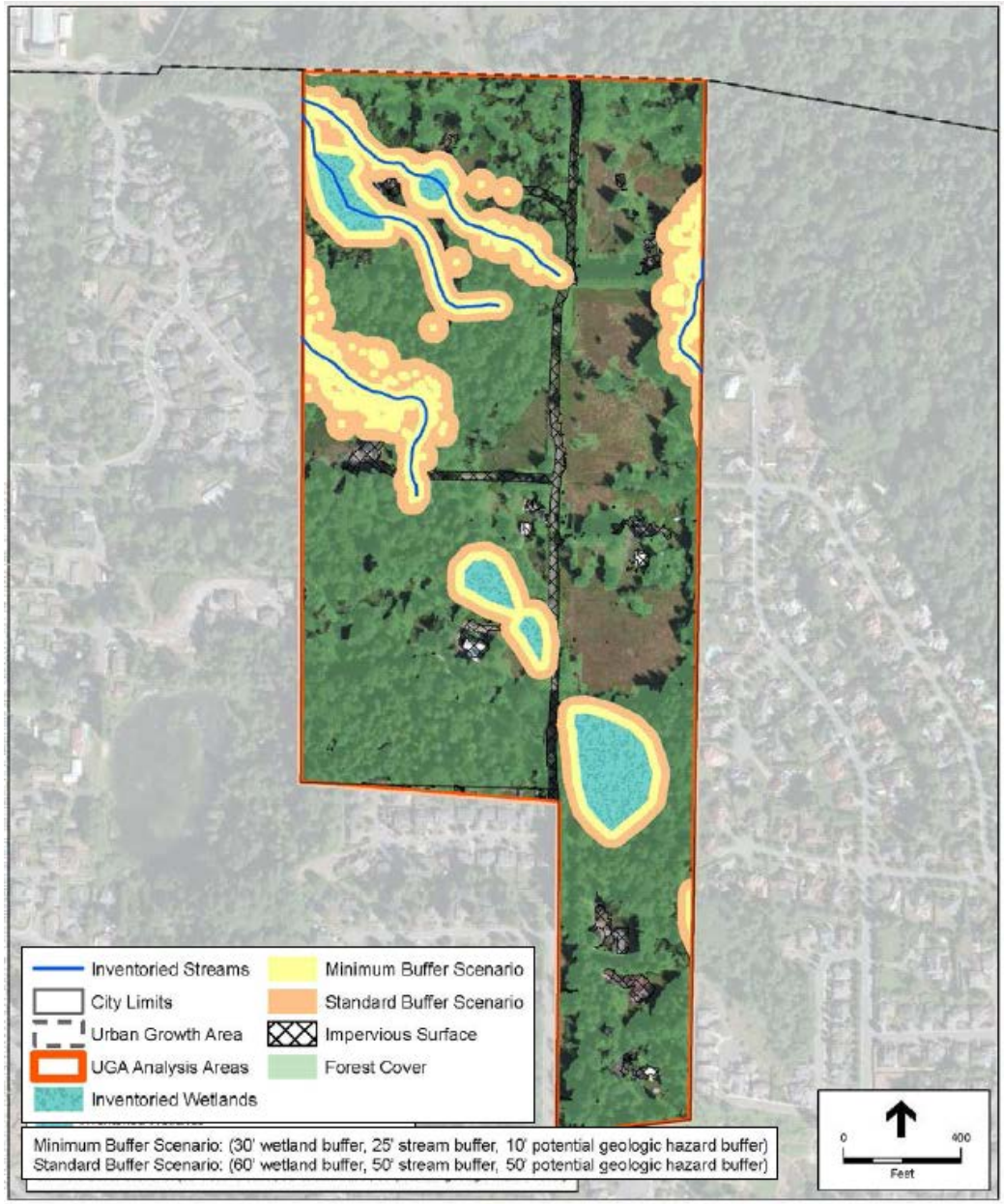
- Frequently flooded areas
- Geologically hazardous areas
  - Landslide, erosion, seismic hazards
- Fish and wildlife habitat conservation areas (FWHCAs)
  - Streams
  - Lakes <20 acres
  - Habitat for listed and sensitive fish and wildlife species
- Wetlands
- Critical aquifer recharge areas (CARAs)

How does the City protect sensitive areas?

DMC 14.42

- Prohibiting, limiting, and/or allowing certain activities
- Requiring buffers or setbacks around sensitive areas
- Requiring mitigation sequencing for impacts
  - Avoidance
  - Minimization / Reduction
  - Rectification
  - Compensation (for unavoidable impacts)
  - Monitoring

Sensitive Areas – development site implications



State Requirements

- GMA requires Comprehensive Plan update every 8 years
- Consideration of **Best Available Science** (BAS)
- Revise code, public review, and adoption

What is Best Available Science?

- Research and guidance
  - Conducted by qualified individuals
  - Documented methodologies
  - Verifiable results and conclusions
- Published bibliographies; state guidance; primary research publications
- 1995 Amendment to the GMA requires **consideration** of "best available science" for protecting critical areas

RCW 36.70A.172

Critical areas — Designation and protection — Best available science to be used.

(1) 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 areas. In addition, counties and cities shall give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries.

(2) If it determines that advice from scientific or other experts is necessary or will be of substantial assistance in reaching its decision, the growth management hearings board may retain assist in reviewing a petition under RCW **36.70A.290** that involves critical areas.

[2010 c 211 § 3; 1995 c 347 § 105.]

New City Plans and Designations

- 2015 Watershed Plan

http://www.duvallwa.gov/350/Watershed-Plan

- 2015 Comprehensive Plan (adopted in '16)

http://www.duvallwa.gov/297/Comprehensive-Planning

*"**GOAL ES 22:** Preserve and enhance Duvall's tree canopy cover through education and outreach, partnerships, and pragmatic implementation strategies."*

*"**GOAL ES 25:** Avoid mass clearing & grading associated with new developments that result in large amounts of tree loss…"*

Designated Tree City USA – April 2016

Implications of new Plans

- Prioritizing protection (& development allowances) consistent with watershed conditions

- Integrated approaches across land use / development standards *(Tree Protection update coming next!)*

Standard Development Scenario

Watershed Plan Development Scenario

Plans are conceptual – for planning purposes only

Project Advisory Committee

- Group responsibilities
  - Technical and policy input
  - Comments and questions
  - Sharing perspectives
  - Support through local adoption
- 5 meetings to-date
  - Feb, March, May, June, July
- Independent review and comment:
  - BAS Review Memo
  - Proposed Sensitive Areas updates (Initial June Draft)

Wetland Rating and Buffers

- 2014 Ecology Rating System includes new scoring range, & other relatively minor changes

Wetland Category (Updated Rating System)	Minimum Buffer Width (Wetland scores 3-4 habitat points)	Buffer Width (Wetland scores 5 habitat points)	Buffer Width (Wetland scores 6-7 habitat points)	Buffer Width (Wetland scores 8-9 habitat points)
Existing DMC 14.42 for all Category I – III wetlands	***60 ft – 150+ ft, based on habitat points***			
Category I: Based on total score	75 ft	105 ft	165 ft	225 ft
Category I: Bogs and Wetlands of High Conservation Value	190 ft	190 ft	190 ft	225 ft
Category I: Forested	75ft	105 ft	165 ft	225 ft
Category II: Based on score	75 ft	105 ft	165 ft	225 ft
Category III (all)	60 ft	105 ft	165 ft	225 ft
Category IV (all)	50 ft ***(Existing DMC 14.42 = 50 ft)***			

ESA

Wetland Buffers – Required Measures

(Ecology 2012 Guidance)

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

Buffer / Alteration Allowances

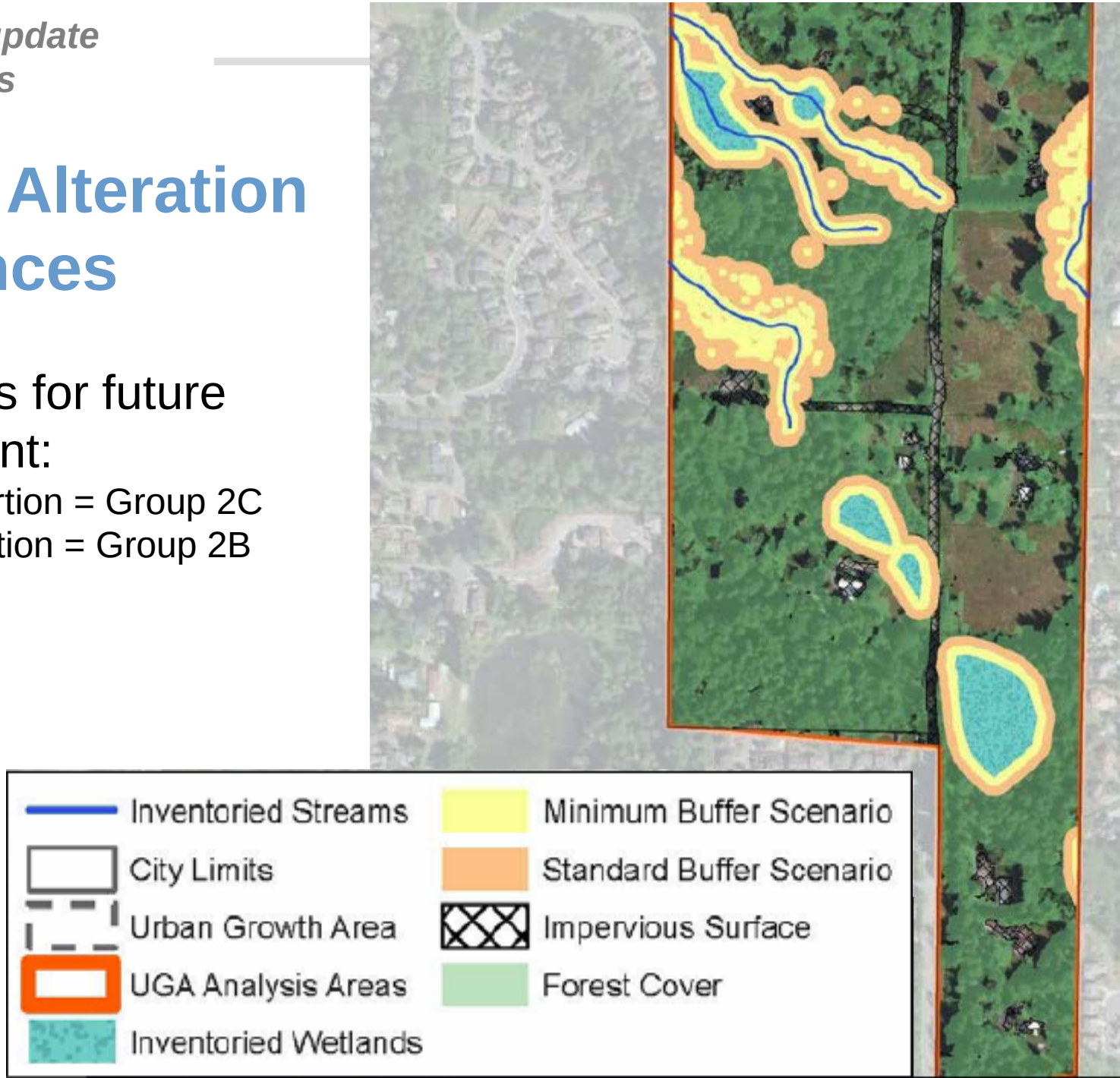
- Existing DMC reduction & averaging allowances:
  - 25% for Cat I & II Wetlands, 50% for Cat III & IV wetlands
  - Streams: 50% reduction, 25% averaging
- Ecology guidance suggests limiting buffer averaging to 25% maximum; prohibiting reduction
- Other allowances for alteration:
  - Public infrastructure (roads, utility crossings)
  - Site access – Stormwater facilities
  - Cat IV (lower threshold) and Cat III (higher threshold)
- Watershed Plan recommends approach tied to Subbasin Management Group

Groups 1 & 2A	Groups 2B & 2C	Group 3
Prohibited	Further limited	Generally maintained

Buffer / Alteration Allowances

Implications for future development:

- Western portion = Group 2C
- Eastern portion = Group 2B



Wildlife Habitat Corrido

- New FWHCA protections, as directed by 2015 Watershed Plan and 2015 Comprehensive Plan
- Corridors established along:
  - streams
  - wetland, erosion/landslide hazard
  - open space areas and parks, and
  - other remaining forested uplands in the City
- 700-foot wide “habitat corridor management zones”

Wildlife Habitat Corridors

- Best Available Science
  - Protection of sensitive areas alone does not provide sufficient habitat connectivity w/in urban areas
  - Small mammals, amphibians, & reptiles are generally more sensitive than large mammals and birds
  - Areas with greater than 50% disturbance generally require protections to maintain habitat connectivity
  - Impacts of fragmentation vary from species to species
  - BAS suggests widths from 350 -1,000 feet (challenging in urban environments)
- Neighboring jurisdictions
  - General protection standards w/in Redmond & Sammish
  - City of Bellevue - *Urban Wildlife Habitat Functional Model* (The Watershed Company, 2009)

Wildlife Habitat Corridors – Considerations

- Specific to each development site
- Corridor-Scale and Site-Scale conditions
- Recognition of variations across designated habitat corridor zones:
  - Existing development and fragmentation
  - Zoning – Subbasin Management Group
- Expectations consistent with scale of development
- Suite of management options provides flexibility (while still requiring protections)

Wildlife Habitat Corridors

City of Duvall SAO Update
WORKING DRAFT Habitat Corridor Rating and Management Form

Corridor Assessment Questions

1.1 What is the proximity of known sensitive areas to the property?
Measure the distance from the subject parcel edge to the edge of known sensitive ...as (streams, wetlands, ponds/lakes, other FWHCAs, *erosion and landslide hazard areas). Consult King County Sensitive Areas iMap or* ...ation (iMap) and City sensitive areas inventory *mapping to determine the location of sensitive areas (City inventory maps were* ...available data from Federal, State *and local sources). Distances can be measured using iMap, a GPS, or aerial ima*

- >1,500 ft
- <1,000 ft
- <500 ft
- <100 ft
- Property overlaps or is contiguous with a sensitive area

1.2 What is the property's connection to mapped habitat corridors an
Determine connections to off-site vegetated areas using on-site observ
are based on the tendency of wildlife to avoid crossing them and are
Connections must be vegetated with trees, shrubs (native or non-nat
may make up no more than 30% of the width of the connecting are
areas may extend through designated habitat corridors (whether o
include the following: McCormick Park; Lake Rasmussen Park; Tay

- No connection to other habitat areas – meaning that pav fully interrupt connection between the property and adj are at least 5 acres. (Driveways, trails, fences, and othe not be considered full interruptions; maintained lawns full interruptions).
- Partially interrupted connection to other habitat are property are connected to adjacent vegetated corri (Partially interrupted connections can include resid trails less than 15-feet wide, and maintained lawn

City of Duvall SAO Update
WORKING DRAFT Habitat Corridor Rating and Management Form

Site Assessment Questions

2.1 How many habitat types are found within the property?
Using aerial photographs, count the number of different habitat types on the parcel. Consult City mapping (or site environmental survey results) to determine the existence of known wetlands. Any habitat type that is wholly or partially within the parcel should be counted. Do not count wetlands twice (e.g., as both wetland and as forest), but do count different wetlands individually. Habitat types are based on groups of vegetation types or other important habitat features; habitat types include: mature coniferous forest, mixed forest, scrub-shrub, meadow and grassland, ponds and lakes, streams, and wetlands.

0 habitat types	points = 0
1 habitat type	points = 1
2 habitat types	points = 2
3+ habitat types	points = 3

2.2 What is the vegetative species richness of the property?
Count the number of plant species in the parcel that cover at least 10 square feet (cumulatively). Do not include species on the King County noxious weed list, available at http://www.kingcounty.gov/services/environment/animals-and-plants/noxious-weeds/laws/list.aspx.

0-1 species	points = 0
2-5 species	points = 1
6-19 species	points = 2
20+ species	points = 3

2.3 What is the percent of forest canopy (vegetation >25 feet in height) cover of the property?
Visually estimate the percent of aerial forest canopy cover found across the entire p

0%	points = 0
0-25%	points = 1
	points = 2
	points = 3

Rating & Management Form to be presented during Workshop

Next Steps

- Advisory Committee Meeting #6 – final review and recommendation
- Planning Commission (Aug 23 & Sept 13)
- City Council (Sept 19 Hearing & Oct 3)

Questions / Comments:

Lara Thomas – Duvall Planning Director
Lara.thomas@duvallwa.gov, (425) 788-2779 ext 2

Aaron Booy – Consultant project lead with ESA
abooy@esassoc.com, (206) 789-9658

Advisory Committee – Meeting #5 (approach)

Introduction / recap of work resulting in the July '17 Draft #2 updated SAO.

Geohazards section – short presentation on BAS, and proposed updates. Allow 10-15 minutes of discussion and questions on this portion, and then suggest that additional comments be provided by email. State that we'll factor in comments, and come back to this topic for the August 14th AC meeting.

Key Issues – as stated in the agenda, for each we will proceed in the following structure:

- BAS Recap
- What we heard after Meeting #4
- Implications of changes
- Staff recommendation
- Issue "voting" to focus discussion

Key Issue #1: Density calculations

BAS Recap: The adopted Watershed Plan is the Duvall-specific BAS that is being used to inform revision of the density calculation approach. The City, and all, appear to recognize that the current "Gross Density" calculation approach is creating unrealistic development expectations for properties that have existing sensitive areas. This creates pressure for sensitive areas impacts, buffer reduction, fragmentation, minimizing lot sizes – and does not provide room for the "integrated" development approaches adopted by the Comp Plan and Watershed Plan.

What we heard: Quickly recap – highlighting the variety of perspectives (specific examples of feedback/suggestions, so people know that we looked at everything in detail)

Implications: Graphics used to highlight the conceptual implications on residential site development (comparing current Gross, to Sensitive Areas only, to Sensitive Areas + different %s of Buffer)

Staff Recommendation: Lara to highlight – the approach in proposed Draft #2 provides balance consistent with Watershed Plan…

Highlight how this would play out for different residential sites across the City (including the following potential as examples: Batten Rd.-Hanover, 145th Street Village (DeDenato), North UGA?)

Issue "voting" and discussion: My thought is to have something like the following on a big board, using initialed stickers as we discussed (see next page for explanation)

In my opinion, the Draft #2 proposal for **residential density calculations** is…				
… nowhere close to protective enough	… almost achieves the right level of protection	… right on the money	… somewhat too restrictive of future development	… way too restrictive for future development
I am concerned about impacts to Sensitive Areas because:		*I like the proposal because:*	*I am concerned about impacts to future development opportunity because:*	
• •		• •	• •	

[My hope is that this will keep the conversation focused on the underlying concerns that people have with the updated approach that we are taking, as opposed to making people choose one alternative vs another. By having people put up stickers, we'll be able to see how far apart people's perspectives are distributed (my guess is they won't be that far apart… but maybe I'm just being optimistic). And then by getting people to talk about why they put their sticker where they did (and noting these reasons on the board, we'll be able to focus discussion and hopefully move toward solutions on the underlying concerns that are identified by the AC]

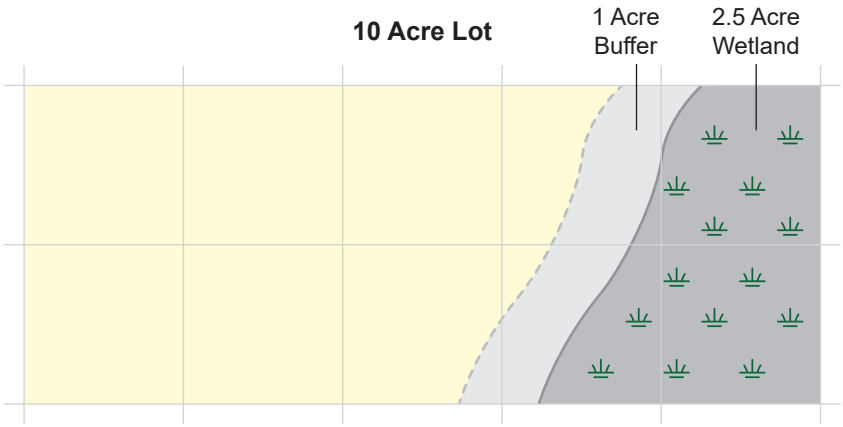
Key Issue #2: Buffer reduction / alteration allowances

[I'll flesh this out after I get input on the above from you…]

Development Density Calcuations

10 Acre Lot Breakdown:
(For both Existing & Proposed Standards)

	2.5 Acres	Wetland
	1.0 Acre	Buffer
	1.5 Acres	Internal ROW
	0.5 Acres	Open Space
+	**4.5 Acres**	**For Development**
	10.0 Acres	



Assumed: R4 Zoning, Minimum Lot Size: 6,000 SF

NOTE: Conceptual graphics are approximate and for illustrative purposes only. In order to present implications of development density calculation options, addtional street and lot setback considerations are not included.

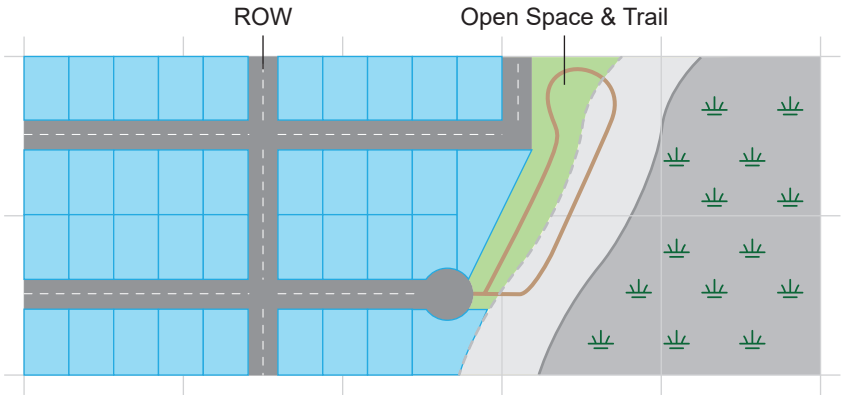
Existing Standards

Max Density:
4 Lots / Gross Acre

40 Lots Allowed
(10 Acres x 4 per Acre)

Calculated Lot Size = 4,900 SF per Lot
(4.5 Acres / 40 Lots)

Below minimum lot size



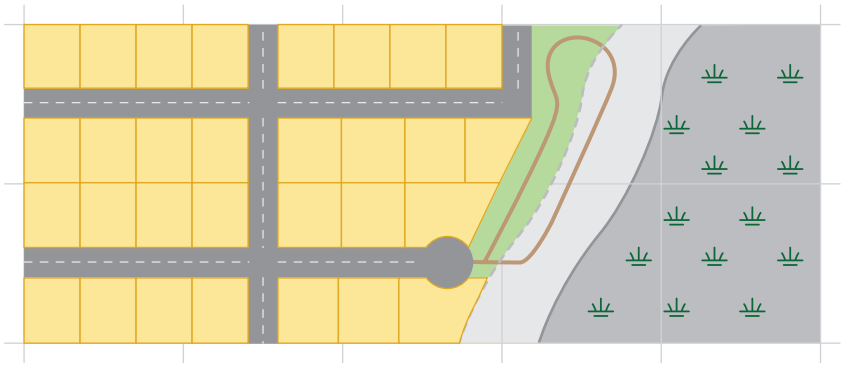
PROPOSED
Group 3 Development

Max Density:
4 Lots / (Gross Acre – Sensitive Areas)

30 Lots Allowed
(7.5 Acres x 4 per Acre)

Actual Lot Size = 6,530 SF per Lot
(4.5 Acres / 30 Lots)

Exceeds minimum lot size



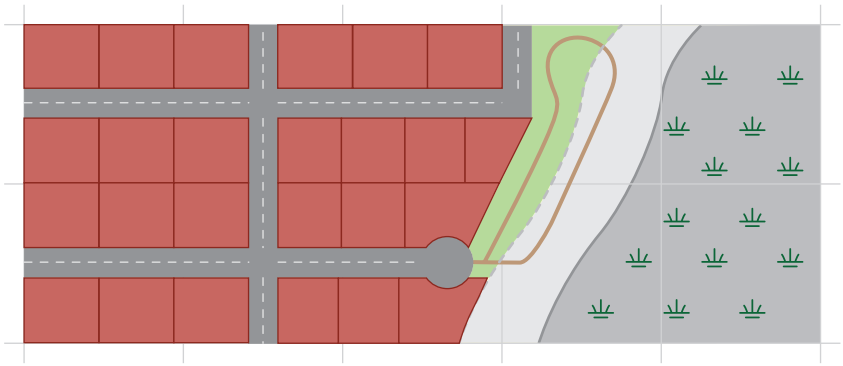
PROPOSED
Group 2B Development

Max Density:
4 Lots / (Gross Acre – Sensitive Areas – Buffers)

26 Lots Allowed
(6.5 Acres x 4 per Acre)

Actual Lot Size = 7,540 SF per Lot
(4.5 Acres / 26 Lots)

Exceeds minimum lot size



Chapter 14.42 - SENSITIVE AREAS REGULATIONS

Working Draft Update – Draft #2, July 18, 2017

NOTES:

- *New updates within this July 2017 Draft are highlighted in YELLOW and generally flagged with comments.*
- *Proposed updates within Geologically Hazardous Areas section (14.42.400) are entirely new within this Draft.*

14.42.010 - Purpose.

The purpose of this chapter is to identify environmentally sensitive areas and to supplement the development requirements contained in the various use classifications by providing additional controls without violating any citizens' constitutional rights. Wetlands, fish and wildlife habitat conservation areas (including streams and habitat corridors), geologically hazardous areas, frequently flooded areas, and critical aquifer recharge areas and their corresponding buffers as defined in this chapter, constitute environmentally sensitive areas that are of special concern to Duvall. The standards and mechanisms established in this overlay district are intended to protect these environmentally sensitive features in Duvall. By regulating development and minimizing alterations to sensitive areas and their buffers, this overlay district seeks to implement the goals and policies of Washington State to:

A. Protect members of the public and public resources and facilities from injury, loss of life, property damage or financial losses due to flooding, erosion, landslides, seismic events, soil subsidence or steep slope failures;

B. Protect unique, fragile and valuable elements of the environment including fish and wildlife and their habitats;

C. Mitigate unavoidable impacts on environmentally sensitive areas by regulating alterations in and adjacent to sensitive areas;

D. Prevent cumulative adverse environmental impacts to sensitive areas;

E. Protect the public trust as to navigable waters and aquatic resources;

F. Meet the requirements of the National Flood Insurance Program and maintain Duvall as an eligible community for federal flood insurance benefits;

G. Alert members of the public including, but not limited to appraisers, owners, potential buyers or lessees to the development limitations of sensitive areas;

H. Provide city officials with sufficient information to protect sensitive areas;

I. Implement the policies of the State Environmental Policy Act, Revised Code of Washington (RCW) 43.21C, the Washington State Growth Management Act (GMA), and the Duvall comprehensive land use and utility plans which call for protection of the natural environment and the public health and safety;

J. Protect wetlands, floodplains, critical aquifer recharge areas, and fish and wildlife habitat conservation areas and their buffers by applying the Best Available Science to ensure no net loss of ecological functions and values; and

K. Allow for reasonable use of private property in accordance with DMC Section 14.42.070

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.020 - Applicability.

A. When any provision of any other chapter of this code conflicts with this chapter, that which provides more protection to the sensitive areas shall apply unless specifically provided otherwise in this section; provided, however, that municipal provisions shall not conflict with preemptive controlling state regulations such as the Shoreline Master Program, Chapter 173-26 WAC.

B. Until the requirements of these sensitive area regulations are fulfilled, the city shall not grant any approval or permission to alter the conditions of any land, water or vegetation, or to construct or alter any structure or improvements for an applicable development, project, or action.

C. The following are applicable activities of developments, projects, and actions that must comply with all provisions of the sensitive area regulations, unless otherwise exempted by the chapter:

1. Removing, excavating, disturbing or dredging soil, sand, gravel, minerals, organic matter or materials of any kind, clearing, grazing, or creating impervious surface;

2. Dumping, discharging or filling with any material;

3. Constructing, reconstructing, demolishing or altering the size of any structure or infrastructure, subject to the provisions for a nonconforming structure of DMC Chapter 14.83, provided that there is no additional impact on sensitive areas and/or buffer;

4. Any other activity for which a city permit is required including but not limited to the following: Type I permits, building permits and other construction permits; and Types II, III permits, and Type IV permits in accordance with DMC Section 14.08.010(C).

D. Altering sensitive areas and/or buffers is prohibited except when:

1. Alteration is approved pursuant to the reasonable use provisions of section 14.42.070 of this Chapter or variance provisions of ~~DMC Section 14.42.070~~DMC Chapter 14.70; or

2. Alteration is necessary to accommodate an essential public facility or public utility where no feasible alternative location will accommodate the facility and the facility is located, designed, and constructed to minimize and where possible avoid sensitive area disturbance to the maximum extent feasible, pursuant to section 14.42.070 of this Chapter; or

3. Alteration is part of an essential element of an activity allowed by this title and all feasible measures to avoid and minimize impacts have been employed. Such feasible measures shall include but not be limited to clustering where permitted by zoning and as appropriate to protect sensitive areas and buffers. The purposes of clustering shall be to minimize adverse effects of development on sensitive area functions and values, minimize land clearing, maintain soil stability, preserve native vegetation, maintain hydrology, and mitigate risk to life and property.

E. Land that is located wholly within a sensitive area or buffer may not be platted for purposes of creating buildable lots. Land that is located partially within a sensitive area or its buffer may be platted provided that each resulting lot has sufficient buildable area outside of the sensitive area or buffer with provision for drainage, erosion control, vegetation maintenance and related features that will not adversely affect the sensitive area or its buffer.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.025 – Relationship to Other Regulations

A. These sensitive areas regulations shall apply as an overlay and in addition to zoning and other regulations adopted by the City.

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B. Where a~~A~~ny individual sensitive area and associated buffer overlaps with ~~adjoined by~~ another type of sensitive area, the area of overlap shall have the buffer and meet the requirements that provide the most protection to the sensitive areas involved. When any provision of this Chapter or any existing regulation, easement, covenant, or deed restriction conflicts with this Chapter, that which provides more protection to the sensitive areas shall apply.

C. These sensitive areas regulations shall apply concurrently with review conducted under the State Environmental Policy Act (SEPA), as locally adopted. Any conditions required pursuant to this Chapter shall be included in the SEPA review and threshold determination.

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

14.42.030 - Sensitive area review.

A. Authorizations Required Prior to Issuing a Permit. The city shall determine if the proposed activity or use is permitted pursuant to this chapter. No land use development permit, construction permit, or land division approval required by this title shall be granted until the director has determined that the applicant has complied with the applicable provisions of this chapter including the mitigation standards set forth in DMC Section 14.42.130. The following provisions apply:

1. When a development proposal includes, is adjacent to, or within three hundred (300) feet of a sensitive area or associated buffers the applicant shall meet with the director prior to the submission of any required development application to discuss the goals, purposes, objectives and requirements of the sensitive areas review. At the director's discretion, this can be addressed concurrently with the preapplication meeting for the project.

2. The director shall perform a sensitive area review for any application for a development proposal on a site that includes one or more sensitive areas or would affect sensitive areas on adjacent lands, unless otherwise provided in this chapter. As part of all development applications, the director shall verify the information submitted by the applicant to:

   a. Confirm the nature and type of the sensitive areas and associated buffers;

   b. Determine the need for sensitive area studies and the adequacy of any such studies submitted with the application;

   c. Determine whether the development proposal is consistent with these sensitive area regulations;

   d. Determine whether proposed alterations to sensitive areas are necessary;

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

3. The director, may, at their discretion and at the applicant's expense, retain a qualified consultant, as defined in DMC 14.42.060.A.1, to review and confirm the applicant's reports, studies, and plans.

~~3~~4. The director shall include the sensitive area regulation requirements in every report recommendation or administrative decision and conditions of approval as may be necessary to address the sensitive area regulations.

~~4~~5. The decision-maker may approve, approve with conditions, or deny any development proposal in order to comply with the requirements of this chapter and to carry out the goals, purposes and objectives of these regulations. Decision-making in accordance with this title shall be in

accordance with DMC Section 14.08.010. The hearing examiner shall give the director's recommendation substantial weight in project permit application consideration.

~~5~~6. Approval of a development proposal pursuant to the provisions of this chapter does not discharge the obligation of the applicant to comply with the other provisions of this code.

B. Identification and Mapping of Sensitive Areas. The city and/or state agencies have partially identified sensitive areas, and areas where the conditions under which sensitive areas typically occur are known, or have the potential to occur. The approximate location and extent of sensitive areas within the city's jurisdiction are shown on the sensitive area maps, which shall be available at the city's planning department for public inspection. Property owners, the director, and/or members of the public may use these as a general guide but the maps do not provide a comprehensive accounting of areas subject to this chapter nor do they provide a definitive sensitive area designation. Sensitive area locations and boundaries shown on the city's maps are approximate and may not include all sensitive areas or required buffers that may be associated with sensitive areas. Field investigation, analysis by a qualified professional and review of other sources of credible scientific information such as Washington Department of Fish and Wildlife (WDFW) Priority Habitat Species data, and Washington Department of Natural Resources stream typing maps shall be required to confirm the presence or absence of a sensitive area and its boundaries and buffers.

C. Relationship to Other Jurisdictions. Compliance with the provisions of this chapter does not necessarily constitute compliance with other regulations and permit requirements. Permit applicants are responsible for complying with all federal, state, county, and local regulations that may pertain to a proposed development, provided that the following shall apply:

1. In cases where other agencies have jurisdiction over sensitive areas and the director determines that the permit conditions imposed by such agencies satisfy the requirements of this chapter, those requirements may be adopted to meet the requirements of this chapter. Such agencies may include, but are not limited to; the United States Army Corps of Engineers, the United States Environmental Protection Agency, and United States Fish and Wildlife Service, the National Marine Fisheries Service or NOAA Fisheries and the Washington State Department of Ecology and Department of Fish and Wildlife.

2. The city shall make findings required by this chapter when adopting conditions of another jurisdictions' permit. Such requirements shall be a condition of sensitive area approval and enforceable by the city. In the event that there is a conflict between permit requirements and the standards of this chapter, the more restrictive standards shall apply.

3. The city shall notify the applicant in writing when subsection C of this section applies.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.040 - General exemptions.

All exempted activities shall use reasonable methods to avoid and minimize impacts to sensitive areas. Any alteration of a sensitive area that is determined by the Director to not be a necessary outcome of the exempted activity shall be restored at the responsible party's expense.

The following developments, activities, and associated uses shall be exempt from the requirements of this chapter, provided that they are otherwise consistent with the limitations included herein, as well as provisions of other local, state, and federal laws and requirements~~The following are exempt from the provisions of this chapter and any administrative rules adopted thereunder~~:

A. Emergencies. Those activities necessary to prevent an immediate threat to public health, safety, or welfare, or that pose an immediate risk of damage to private property and that require remedial or preventative action in a timeframe too short to allow for compliance with the requirements of this chapter.

Emergency actions that create an impact to a sensitive area or its buffer shall use reasonable methods to address the emergency; in addition, they must have the least possible impact to the sensitive area or its buffer. The person or agency undertaking such action shall notify the director within one working day following commencement of the emergency activity. Within thirty (30) days, the director shall determine if the action taken was within the scope of the emergency actions allowed in this subsection. If the director determines that the action taken, or any part of the action taken, was beyond the scope of an allowed emergency action, then enforcement provisions DMC Section 14.42.140 shall apply.

After the emergency, the person or agency undertaking the action shall fully fund and conduct necessary restoration and/or mitigation for any impacts to the sensitive area and buffers resulting from the emergency action in accordance with an approved sensitive area report and mitigation plan. The person or agency undertaking the action shall apply for all approvals required for this chapter. Restoration and/or mitigation activities must be initiated within one year of the date of the emergency, and completed in a timely manner.

B. For the following ongoing agricultural activities in existence on the date these regulations become effective:

1. Grazing of livestock;
2. Mowing of hay, grass or grain crops;
3. Tilling, discing, planting, seeding, harvesting, and relative activities for pasture, food crops, grass seed or sod, provided that such activities shall not involve the use or conversion of any wetland or stream or related buffer not currently being used for such activity;
4. ~~Normal and routine maintenance~~Maintenance or replacement of existing irrigation and drainage ditches that do not meet the criteria for being considered a fish and wildlife habitat area;
5. ~~Normal and routine maintenance~~Maintenance or replacement of existing farm ponds, fish ponds and livestock watering ponds that do not meet the criteria for being considered a fish and wildlife habitat area; provided that, such activities shall not involve conversion of any wetland not currently being used for such activity.

This exemption shall not apply to agricultural use that has been abandoned pursuant to DMC Chapter 14.76, Nonconformance and Reuse Standards, provided that this shall not apply to allowing land used for agricultural activities to lie fallow in which it is plowed and tilled but left unseeded; allowing land used for agricultural activities to lie dormant as a result of adverse agricultural market conditions; allowing land used for agricultural activities to lie dormant because the land is enrolled in a local, state, or federal conservation program, or the land is subject to a conservation easement.

C. Forest practices governed by a valid forest practices permit granted by the Washington State Department of Natural Resources, except where:

1. The lands have been or are proposed to be converted under a conversion option harvest plan to a use other than commercial forest product production as provided in RCW 76.09.050 and RCW 76.09.240; or
2. On lands which have been platted after January 1, 1960, as provided in RCW 76.09.050 and RCW 76.09.240.

D. Maintenance of existing, lawfully established landscaping and gardens within a regulated sensitive area or its buffer, including but not limited to, mowing lawns, weeding, removal of noxious and invasive species, harvesting and replanting of garden crops, pruning and planting of ornamental vegetation or indigenous native species to maintain the condition and appearance of such areas as they existed prior to adoption of this code, provided that native growth protection areas, mitigation sites, or other areas protected via conservation easements or similar restrictive covenants are not covered by this exception. This exemption does not apply if redevelopment or expansion of existing structures occurs.

E. Low impact activities such as hiking, canoeing, nature study, photography, fishing, education or scientific research.

F. Activities undertaken to comply with a United States Environmental Protection Agency superfund related order, or a Washington Department of Ecology order pursuant to the Model Toxics Control Act that specifically preempts local regulations in the findings of the order.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.050 - Allowed activities.

The Director may authorize the following activities within sensitive areas provided that sensitive area review has been completed consistent with all requirements of this Chapter. For all allowed activities including in this section or allowed within specific sensitive areas types by other sections of this Chapter, the Director may require completion of sensitive areas studies and may apply conditions to the underlying permit or approval to ensure that the allowed activity is consistent with the provisions of this Chapter.

Commented [AB1]: Added to provide additional clarity

A. Maintenance, operation and/or repair of existing dikes and drainages, existing stormwater facilities rights-of-way, trails, roads, utilities and buildings within sensitive areas, provided that the activity does not further alter, impact, or encroach upon the sensitive area or buffer or further affect the functions of sensitive areas, and there is no increased risk to life or property as a result of the proposed operation, maintenance, or repair and provided further that:

1. The applicant shall submit a written description of the maintenance activity to the director with all of the following general information:

   a. Type, timing, frequency and sequence of the above maintenance activity to be conducted;

   b. Type of equipment to be used (hand or mechanical);

   c. Manner in which the equipment will be used;

   d. Best management practices to be used; and

   e. Any chemical applications to be used.

2. The applicant's written description may be valid for up to five years provided that there is no significant change, as determined by the director, to the activities submitted in the written description for the maintenance activity or to the natural environment.

3. Maintenance plans are not required for residential uses.

B. Maintenance, repair or replacement of an existing nonconforming structure pursuant to the requirements of DMC Section 14.76.070, rRepair or reconstruction of nonconforming structure, that does not further alter or increase the impact to the sensitive area or buffer and results in no increased risk to life or property as a result of the proposed modification or replacement is allowed, provided that this provision does not apply to structures damaged or destroyed beyond fifty (50) percent of their assessed value and provided further that a building permit application for repair or reconstruction is submitted to the city within twelve (12) months of the occurrence of the damage or destruction.

C. Activities within an improved right-of-way including replacement, modification, installation, or construction of utility facilities, lines, pipes, mains, equipment, or appurtenances, not including substations, when such facilities are located within the improved portion of the public right-of-way or a city-authorized private roadway except those activities that alter a wetland or watercourse, such as culverts or bridges, or result in the transport of sediment or increased stormwater; are allowed; subject to the following:

1. Sensitive area and/or buffer widths shall be increased, where possible, equal to the width of the lost sensitive area and/or buffer; and

2. Retention and/or replanting of native vegetation shall occur wherever possible along the right-of-way improvement and resulting disturbance.

D. Utility projects that have minor or short-duration impacts to sensitive areas, as determined by the director in accordance with the criteria below, and which do not significantly impact the functions or values of a sensitive area(s), provided that such projects are constructed with best management practices and appropriate restoration measures are provided. These activities shall not result in the transport of sediment or increased stormwater. Such allowed minor utility projects shall meet the following criteria:

1. There is no practical alternative to the proposed activity with less impact on sensitive areas;
2. The activity involves the placement of a utility pole, street signs, anchor, or vault or other small component of a utility facility; and
3. The activity is the minimum necessary to accomplish the installation.

E. Public and private pedestrian trails are allowed, except in wetlands, fish and wildlife habitat conservation areas, and/or their buffers, subject to the following:

1. The trail surface shall meet all other city requirements including water quality standards;
2. Sensitive area and/or buffer widths shall be increased, where possible, equal to the width of the trail corridor, including disturbed areas; and
3. Trails proposed to be located in landslide or erosion hazard areas shall be constructed in a manner that does not increase the risk of landslide or erosion and in accordance with an approved geotechnical report.

F. The following vegetation removal activities are allowed in sensitive areas:

1. Removal of invasive plant species, including English ivy (*Hedera helix*), Himalayan blackberry (*Rubus armeniacus*), Evergreen blackberry (*Rubus laciniatus*) and other species on the King County Noxious Weed List. Removal of invasive plant species shall be restricted to hand removal unless permits or approval from the appropriate regulatory agencies have been obtained for approved biological or chemical treatments or other removal techniques. All removed plant material shall be taken away from the site and appropriately disposed of. Plants that appear on the Washington State Noxious Weed Control Board and King County Noxious Weed Control Board lists of noxious weeds must be handled and disposed of according to a noxious weed control plan appropriate to that species.~~The removal of the following invasive vegetation with hand labor and light equipment:~~

~~a. English Ivy (Hedera helix);~~

~~b. Himalayan blackberry (Rubus discolor, R. procerus);~~

~~c. Evergreen blackberry (Rubus laciniatus); and~~

~~d. Noxious weed species as defined by the state of Washington.~~

2. The removal from sensitive areas and buffers of hazard trees and/or hazard tree limbs through pruning that are posing a threat to public safety, or an imminent risk of damage to a permanent structure, provided that:

a. The applicant submits a tree risk assessment report from a certified arborist~~,~~ or professional forester that documents the hazard for any trees ~~that are not already dead or clearly dying and are~~ potentially posing a threat to public safety, or an imminent risk of damage to a permanent structure. The tree risk assessment shall be conducted in accordance with the International Society of Arboriculture Best Management Practices: Tree Risk Assessment (2013, or as updated)~~; and provides a replanting schedule for the replacement trees in compliance with the replacement tree requirements of subsection (F)(2)(d) of this section;~~

Commented [AB2]: Suggestion to use this as standard for risk assessment, consistent with LFP approach.

http://www.isa-arbor.com/store/product.aspx?ProductID=442

b. Tree cutting shall be limited to pruning and crown thinning wherever such measures would reduce the tree hazard to a risk rating of "low" according to the Tree Risk Assessment~~, unless otherwise justified by a certified arborist or professional forester~~. Where pruning or crown thinning is documented as ~~not~~ insufficient to reduce~~address~~ the hazard to "low", trees may~~should~~ be removed or converted to wildlife snags;

c. If native vegetation is cut or removed from a sensitive area or buffer, it shall be left within the sensitive area or buffer where practicable unless removal is warranted due to safety considerations, the presence of an established disease infestation or other hazard, or because of access or maintenance needs if the area is a utility or access right-of-way;

d. The landowner shall replace any trees that are removed with new trees at a ratio of ~~one~~ six replacement trees for each tree removed (~~1~~6:1) ~~in accordance DMC Section 14.40.030(D)~~. Coniferous trees shall be preferred over deciduous trees for all replacement trees within sensitive areas and buffers, and shall be required unless a certified arborist or landscape architect determines that replacement with coniferous trees is not appropriate due to site conditions. Replacement trees within sensitive areas and buffers shall be species that are native and indigenous to the site, and shall be a minimum of a five (5) gallon container plant material size Replacement trees may be planted at a different, nearby location if it can be determined that planting in the same location would create a new hazard or potentially damage the sensitive area. ~~Replacement shall be in accordance with DMC Section 14.40.030(D);~~

e. When permitted as an allowed activity consistent with the criteria of this section, removal of h~~H~~azard trees ~~or trees~~ that pose an imminent threat to life or property shall be completed ~~may be removed~~ in accordance with DMC Section 14.40.030, Tree protection standards.

3. Measures to control a fire or halt the spread of disease or damaging insects consistent with the state Forest Practices Act; Chapter 76.09 RCW, provided that the removed vegetation shall be replaced in-kind or with similar native species within one year in accordance with an approved restoration plan.

G. Minor site investigative work necessary for land use submittals, such as surveys, soil logs, percolation tests, and other related activities, where such activities do not require construction of new roads, removal of native trees or shrubs, or displacement of more than five cubic yards of material are permitted. Investigations involving displacement of more than five cubic yards of material, including geotechnical soil borings, groundwater monitoring wells, percolation tests, and similar activities shall require submittal of specific plans and restoration plans. In every case, impacts to the sensitive area shall be minimized and disturbed areas shall be immediately restored.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.060 - Sensitive area studies.

A. Required. An applicant for a development proposal that includes, or is adjacent to, sensitive areas or buffers, shall submit such studies as are required by the director to adequately evaluate the proposal and all probable impacts. The study shall be prepared by a qualified professional as defined below and with all associated costs, including independent review, paid for by the applicant.

1. A "qualified professional or qualified consultant" means a person with experience and training with expertise appropriate for the relevant sensitive area subject in accordance with WAC 365-195-905(4). A qualified professional must have obtained a B.S. or B.A. or equivalent degree in biology, soil science, engineering, environmental studies, fisheries, geology, geomorphology or related field, and related work experience and meet the following criteria:

a. A qualified professional for wetlands must have a degree in biology, ecology, soil science, botany, or a closely related field and a minimum of five years of professional experience in wetland identification and assessment in the Pacific Northwest.

b. A qualified professional for geologically hazardous areas must be a licensed engineering geologist or geotechnical engineer, licensed in the state of Washington.

c. A qualified professional for fish and wildlife habitat conservation areas must have a degree in wildlife biology, ecology, fisheries, or closely related field and a minimum of two years professional experience related to the subject species/habitat type.

d. A qualified professional for sensitive aquifer recharge areas means a Washington State licensed hydrogeologist, geologist, engineer, or other scientist with a minimum of two years professional experience in preparing hydrogeologic assessments in Washington.

e. A qualified professional for trees in sensitive areas means an individual with related training and experience to demonstrate competency in arboriculture or urban forestry with tree retention, protection, and planting expertise and must be certified by the International Society of Arboriculture.

B. Incorporating of Best Available Science. The sensitive area study shall use scientifically valid methods and studies in the analysis of sensitive area data and field reconnaissance and reference the source of science used. The sensitive area report shall evaluate the proposal and all probable impacts to sensitive areas in accordance with the provisions of this Chapter.

C. Minimum Study Contents. At a minimum, the sensitive area study shall contain the following:

1. The name and contact information of the applicant, a description of the proposal, and identification of the permit requested;

2. A copy of both the site survey and site plan for the development proposal that shows and labels all on-site sensitive areas and buffers. The site plan showing the development proposal, or a separate clearing and grading plan, shall show all on-site sensitive areas and proposed clearing and grading limits and construction stormwater best management practices (BMPs);

3. The dates, names, and qualifications of the persons preparing the study and documentation of any fieldwork performed on the site;

4. Identification and characterization of all sensitive areas, including wetlands, water bodies, wildlife corridors, landslide and/or erosion hazard areas, and associated buffers adjacent to the proposed project area;

5. A statement specifying the accuracy of the study, and all assumptions made and relied upon;

6. An assessment of the probable cumulative impacts to sensitive areas resulting from development of the site and the proposed development;

7. A description of reasonable efforts made to apply mitigation sequencing pursuant to DMC 14.42.130(B) to avoid, minimize, and mitigate impacts to sensitive areas;

8. Plans for adequate mitigation, as needed, to offset any impacts, in accordance with DMC 14.42.130 (C) including, but not limited to:

a. The impacts of any proposed development within or adjacent to a sensitive area or buffer on the critical area; and

b. The impacts of any proposed alteration of a sensitive area or buffer on the development proposal, other properties and the environment;

9. A discussion of the performance standards applicable to the sensitive area and proposed activity;

10. Financial guarantees to ensure compliance, as needed for any required mitigation; and

11. Any additional information required for specific sensitive areas within or adjacent to the proposed activity, as specified in this chapter.

D. Unless otherwise provided, a sensitive area study may be supplemented by or composed, in whole or in part, of any reports or studies required by other laws and regulations or previously prepared for and applicable to the development proposal site, as approved by the [director].

E~~B~~. Waivers. The director may waive the requirement for a sensitive area study if there is a substantial showing that the following criteria are met:

1. A field investigation report documents no sensitive areas effect the property;
2. There will be no alteration of the sensitive area or required buffer;
3. The development proposal will not impact sensitive areas in a manner contrary to the goals, purposes, objectives and requirements of this chapter;
4. The minimum standards required by this chapter are met.

F~~C~~. Exceptions. No sensitive area study is required for the following development proposals:

1. A residential building permit for the remodel of a structure when no alteration of the sensitive area will occur as a result of the remodel activity or any associated construction for additional parking;
2. A residential building permit for a lot that was subject to a previously approved sensitive areas study, provided that the previous study identified the impacts associated with the current development proposal.

~~D. The contents of the sensitive area study are specified in the following sections of this chapter. The director may require such supplements or amendments to the study as necessary to develop a reasonably comprehensive understanding of the site conditions, potential impacts, and required mitigation.~~

G~~E~~. Independent Review. Based on a review of the information contained in the sensitive area study and the conditions of the development proposal site, the director may require independent review of any such study. This independent review shall be performed by a qualified professional approved by the city and paid for by the applicant. The purpose of such independent review is to assist the city in evaluating the effects on sensitive areas that may be caused by a development proposal and to facilitate the decision making process.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.070 - ~~Reasonable use~~Exceptions

Except as prohibited in the City of Duvall shoreline jurisdiction under DMC Chapter 14.78, the following are exceptions from the provisions of this chapter when applicable criteria and performance standards are met:

A. Public Agency and Utility Exception. If the application of this Chapter would prohibit a development proposal by a public agency or public utility, the agency or utility may apply for an exception pursuant to this section:

1. The public agency and utility exception shall apply to the department and include a sensitive areas study, including mitigation plan, if necessary; and any other related project documents, such as permit applications to other agencies, special studies, and environmental documents prepared pursuant to the State Environmental Policy Act (Chapter 43.21C RCW).
2. The director may approve alterations to sensitive areas, buffers and sensitive area setbacks by an agency or utility not otherwise allowed by this chapter when the following criteria are met:
   a. There is no other reasonable alternative to the activity or proposed development with less impact on the sensitive area; and

b. The activity or development proposal is designed to avoid, minimize, and mitigate the impact on environmentally sensitive areas consistent with the avoidance and mitigation sequencing requirements in this chapter, and, if applicable:

c. The proposed development or activity is of linear nature and is on an existing corridor or connects to public lands, trails, utility corridors, rights-of-way or other public infrastructure, or is required for functional reasons such as gravity flow.

B. Reasonable Use Exception. ~~A.~~ If the application of the sensitive area regulations would deny all reasonable use of the property; development may be allowed if the development is consistent with the general purposes of the sensitive area regulations, is in the public interest, and a hearing examiner approves a reasonable use permit.

~~B. Reasonable Use Standards.~~ To approve a reasonable use ~~the hearing examiner for~~ the city must find that the proposal is consistent with all of the following criteria:

1. There is no portion of the site not subject to sensitive area regulations where the provisions of the sensitive area regulations would not allow reasonable economic use, without a reasonable use permit, including agricultural use or continuation of legal nonconforming uses;

2. There is no feasible on-site alternative to the proposed use or activities that will provide reasonable economic use, including location on any contiguous parcel that has been under the ownership or control of the applicant since the effective date of this chapter; other allowed uses; continuation of legal nonconforming uses; reduction in size, change in timing of activities, revision of road and lot layout, and/or related site planning considerations, that would allow a reasonable economic use with less adverse impacts to sensitive areas and associated buffers;

3. The inability to derive reasonable economic use of the property is not the result of actions by the applicant in segregating or dividing the property and/or creating the condition of lack of use after the effective date of this chapter;

4. All reasonable methods to avoid or reduce adverse effects on sensitive area functions and values have been employed, including locating activities as far as possible from sensitive areas and design that will result in the minimum alteration of sensitive areas and associated buffers, existing topography, vegetation, fish and wildlife resources, hydrological conditions, and geologic conditions. Where both sensitive areas and buffer areas are located on a parcel, buffer areas shall be disturbed in preference to the sensitive area;

5. The project includes compensatory mitigation for unavoidable sensitive area and buffer impacts in accordance with the mitigation requirements of this chapter;

6. The proposed activities will not result in adverse effects on endangered or threatened species as listed by the federal government or the state of Washington, or be inconsistent with an adopted recovery plan;

7. The proposed activities will not result in damage to nearby public or private property and are not a threat to the health or safety of people on or off the site;

8. The proposed activities will not lead to degradation of groundwater or surface water quality and will comply with all state, local and federal laws, including those related to sediment control, pollution control, floodplain restrictions, and on-site wastewater disposal.

C. All~~n~~ applications for ~~a~~ sensitive areas ~~reasonable use~~ exceptions shall follow the procedures for a Type III review pursuant to DMC Chapter 14.08, Permit Processing.

Commented [AB3]: Added this back in, and made revisions above to provide consistent review process for all EXCEPTIONS

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.080 - Appeals.

A. Any decision to require a sensitive area study pursuant to this chapter may be appealed by the applicant to the hearing examiner in accordance with DMC Section 14.08.010(C). A decision for such a study shall be considered a sensitive areas permit.

B. Any decision to approve, condition or deny a project permit application based on the requirements of the sensitive area regulations may be required in conjunction with and according to the review procedures for the permit or approval involved. Where this chapter gives specific decision-making authority to the director or the public works director, any person may appeal the provisions of the director's decision to the hearing examiner at the time the underlying land use application is being considered for review.

C. Any decision authorized by the sensitive area regulations where no review process exists for the permit or approval involved beyond the director, may be appealed by an aggrieved party to the hearing examiner pursuant to DMC Chapter 14.08

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.090 ~~--~~ Residential d~~D~~ensity calculations~~credits~~.

~~A. Sensitive areas and their buffers may be used in the calculation of allowed residential density.~~

~~B.~~ The city recognizes that f~~F~~ull density as allowed by underlying zoning and minimum residential densities established by DMC Title 14 ~~y goals~~ can~~may~~ not be attained on specific parcels where sensitive areas impose inherent limitations on development intensity. The following standards for determining residential site density shall supersede the calculation criteria within DMC 14.64.040 (Calculations—Gross usable area, residential.).

A. For all residential development sites, the maximum allowed number of dwelling units shall be computed by multiplying the land use per net usable area by the applicable residential density.

B. When calculations result in a fraction, the fraction shall be rounded to the nearest whole number as follows:

1. Fractions of .50 or above shall be rounded up; and

2. Fractions of .49 or below shall be rounded down.

Example: a site with 20,000 square feet of net usable area within the R6 zoning district (6 units/acre) shall be allowed a maximum of 3 dwelling units.

20,000 SF X (6 units / 43,560 SF) = 2.75, rounded up to 3 dwelling units.

C. The calculation of net usable area shall be made consistent with the subbasin management group within which the residential development is proposed, as provided within Table XX of this section. Subbasin management groups are established by DMC Chapter 14.XX (Watershed Management).

Table XX. Calculations of Net Usable Area for Residential Development Sites [ENTIRELY NEW TABLE for July 2017 Draft]

Subbasin Management Group	Calculation Method *Notes: Wetlands, streams, landslide hazard areas, and frequently flooded areas are the sensitive areas to be included in the area calculations. Only on-site areas are to be included.*
Group 3 (Urban Development)	Net Usable Area = Gross Site Area – (Sensitive Areas + 50% of Buffers)

Commented [AB4]: Based on comment during Meeting #4 and response comments over the last several weeks, the following is the recommended proposal from ESA and Staff.

Feedback from Advisory Group was mixed.
The Idea here is to still integrate the Watershed Plan, with a variable approach that goes both ways – and in all circumstances still includes at least 50% of site buffers.

Group 2C (Least Conservation)	Net Usable Area = Gross Site Area – (Sensitive Areas + Buffers)
Group 2B (Moderate Conservation)	Net Usable Area = Gross Site Area – (Sensitive Areas + 110% of Buffers)
Group 2A (Highest Conservation); Group 3 (Protect/Restore)	Net Usable Area = Gross Site Area – (Sensitive Areas + 125% of Buffers)

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.100 - Notice on title-plat map-site plan.

A. The owner of any property containing sensitive areas on which a development proposal is approved shall file with the records and elections division of King County a notice in a format approved by the director and provides a copy of the filed notice to the Duvall planning department. The notice shall:

1. State the general presence of the sensitive area and/or buffer area on the property, and identify that there are limitations and restrictions on uses and actions in or affecting the sensitive area and/or buffer imposed by this code and by specific conditions of approval. The notice shall indicate that the restrictions run with the land and may be altered only in conjunction with amendment of this chapter or amendment of specific conditions of approval as provided by this chapter.
2. Provide specific responsibility for management of the sensitive area including, but not limited to, maintenance or replacement of vegetation to assure the long-term viability of a community of native vegetation, and invasive plant control.
3. Provide for the right of the public, and specifically the city of Duvall, to enforce the terms of the restrictions through civil infraction or other legal address.
4. If a site plan has been approved indicating the extent of the sensitive area and buffer and permit conditions, a copy of the site plan together with relevant survey information and permit conditions shall be included in the notice filed.

B. Sensitive areas and associated buffers ~~and setback areas~~ on plats, short plats, site plans and similar land use decisions shall be in the following form:

1. Placed in a tract to provide for permanent protection and integrated management of the sensitive area and buffer. Designation of separate sensitive areas as tracts shall be the preferred method of designation and protection of sensitive areas in plats and site plans. The tract may be:
   a. Held in an undivided interest by each owner of a building lot within the development, the ownership of which shall pass with the ownership of the lot. Responsibility for meeting all requirements of preservation and management shall be designated to an incorporated homeowner's association or other legal entity that assures the ownership and protection of the sensitive area.
   b. Dedicated to the city of Duvall (all stream tracts shall be dedicated to the city of Duvall).
   c. Conveyed to a non-profit land trust, provided the land may not be thereafter transferred to a private party, and provided that if the land trust is dissolved or otherwise fails to perform its

functions, ownership and responsibility for management shall devolve to an undivided interest by each owner of a building lot within the development, as provided above.

~~2. The director may allow a sensitive area and buffer for landslide hazard areas only to be placed within a protective easement on a parcel with the responsibility for meeting all requirements of preservation and management placed on the owner of the parcel over which the easement is placed. This means of designation shall be used in cases where the size and the ecological functions of the landslide hazard area do not require coordinated management or where formation of an incorporated homeowner's association or other legal entity for management is found to be impractical because of the limited number of lots, or where ownership and management by the city, a qualified special district or a land trust is found to be impractical. This alternative generally will be limited to sensitive areas and buffers of less than twenty thousand (20,000) square feet and developments of fewer than ten (10) parcels, or commercial or multifamily development.~~

2. Placement of sensitive areas and associated buffers within a separate tract shall occur whether or not mitigation is provided as a result of the development. In all instances where mitigation is provided to compensate for sensitive areas impacts, the City shall ensure that the site protection mechanism establishes protection for perpetuity.

Commented [AB5]: Removed based on general feedback from the Group

C. This notice on title shall not be required for a development proposal by a public agency or public or private utility within a right-of-way or easement for which they do not have fee-simple title.

~~D~~E. The applicant shall submit proof that the notice~~,~~ and dedication ~~or easement~~ has been filed for public record before the city shall approve any final plat or final site plan for such site. The notice shall run with the land and failure to provide such notice to any purchaser prior to transferring any interest in the property shall be a violation of this section.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.110 - Temporary marking, permanent survey marking fencing and signs.

A. Temporary Marking. Prior to commencing construction activities on a development site, the applicant shall mark, as required by the director, sensitive areas in a highly visible manner, such as through the use of construction fencing. The marking is subject to inspection by the Director prior to the commencement of permitted activities. These areas must remain so marked until all development proposal activities on the site are completed.

B. Silt fences and other temporary erosion and sediment control measures shall be installed and maintained on the site as determined to be necessary by the director and the public works director.

C. Survey Markers. Permanent survey stakes using iron or cement markers as established by current survey standards shall be set delineating the boundary between adjoining property and the sensitive area tracts.

D. Permanent Signs. The boundary between a sensitive area tract and adjacent land shall be identified using a permanent signs ~~in a design as approved by the city~~.

1. Permanent signs shall be made of an enamel-coated metal face and attached to a metal post or another non-treated material of equal durability. Signs must be posted at an interval of one (1) every fifty (50) feet, or one (1) per lot if the lot is less than fifty (50) feet wide, and must be maintained by the property owner in perpetuity. The signs shall be worded with language approved by the Director

2. The provisions of this Subsection (1) may be modified as necessary to assure protection of sensitive features or wildlife.

3. The homeowner's association and/or the owner of the adjacent developed property adjoining the sensitive areas tract shall be responsible for maintain .

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E. Permanent Fencing. If fencing is required, it shall be designed so that it does not interfere with species migration, including fish runs, and constructed so that it minimizes impacts to wetland buffers and associated habitat. The boundary between a sensitive area and adjacent rights-of-way/property shall be delineated with a peeler pole fence as set out in Figure 14.34.30 located in DMC Section 14.34.060; except that when a buffer is reduced in accordance with this chapter, a higher fence providing more of a barricade may be required by the director. The homeowner's association and/or the owner of the adjacent developed property adjoining the sensitive areas tract shall be responsible for maintaining permanent fencing.

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(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.120 - Building setbacks.

A. Buildings and other structures shall be set back a distance of ten (10) feet from the edges of all sensitive area buffers.

B. The director may modify the building setback required for sensitive area buffers based on specific development plans that do not disturb sensitive areas.

C. The following uses are allowed in the building setbacks required for sensitive area buffers:

1. Native landscaping, including retaining walls less than thirty (30) inches high provided construction of the retaining wall does not alter the buffer or sensitive area;
2. Uncovered decks;
3. Building overhangs not exceeding two feet;
4. Impervious surfaces such as driveways, parking lots, roads, and patios provided that such surfaces conform to the applicable water quality standards and that construction equipment does not enter the buffer or sensitive area;
5. Clearing and grading not exceeding thirty (30) inches of cut or fill (predevelopment elevation) to facilitate the construction of subsections (C)(1) through (C)(4) of this section.

D. Unless specified otherwise in the sensitive areas regulations, no building shall be setback less than ten (10) feet from the edge of the sensitive area.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.130 - Mitigation.

A. Mitigation measures shall be implemented to protect sensitive areas and buffers from alterations occurring on all or portions of a site being developed. The mitigation measures required in subsections B through E of this section shall be implemented in conjunction with other applicable mitigation requirements outlined in the subsequent sections of this chapter.

B. For purposes of this chapter, mitigation means the use of the following actions that are listed in descending order of preference:

1. Avoiding the impact all together by not taking a certain action or parts of an action;
2. Minimizing impact by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impact;
3. Rectifying the impact by repairing, rehabilitating or restoring the sensitive areas;
4. Reducing or eliminating the impact over time by prevention and maintenance operations;
5. Compensating for the impact by replacing, enhancing or providing substitute areas and environments and replace the ecological processes and functions of the resource;

6. Monitoring the impact and taking appropriate corrective measures.

C. Mitigation Plan. A mitigation plan shall be required for the design, implementation, maintenance and monitoring of mitigation. A plan shall provide the following, in addition to criteria for the specific sensitive areas provided below:

1. A description and evaluation of any sensitive areas that could be altered by the proposed development, including evaluation of ecological processes and functions based on best available science and detailed field assessment of the affected resources.
2. A description and scaled drawings of the proposed mitigation activities including, but not limited to, clearing, grading/excavation, drainage alterations, planting, invasive plant management, installation of habitat structures, irrigation, and other site treatments.
3. A description of the ecological functions and values that the proposed alteration may affect and of the specific ecological functions and values the proposed mitigation area(s) shall provide.
4. A description of required or recommended mitigation ratios and an assessment of factors that may affect the success of the mitigation program.
5. Specific measurable performance standards that the proposed mitigation action(s) shall achieve together with a description of how the mitigation action(s) will be evaluated and monitored to determine if the performance standards are being met.
6. A description of potential courses of action, and any corrective measures to be taken if monitoring or evaluation indicates that project performance standards are not being met.
7. Cost estimates for the installation of the mitigation program, monitoring, and maintenance if project performance standards are not being met.

D. A performance assurance shall be provided to guarantee installation, performance, maintenance and monitoring ~~and performance~~ of mitigation actions.

Commented [AB6]: Revisions provided to be consistent with City's current standard practice

1. Sensitive areas mitigation shall be completed and verified by the city prior to final building inspection. In the event that weather or seasonal conditions do not allow for completion of the mitigation, and at the planning director's discretion, the applicant shall be required to bond for such improvements in an amount equal to one hundred fifty (150) percent of estimated cost of the uncompleted actions or the estimated cost of restoring the functions and values of the sensitive area, whichever is greater.~~The applicant shall post a mitigation surety in the amount of one hundred twenty-five (125) percent of the estimated cost of the uncompleted actions or the estimated cost of restoring the functions and values of the sensitive area that are at risk, whichever is greater.~~ The surety shall be based on an itemized cost estimate of the mitigation activity including clearing and grading, plant materials, plant installation, irrigation, weed management, monitoring, adaptive management, and other costs.
2. Performance Bond. The City shall require the applicant to bond for required sensitive areas mitigation in an amount equal to one hundred fifty (150) percent of estimated cost of labor and materials. The performance bond shall be held by the City for one full year after completion to ensure the mitigation performs as designed. Upon acceptance of mitigation performance after one full year, a maintenance and monitoring bond shall be required prior to the performance bond being released.
3. Maintenance and Monitoring Bond. A bond in an amount equal to one hundred (100) percent of the cost of the mitigation (labor and materials) and one hundred (100) percent of the cost of monitoring and maintenance throughout the remaining monitoring and maintenance period shall be required to be submitted and accepted by the City prior to release of the mitigation performance bond.

~~2~~4. ~~The surety~~All sureties shall be in the form of an assignment of funds or other means approved by the director.

~~3~~5. Surety authorized by this section shall remain in effect until the director determines, in writing, that the performance standards of the mitigation action(s) have been met. Surety shall generally be held for a period of five years to ensure that the required mitigation has been fully implemented and demonstrated to function, and may be held for longer periods when necessary. ~~A surety for construction may be reduced after initial completion in an amount not to exceed the cost of monitoring plus not less than twenty-five (25) percent of the construction cost plus one hundred (100) percent of the cost of irrigation, maintenance, and adaptive management.~~

~~4. The director may return up to fifty (50) percent of the surety following the first year of monitoring provided that the year one performance standards are met and the risk of subsequent failure is considered low.~~

~~5~~6. Depletion, failure, or collection of surety funds shall not discharge the obligation of an applicant or violator to complete required mitigation, maintenance, or monitoring.

~~6~~7. Public development proposals shall be relieved from having to comply with the bonding requirements of this section if public funds have previously been committed for mitigation, maintenance, or monitoring.

E. Mitigation Banking. The director may approve mitigation banking as a form of compensatory mitigation for wetland and fish and wildlife habitat conservation area impacts when the provisions of this chapter require mitigation and when it is clearly demonstrated that the use of a mitigation bank will provide equivalent or greater replacement of sensitive area functions and values when compared to conventional on-site mitigation, provided that all of the following criteria are met:

1. Banks shall only be used when they provide significant ecological benefits including long-term conservation of sensitive areas, important species, habitats and/or habitat linkages, and when they are consistent with the city's comprehensive plan and create a viable alternative to the piecemeal mitigation for individual project impacts to achieve ecosystem-based conservation goals.

2. The bank shall be established in accordance with the Washington State Draft Mitigation Banking Rule WAC 173-700 or as revised, and RCW 90.84 and the federal mitigation banking guidelines as outlined in the Federal Register Volume 60, No. 228, November 28, 1995. These guidelines establish the procedural and technical criteria that banks must meet to obtain state and federal certification.

3. Preference shall be given to mitigation banks that implement restoration actions that have been identified formally by an adopted shoreline restoration plan, watershed planning document prepared and adopted pursuant to RCW 90.82, a salmonid recovery plan or project that has been identified on the Salmon recovery board habitat project list or by the Washington Department of Fish and Wildlife as essential for fish and wildlife habitat enhancement.

~~4. Banks shall only be used after the director has determined that there are no viable options for replacement of on- or off-site mitigation in Duvall.~~

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.140 - Enforcement.

A. When a critical area or its buffer has been altered in violation of this Title, all ongoing development work shall stop and the critical area shall be restored. The City shall have the authority to issue a stop work order to cease all ongoing development work, and order restoration, rehabilitation, or replacement measures at the owner's or other responsible party's expense to compensate for violation of provisions of this Title.

B. Requirement for Restoration Plan. All development work shall remain stopped until a restoration plan is prepared and approved by City. Such a plan shall be prepared by a qualified professional using the best available science and shall describe how the actions proposed meet the minimum requirements

described in Subsection (C). The [director] shall, at the violator's expense, seek expert advice in determining the adequacy of the plan. Inadequate plans shall be returned to the applicant or violator for revision and resubmittal.

C. Minimum Performance Standards for Restoration

1. For alterations to critical aquifer recharge areas, frequently flooded areas, wetlands, and habitat conservation areas, the following minimum performance standards shall be met for the restoration of a critical area, provided that if the violator can demonstrate that greater functional and habitat values can be obtained, these standards may be modified:

   a. The historic structural and functional values shall be restored, including water quality and habitat functions;
   b. The historic soil types and configuration shall be replicated;
   c. The critical area and buffers shall be replanted with native vegetation that replicates the vegetation historically found on the site in species types, sizes, and densities. The historic functions and values should be replicated at the location of the alteration; and
   d. Information demonstrating compliance with the requirements in Section X (Mitigation Plan Requirements) shall be submitted to the [director].

2. For alterations to flood and geological hazards, the following minimum performance standards shall be met for the restoration of a critical area, provided that, if the violator can demonstrate that greater safety can be obtained, these standards may be modified:

   a. The hazard shall be reduced to a level equal to, or less than, the pre-development hazard;
   b. Any risk of personal injury resulting from the alteration shall be eliminated or minimized; and
   c. The hazard area and buffers shall be replanted with native vegetation sufficient to minimize the hazard.

D. ~~A.~~Site Investigations. The director or its designee shall have a right to enter upon any property at reasonable times and to make such inspections as are necessary to determine compliance with the provisions of this chapter or the conditions imposed pursuant to this chapter. The director shall follow the following steps prior to entering upon private property:

1. Phone the property owner/developer if number known;
2. Knock on the door of the property owner;
3. If the violation is not an imminent threat to the environment or if it is not occurring at the time, use enforcement process set out in DMC Chapter 2.24
4. If violation is an imminent threat to the environment or if it is in process, or there is a complaint that a violation is in process, city staff has the right to enter the property to document the actions in accordance with DMC Chapter 2.24.B. The director is further authorized to take such actions as may be necessary to enforce the provisions of this chapter including but not limited to the civil infraction, abatement and criminal penalties provided in this section.

E. Penalties. Any person, party, firm, corporation, or other legal entity convicted of violating any of the provisions of this Title shall be guilty of a misdemeanor. Each day or portion of a day during which a violation of this Title is committed or continued shall constitute a separate offense. Any development carried out contrary to the provisions of this Title shall constitute a public nuisance and may be enjoined as provided by the statutes of the state of Washington. The City may levy civil penalties against any person, party, firm, corporation, or other legal entity for violation of any of the provisions of this Title. The civil penalty shall be assessed at a maximum rate of _____ dollars per day per violation. (STATE GUIDANCE: The amount of the penalty needs to be decided locally and should be consistent with other adopted civil penalties. Commonly, the penalty is $1,000 per day per violation)

~~C~~F. The city's enactment or enforcement of this chapter shall not be construed for the benefit of any individual person or group of persons other than the general public.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.150 - Administrative rules.

The director shall have the authority to adopt administrative rules as deemed necessary consistent with the provisions of this chapter and that are necessary for the implementation of sensitive area regulations. Such administrative rules shall be reviewed by the mayor.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.200 - Wetlands—Designation, rating and mapping.

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

B. Wetlands shall be designated in accordance with the approved federal wetland delineation manual and applicable regional supplements as set forth in WAC 173-22-035. Wetland delineations are valid for five years; after such date the City shall determine whether a revision or additional assessment is necessary.~~ identified in accordance with the requirements of RCW 36.70A.175. Unless otherwise provided for in this chapter, all areas within the city meeting the criteria in the Washington State Wetlands Identification and Delineation Manual, (Ecology Publication 96-94) or the US Army Corps of Engineers Wetlands Delineation Manual, 1987 Edition and corresponding guidance letters; regardless of any formal identification, are designated sensitive areas and are subject to the provisions of this chapter.~~

C. The approximate location and extent of known or suspected wetlands are shown on the city's sensitive area maps. Other, unmapped wetlands may exist within the city. These maps are to be used as a guide and do not provide a definitive sensitive area designation.

D. Wetlands shall be rated according to the Washington State Department of Ecology wetland rating system found in the 2014 Washington State Wetland Rating System for Western Washington (Ecology Publication No. 14-06-029, or as revised and approved by Ecology). Wetlands shall be rated based on categories that reflect the functions and values of each wetland, with categories based on the criteria provided in the 2014 Washington State Wetland Rating System for Western Washington, as follows:

~~based on categories that reflect the functions and values of each wetland. Wetland categories shall be based on the criteria provided in the Washington State Wetland Rating System for Western Washington, revised April 2004 (Ecology Publication #04-06-025). These categories are generally defined as follows~~:

1. Category I Wetlands. Category I wetlands are those wetlands of exceptional value in terms of protecting water quality, storing flood and stormwater, and/or providing habitat for wildlife as

indicated by a rating system score of twenty three (23) ~~seventy (70)~~ points or more. These are wetland communities of infrequent occurrence that often provide documented habitat for sensitive, threatened or endangered species, and/or have other attributes that are very difficult or impossible to replace if altered.

2. Category II Wetlands. Category II wetlands have significant value based on their function as indicated by a rating system score of twenty (20) to twenty-two (22)~~between fifty-one (51) and sixty-nine (69)~~ points. They do not meet the criteria for Category I rating but occur infrequently and have qualities that are difficult to replace if altered.

3. Category III Wetlands. Category III wetlands have important resource value as indicated by a rating system score of between sixteen (16) and nineteen (19)~~thirty (30) and fifty (50)~~ points.

4. Category IV Wetlands. Category IV wetlands are wetlands of limited resource value as indicated by a rating system score of less than sixteen (16)~~thirty (30)~~ points. They typically have vegetation of similar age and class, lack special habitat features, and/or are isolated or disconnected from other aquatic systems or high quality upland habitats.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.210 - Wetland buffer standards.

A. Wetland Buffer Widths. The director shall have the authority to require buffers from the edges of all wetlands in accordance with the following:

1. Wetland buffers shall be established to protect the integrity, functions and values of the wetland. Wetland buffers shall be measured perpendicular to the wetland edge on all sides as marked in the field. Buffers shall not include areas that are functionally and effectively disconnected from the wetland by a road or other substantially developed surface of sufficient width and with use characteristics such that buffer functions are not provided. The Western Washington GMHB excluded roads as functionally isolating buffers as a general case, without findings that they truly interrupt buffer functions, in ICCGMC v. Island County 98-2-0023 (Final Decision and Order, 6-2-99)E.~~1~~

2. The buffer standards required by this chapter presume the existence of a dense vegetation community in the buffer adequate to protect the wetland functions and values. When a buffer is unvegetated, sparsely vegetated, or vegetated predominantly with invasive species that do not perform needed functions~~lacks adequate vegetation~~, the director may require buffer planting or enhancement, and/or deny a proposal for buffer reduction or buffer averaging.

3. Wetland buffers identified in Table 1 are based on the category of wetland and the habitat score as determined by a qualified wetland professional using the 2014 Washington State Wetland Rating System for Western Washington (Ecology Publication No. 14-06-029). Wetland buffers have been established in accordance with the best available science. ~~Most wetlands in Duvall are expected to have moderate to low habitat function and buffers shall be sufficient to protect habitat functions. The standard buffer width for Category I, II and III wetlands determined to have low to moderate habitat function scores shall be determined on a graduated scale based the table below. The applicant shall determine the habitat functions score using the 2004 Department of Ecology Washington State Wetland Rating System for Western Washington habitat functions worksheet (Ecology Publication #04-06-025)~~:

~~Duvall Standard Wetland Buffer Widths Using a Graduated Scale Based on the Habitat Functions Score~~										
	~~19~~	~~20~~	~~21~~	~~22~~	~~23~~	~~24~~	~~25~~	~~26~~	~~27~~	~~28~~

Commented [AB7]: Addition from Ecology guidance

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~~Points for Habitat Function from Wetland Rating Form~~	~~Low Habitat Score~~	~~Moderate Habitat Score~~								
~~Category I, II and III wetlands~~	~~60'~~	~~80'~~	~~80'~~	~~100'~~	~~100'~~	~~120'~~	~~120'~~	~~140'~~	~~140'~~	~~150'~~

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Table 1. Standard Wetland Buffer Widths [ENTIRE TABLE IS NEW]

Wetland Category	Minimum Buffer Width (Wetland scores 3-4 habitat points)	Buffer Width (Wetland scores 5 habitat points)	Buffer Width (Wetland scores 6-7 habitat points)	Buffer Width (Wetland scores 8-9 habitat points)
Category I: Bogs and Wetlands of High Conservation Value	190 ft	190 ft	190 ft	225 ft
Category I: Forested	75ft	105 ft	165 ft	225 ft
Category I and II: Based on total score	75 ft	105 ft	165 ft	225 ft
Category III (all)	60 ft	105 ft	165 ft	225 ft
Category IV (all)	~~40~~50 ft	~~40~~50 ft	~~40~~50 ft	~~40~~50 ft

Commented [AB8]: Updated to maintain consistency with existing standard buffer width for Category IV wetlands in Duvall

4. The use of the standard buffer widths requires the implementation of the measures in Table 2, where applicable to a specific proposal, to minimize the impacts of the adjacent land uses. If an applicant chooses not to apply the mitigation measures in Table 2, then a thirty-three (33%) increase in the width of all buffers listed in Table 1 is required.

Table 2. Required Measures to Minimize Impacts to Wetlands [ENTIRE TABLE IS NEW]

Disturbance	Required Measures to Minimize Impacts
Lights	• Direct lights away from wetland
Noise	• Locate activity that generates noise away from wetland • If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source • immediately adjacent to the out wetland buffer

Disturbance	Required Measures to Minimize Impacts
Toxic runoff	• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 feet of wetlands • Apply integrated pest management
Stormwater runoff	• Retrofit stormwater detention and treatment for roads and existing adjacent development • Prevent channelized flow from lawns that directly enters the buffer • Use Low Impact Development techniques (per PSAT publication on LID techniques)
Change in water regime	• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns
Pets and human disturbance	• Use privacy fencing OR plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion • Place wetland and its buffer in a separate tract or protect with a conservation easement
Dust	• Use best management practices to control dust
Disruption of corridors or connections	• Maintain connections to offsite areas that are undisturbed • Restore corridors or connections to offsite habitats by replanting

~~6~~5. Wetlands within twenty-five (25) feet of slopes at an inclination of forty (40) percent or more with a vertical elevation change of at least ten (10) feet, shall have the following minimum buffers:

a. The greater of the minimum for that wetland class, landslide hazard area, or twenty-five (25) feet beyond the top, toe and along the side of the slope.

b. The development review committee (DRC) may recommend buffer averaging instances where it will provide additional resource protection provided that the total area on-site contained in buffers remains the same.

B. Wetland Buffer Reduction. Outright reduction of wetland buffer widths shall not be allowed within shoreline jurisdiction. Outside of shoreline jurisdiction, t~~T~~he director shall have the authority to reduce the standard buffer widths ~~within Management Groups 2B, 2C, and 3 subbasins only, excluding the buffer of depressional wetlands,~~according to the standards in Table 3 when the applicant demonstrates through a sensitive area study to the satisfaction of the director that all the following criteria are met:

Commented [CZH9]: From the SMP

1. The buffer reduction shall not adversely affect the functions and values of the adjacent wetlands, meaning that:

a. The ability of the wetland to support wetland-adapted and/or wetland-dependent wildlife will not be impaired;

b. The ability of the wetland to perform water quality functions such as storage/treatment/removal of pollutants will not be impaired; and

c. The ability of the wetland to store runoff and provide flood protection will not be impaired.

In all instances where an existing buffer is comprised of predominantly native and woody vegetation, the director shall assume that buffer reduction is not feasible without adversely affecting the functions and values of the adjacent wetland, and shall deny requests for buffer reduction.;

2. The buffer of a Category I or II wetland can be reduced by twenty-five (25) percent of the standard buffer if criteria in subsection B of this section are met.Buffer reduction shall only be allowed when opportunity for wetland buffer averaging as provided in subsection C of section is determined unfeasible due to site constraints.

3. The buffer of a Category III or IV wetland shall not be reduced to less than fifty (50) percent of the standard bufferIn the limited instances where buffer reduction is approved, the director shall require enhancement throughout all remaining buffer and wetland areas on the development site consistent with all applicable mitigation requirements of this Chapter. In all instances, required enhancement shall meet a minimum enhancement area to reduced area ratio of three to one (3:1), even if achieving this enhancement ratio results in off-site enhancement within a location approved by the City.

4. The applicant implements all reasonable measures to reduce the adverse effects of adjacent land uses and ensure no net loss of wetland functions and values in conjunction with a sensitive area study and mitigation plan. The specific measures that shall be implemented include:

a. During site construction:

i. Install and maintain adequate erosion and sediment control devices to prevent water quality impacts;

ii. Mitigate the noise impacts associated with equipment use during sensitive nesting or breeding times as needed to minimize impacts on wildlife in the immediate vicinity of the site;

iii. Install orange construction fencing around all sensitive areas that are not proposed to be disturbed to prevent inadvertent damage; and

iv. Providing temporary stormwater detention and treatment.

b. The development shall be designed and operated so that the following measures are met:

i. Lights shall be directed away from the wetland and buffer;

ii. Facilities that generate substantial noise (such as some manufacturing, industrial, recreational facilities, loading docks, garbage pickup areas) shall be located away from the wetland and buffer;

iii. Vegetation maintenance plans and integrated pest management plans shall be established that include covenants or other enforcement mechanisms that limit use of fertilizers and pesticides within the wetland buffer width;

iv. Runoff into the buffer shall be infiltrated or treated, detained and dispersed into the buffer;

v. Fencing around the buffer shall be constructed to delineate the buffer edge and signs shall be posted at the outer edge of the sensitive area or buffer to clearly indicate the location of the sensitive area;

vi. The buffer shall be planted with native vegetation appropriate for the region; and

vii. Low impact development techniques shall be used where appropriate.

C. Standards—Wetland Buffer Averaging. The director has the authority to average wetland buffer widths within Management Groups 2B, 2C, and 3 subbasins only, excluding the buffer of depressional wetlands,according to the standards in Table 3 on a case-by-case basis when the applicant demonstrates through a sensitive area study to the satisfaction of the director that all the following criteria are met:

Commented [AB10]: Additions provided to implement direction from Group discussion, while still providing a limited allowance for reduction of buffers around some lower

Commented [CZH11]: Moved to table format above (and augmented based on Ecology guidance)– see new Table 2

1. The buffer averaging does not reduce the functions or values of the wetland as described in subsection (B)(1) of this section.
2. The total area contained in the buffer area after averaging is no less than that which would be contained within the standard buffer, and all increases in buffer dimension for averaging must be generally parallel to the wetland boundary;
3. The wetland contains variations in sensitivity due to existing physical characteristics or the character of the buffer varies in slope, soils, or vegetation;
4. ~~The buffer of a Category I or II wetland may be reduced by up to twenty-five (25) percent of the required buffer if the criteria in subsection C of this section are met;~~
5. ~~The buffer of a Category III or IV wetland may be reduced by up to fifty (50) percent of the required buffer;~~
6. ~~6~~4. The applicant implements all reasonable measures to reduce the adverse effects of adjacent land uses and ensure no net loss of wetland functions and values in conjunction with a sensitive area study and mitigation plan. The specific measures that shall be implemented include, but are not limited to, those in subsection (B)(4) of this section.

D.~~E.~~ Impacts to significant trees that result from an allowed wetland buffer reduction or averaging shall require tree replacement at a higher ratio (greater than 3:1, as determined by the director) than significant trees impacted outside of the buffer. Applicants are required to follow tree protection standards discussed in DMC Section 14.40, Tree Protection.

E. Standards—Wetland Buffer Increases. The director shall have the authority to increase the width of the standard buffer width on a case-by-case basis, based on a sensitive area study, when a larger buffer is required to protect sensitive habitats as outlined in DMC Section 14.42.350, ~~O~~other fish and wildlife habitat conservations areas, or such increase is necessary to:

1. Prevent windthrow damage; or
2. Maintain viable populations of species such as herons and other priority or fish and wildlife; or
3. Protect wetlands or other sensitive areas from landslides, erosion or other hazards; or
4. Protect wetlands from adjacent development where standard buffers are unvegetated, sparsely vegetated, or vegetated predominantly with invasive species.

~~The Western WA GMHB excluded roads as functionally isolating buffers as a general case, without findings that they truly interrupt buffer functions, in. ICCGMC v. Island County 98-2-0023 (Final Decision and Order, 6-2-99)E.~~

Commented [AB12]: Moved up to section where applicable

(Ord. 1056 § 1 Exh. A (part), 2007)

Table 3. Subbasin Management Group - Buffer Reduction and Averaging Standards [ENTIRE TABLE IS NEW – July 2017 revisions shown in TrackChanges]

	Subbasin Management Group				
	1-Protect /Restore	2A – Highest Conservation	2B-Moderate Conservation	2C-Least Conservation	3 – Urban Development
Wetland buffer reduction (DMC 14.42.210.B) – maximum reduction allowed for Category I and II wetlands.	No reduction ~~No reduction~~ ~~10%~~				

			~~15%~~ ~~25%~~		
Wetland buffer reduction (DMC 14.42.210.B) – maximum reduction allowed for Category III and IV wetlands.	No reduction	~~10%~~No reduction	15%	20%	25%
Wetland buffer averaging (DMC 14.42.210.C) – maximum reduction allowed for Category I and II wetlands.	No averaging	No averaging	10%	15%	25%
Wetland buffer averaging (DMC 14.42.210.C) – maximum reduction allowed for Category III and IV wetlands.	No averaging	10%	15%	20%	25%

Commented [AB13]:
Proposal –
+Reduction eliminated for Cat I and II wetlands
+Reduction further limited for Cat III and IV wetlands
+Additional provisions in 14.42.210.B further limit where reduction could occur

(existing Code allows reduction up to 50% for these wetlands across the City)

14.42.220 - Wetland alterations.

Wetlands and associated buffer areas generally shall be preserved in a state that provides for a native vegetation community providing a range of ecological processes and functions. Wetlands and their buffers generally may not be altered except for the specific allowed uses enumerated below or for restoration or enhancement of impaired functions. Whenever wetland and/or wetland buffer alteration is proposed, the applicant shall prepare a mitigation plan and shall follow the mitigation sequencing requirements of DMC 14.42.130(B). Compensatory mitigation shall be provided for all adverse impacts to wetlands that cannot be avoided, and the amount and degree of alteration shall be limited to the minimum needed to accomplish the project purpose. Altered wetlands and buffers shall be restored to a natural state wherever feasible. Alterations shall adhere to applicable city, state, and federal requirements and permitting including, but not limited to, US Army Corps of Engineers and the Department of Ecology. The following activities may be permitted in wetlands and/or wetland buffers when all ~~reasonable measures have been taken to avoid adverse effects on wetland functions and values~~ and the requirements of this section have been fulfilled:

A. Developments that meet the reasonable use standards as set forth in DMC Section 14.42.070

B. Surface water discharge into Category II, III, and IV wetlands and their buffers following the provisions in Table 4 and when the discharge is designed to minimize physical, hydrologic and ecological impacts to the wetland. Discharge of clean roof runoff is allowed provided that the roof does not contain zinc strips.

C. Utility lines in Category II, III, and IV wetlands and their buffers and/or Category I wetland buffers following the provisions in Table 4 when no feasible conveyance alternative is available. Utility lines ~~and~~ shall be designed and constructed to minimize physical, hydrologic and ecological impacts to the wetland, and meets all of the following:

1. The utility line is located as far from the wetland edge as possible and in a manner that minimizes disturbance of soils and vegetation.

2. Clearing, grading, and excavation activities are limited to the minimum necessary to install the utility line and the area is restored following utility installation.

3. Buried utility lines shall be constructed in a manner that prevents adverse impacts to subsurface drainage. This may include the use of trench plugs or other devices as needed to maintain hydrology.

D. Public roads, bridges, and trails in Category II, III, and IV wetlands and their buffers and/or Category I wetland buffers when no feasible alternative alignment is available following the provisions in Table 4. when no feasible alternative alignment is available aRnd the roads, bridges or trails is are designed and constructed to minimize physical, hydrologic and ecological impacts to the wetland, including placement on elevated structures as an alternative to fill, where feasible. Roadway and bridge crossings impacting wetlands and associated buffers shall be narrowed to minimize ecological impacts, including through eliminated and/or reduced landscape strips and on-street parking requirements.

E. Access to private development sites may be permitted to cross Category II, II, or IV wetlands or their buffers following the provisions in Table 4 and provided there are no feasible alternative alignments. Alternative access shall be pursued to the maximum extent feasible, including through the provisions of RCW 8.24. Exceptions or deviations from technical standards for width or other dimensions, and specific construction standards to minimize impacts may be specified, including placement on elevated structures as an alternative to fill, if feasible.

F. Stormwater management facilities limited to detention/treatment ponds, media filtration facilities, and infiltration basinsopen and vegetated detention and/or treatment facilities, within the outer portion of somefifty (50) percent of the standard Category II, III or IV wetland buffers, provided that all the following criteria are met:

1. The wetland is classified as a Category IV or Category III with a habitat score of 3-4 points and;

2. The proposed facility is located in the outer portion of the buffer consistent with Table 4 (Subbasin Management Group Alteration Standards); and

3. Construction of the stormwater facility does not displace or impact a forested buffer community; and

4. There is no other feasible location for the stormwater facility and the facility is located, constructed, mitigated, and maintained in a manner that minimizes adverse effects on the buffer and adjacent sensitive areas wetland; and

5. The wetland does not contain a breeding population of any native amphibian species; and

6. The wetland lies in the natural routing of runoff directed to the stormwater management facility, discharge follows the natural routing, and discharge volumes are demonstrated to not result in adverse impacts to wetland hydrologic functions; and

7. All regulations regarding stormwater and wetland management are followed, including provisions of the King County Surface Water Design Manual as adopted by DMC 9.06.030;

3The stormwater facility is designed in accordance with city stormwater requirements and generally resembles natural wetlands. The facility shall not contain access roadways or retaining walls or slopes in excess of a 3:1 within the buffer, and the discharge must meet water quality standards;

48. Low impact development approaches have been considered and implemented to the maximum extent feasible.

G. Stormwater conveyance or discharge facilities such as dispersion trenches, level spreaders, and outfalls may be permitted within a Category II, III, or IV wetland buffers following the provisions in Table 4 (Subbasin Management Group Alteration Standards) when and provided that all the following are met:

1. Due to topographic or other physical constraints there are no feasible locations for these facilities in the outer buffer area or outside the buffer.
2. The discharge is located as far from the wetland edge as possible and in a manner that minimizes disturbance of soils and vegetation.
3. The discharge outlet is located in an appropriate location and is designed to prevent erosion and promote infiltration.

H. Passive recreation facilities that are part of a nonmotorized trail system or environmental education program including elevated walkways (boardwalks), wildlife viewing structures, and trails, in wetland buffers following the provisions in Table 4 (Subbasin Management Group Alteration Standards) and provided that all of the following criteria are met:

1. Trails shall not exceed four feet in width and shall be made of pervious material where feasible.
2. Elevated walkways shall not exceed four feet in width and wildlife viewing structures shall not exceed 100 square feet within the buffer~~The trail or facility is located in the outer fifty (50) percent of the standard buffer area where feasible~~.

~~3~~2. T~~he t~~rails and other passive recreation facilities shall be ~~is~~ constructed and maintained in manner that minimizes disturbance of the buffer and associated sensitive areas.

I. Category IV Wetlands Less Than 1,000 Square Feet. The director will allow alteration or displacement of isolated Category IV wetlands less than two thousand (~~2~~1,000) square feet following the provisions in Table 4 and when all of the following criteria are met as documented in a wetland sensitive area study and mitigation plan:

1. The wetland does not provide significant suitable breeding habitat for native amphibian species. Suitable breeding habitat may be indicated by adequate and stable seasonal inundation, presence of thin-stemmed emergent vegetation, and clean water;
2. The wetland is not located within a fish and wildlife habitat conservation area as defined in Section 14.42.350 of this chapter;
3. The wetland is not located within a floodplain and/or not associated with a shoreline of the state as defined by the city's shoreline master program (DMC Chapter 14.22);
4. The wetland does not provide significant wildlife water quality, or water storage functions that would be difficult to replicate;
5. The wetland is not part of a wetland mosaic;
6. The wetland does not score 5 or more points for habitat function based on the Washington State Wetland Rating System for Western Washington: 2014 Update (Ecology Publication #14-06-029, or as revised and approved by Ecology);
7. The wetland does not contain a Priority Habitat or a Priority Area for a Priority Species identified by the Washington Department of Fish and Wildlife, does not contain federally listed species or their critical habitat; and

8~~5~~. Alterations or displacement shall adhere to applicable city, state, and federal requirements and permitting including, but not limited to, US Army Corps of Engineers and the Department of Ecology.

Commented [AB14]: Reduction from 2,000 to 1,000 provided to achieve consistency with Ecology wetland BAS guidance

J. Category IV Wetlands Less Than 4,000 Square Feet. Activities and uses that result in unavoidable impacts may be permitted in Category IV wetlands less than 4,000 square feet in size and associated buffers following the provisions in Table 4 and in accordance with an approved sensitive area ~~report~~study and mitigation plan. ~~, and only after A~~all impact avoidance and minimization measures ~~have been~~have to be evaluated consistent with DMC Section 14.42.130(C) and the applicant demonstrates that the proposed activity is the only reasonable alternative that will accomplish the applicant's objectives consistent with the sensitive area

Commented [AB15]: Change – establishing 4,000 SF max size) recommended to provide consistency with Ecology wetland BAS guidance

regulations and meet the criteria in subsections (I)(1) through (I)(84) of this section. Full compensation for the acreage and loss of functions for the wetland and the buffers shall be provided under the requirements established in DMC Section 14.42.240. Alterations shall adhere to applicable city, state, and federal requirements and permitting including, but not limited to, US Army Corps of Engineers and the Department of Ecology.

~~K. Category III Wetlands. For Category III wetlands, the provisions in Table 4 and, the following standards shall apply:~~

~~1. Where wetland fill is proposed, it is presumed that an alternative development location exists; activities and uses shall be prohibited unless the applicant can demonstrate that:~~

~~a. The basic project purpose cannot reasonably be accomplished on another site or sites in the general region while still successfully avoiding or resulting in less adverse impact on a wetland; and~~

~~b. All on-site alternative designs that would avoid or result in less adverse impact on a wetland or its buffer, such as a reduction in the size, scope, configuration or density of the project, are not feasible.~~

~~2. Full compensation for the loss of acreage and functions of wetland and buffers shall be provided under the terms established under mitigation ratios set out in DMC Section 14.42.240~~

~~3. Wetland filling activities shall adhere to applicable city, state, and federal requirements and permitting including, but not limited to, US Army Corps of Engineers and the Department of Ecology.~~

Commented [AB16]: Recommendation – remove this allowance for any alteration to Category III wetlands

(Ord. 1056 § 1 Exh. A (part), 2007)

Table 4. Subbasin Management Group Alteration Standards [following table is all new – changes in July 2017 version shown in Track]

Wetland alteration allowances per DMC 14.42.220	Subbasin Management Group				
	1 – Protect/ Restore	2A – Highest Conservation	2B – Moderate Conservation	2C – Least Conservation	3 – Urban Development
Surface water discharge into Category II, III, and IV wetlands and their buffers(DMC 14.42.220.B) – where allowance applies.	Not applicable	Applicable only with 50%additional mitigation per DMC 14.42.240	Applicable only with 25%additional mitigation per DMC 14.42.240	Applicable	Applicable
Utility lines in Category II, III, IV wetlands and their buffers (DMC 14.42.220.C) – where allowance applies.	Not applicable	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable only with 10%additional mitigation per DMC 14.42.240	Applicable
Public roads, bridges, and trails in Category II, III, and IV wetlands and their buffers (DMC 14.42.220.D) – where allowance applies.	Not applicable	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable only with 10% additional mitigation per DMC 14.42.240	Applicable
Utility lines, public roads, bridges, and trails in	Not applicable	Not applicable	Applicable only with	Applicable only with	Applicable

Category I wetlands where allowed (DMC 14.42.220.C and D) – where allowance applies			25%additional mitigation per DMC 14.42.240	10%additional mitigation per DMC 14.42.240	
Private development access in Category II, III, or IV wetlands or their buffers (DMC 14.42.220.E) – where allowance applies	Not applicable	Applicable only with 50% additional mitigation per DMC 14.42.240	Applicable only with 25%additional mitigation per DMC 14.42.240	Applicable	Applicable
Stormwater management facilities, conveyance, or discharge facilities (DMC 14.42.220.F, G) – outer portion (percent) of the standard Category II, III or IV wetland buffer where facilities are allowed.	Not allowed within buffer	10%	20%	30%	40%
Passive recreation facilities, or trails (DMC 14.42.220.H) – outer portion (percent) of the standard Category I, II, III, or IV wetland buffer where allowed.	~~Not allowed within buffer~~Consistent with the SMP	10%	20%	30%	40%
Category IV Wetlands less than 1,~~2~~000 square feet (DMC 14.42.220.I) – where allowance applies.	Not applicable	Not applicable	Applicable only with 25%additional mitigation per DMC 14.42.240	Applicable	Applicable
Category IV Wetlands less than 4,000 square feet (DMC 14.42.220.J) – where allowance applies.	Not applicable	Not applicable	Applicable only with 50%additional mitigation per DMC 14.42.240	Applicable only with 25%additional mitigation per DMC 14.42.240	Applicable
~~Category III Wetlands (DMC 14.42.220.K) – where allowance applies.~~	~~Not applicable~~	~~Not applicable~~	~~Not applicable~~	~~Applicable only with 25%additional mitigation per DMC 14.42.240~~	~~Applicable only with 10%additional mitigation per DMC 14.42.240~~

14.42.230 - Wetland review and reporting requirements.

A. The director shall require a site evaluation (field investigation) by a qualified professional to determine whether or not a regulated wetland is present and if so, its relative location in relation to the proposed project area on site. If the director determines that a wetland is likely to be present, the director shall require a sensitive area study pursuant to DMC Section 14.42.060. If no regulated wetlands are present, then the wetland review will be considered complete.

B. A sensitive area study (wetland assessment study) describes the characteristics of the subject property and adjacent areas. The assessment shall be completed pursuant to DMC Section 14.42.060 and include the following:

1. Existing physical features of the site including buildings, fences, and other structures, roads, parking lots, utilities, water bodies, etc.;
2. Determination of the wetland category and standard wetland buffers as set forth in pursuant to DMC Section 14.42.200;
3. Field Identification and Delineation of Wetland Boundaries. For on-site wetlands, the assessment shall include the dominant and subdominant plant species; soil type, color and texture; sources of hydrology (patterns of surface and subsurface water movement, precipitation, etc.), topography, and other pertinent information;
4. Identification of sensitive areas and buffers within three hundred (300) feet of the site and an estimate of the approximate acreage for each. The minimum assessment shall include a windshield survey;
5. A detailed description of the effects of the proposed development on wetland and buffer function and value, including the area of direct wetland disturbance; area of buffer reduction or averaging including documentation that functions and values will not be adversely affected by the reduction or averaging; effects of stormwater management; proposed hydrologic alteration including changes to natural drainage or infiltration patterns; effects on fish and wildlife species and their habitats; clearing and grading impacts; temporary construction impacts; and effects of increased noise, light or human intrusion;
6. A description of the methodologies used to conduct the sensitive areas study, including references;
7. Wetland rating forms and datasheets; and
8~~6~~. A mitigation plan pursuant to DMC Sections 14.42.130(C) and 14.42.250~~40~~ if applicable.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.240 - Wetland mitigation.

Activities that adversely affect wetlands and/or wetland buffers shall include mitigation sufficient to achieve no net loss of wetland function and values in accordance with DMC Section 14.42.130 and this section.

A. Wetland Alterations. Compensatory mitigation shall be provided for all wetland alteration and shall reestablish, create, rehabilitate, enhance, and/or preserve equivalent wetland functions and values. Compensation for wetland alterations shall occur in the following order of preference:

1. Reestablishing wetlands on upland sites that were formerly wetlands.
2. Rehabilitating wetlands for the purposes of repairing or restoring natural and/or historic functions.
3. Creating wetlands on disturbed upland sites such as those consisting primarily of nonnative, invasive plant species.
4. Enhancing significantly degraded wetlands.
5. Preserving Category I or II wetlands that are under imminent threat, provided that preservation shall only be allowed in combination with other forms of mitigation and when the director determines that the overall mitigation package fully replaces the functions and values lost due to development.

B. Mitigation ratios for wetland alterations under DMC Sections 14.42.220~~(A) through (I)~~. Compensatory mitigation for wetland alterations shall be based on the wetland category and the type of mitigation activity proposed. The replacement ratio shall be determined according to the ratios provided in the table below, provided that replacement ratio for preservation shall be determined by the director on a case-by-case basis. The created, reestablished, rehabilitated, or enhanced wetland area shall at a minimum provide a level of function equivalent to the wetland being altered and shall be located in an appropriate landscape setting.

~~Affected Wetland~~	~~Wetland Mitigation Type and Replacement Ratio*~~			
~~Category~~	~~Creation~~	~~Reestablishment~~	~~Rehabilitation~~	~~Enhancement Only~~
~~Category IV~~	~~1.5:1~~	~~1.5:1~~	~~2:1~~	~~3:1~~
~~Category III~~	~~2:1~~	~~2:1~~	~~3:1~~	~~4:1~~
~~Category II~~	~~3:1~~	~~3:1~~	~~4:1~~	~~6:1~~
~~Category I~~	~~No Alteration Allowed~~			

Table 5. Wetland Mitigation Ratios **[FOLLOWING TABLE ENTIRELY NEW]**

Category and Type of Wetland	Creation or Re-establishment	Rehabilitation only	Enhancement only
Category IV	1.5:1	3:1	6:1
Category III	2:1	4:1	8:1
Category II	3:1	6:1	12:1
Category I: Based on functions	4:1	8:1	16:1
Category I: Mature and old growth forest	6:1	12:1	24:1
Category I: High conservation value / Bog	Not considered possible	Case by case	Case by case

* Ratio is the replacement area: impact area.

~~C. Mitigation ratios for wetland alterations under DMC Sections 14.42.220(J) and (K). Compensatory mitigation for wetland alterations shall be based on the wetland category and the type of mitigation activity proposed. The replacement ratio shall be determined according to the ratios provided in the table below, provided that replacement ratio for preservation shall be determined by the director on a case-by-case basis. The created, reestablished, rehabilitated, or enhanced wetland~~

Commented [CZH17]: ESA Suggestion – simplify Wetland Mitigation Ratio requirements by only having one mitigation ratios table that applies to all allowed wetland alteration types

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~~area shall at a minimum provide a level of function equivalent to the wetland being altered and shall be located in an appropriate landscape setting.~~

~~1.~~

~~Affected Wetland~~	~~Wetland Mitigation Type and Replacement Ratio*~~				
~~Category~~	~~Reestablishment or Creation~~	~~Rehabilitation~~	~~Reestablishment or Creation (R/C) and Rehabilitation (RH)~~	~~Reestablishment or Creation (R/C) and Enhancement (E)~~	~~Enhancement (E) Only~~
~~Category IV~~	~~1.5:1~~	~~3:1~~	~~1:1 R/C and 1:1 RH~~	~~1:1 R/C and 2:1 E~~	~~6:1~~
~~Category III~~	~~2:1~~	~~4:1~~	~~1:1 R/C and 2:1 RH~~	~~1:1 R/C and 4:1 E~~	~~8:1~~

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2. The director shall have the authority to adjust the replacement ratios when one or more of the following apply:
   a. When a combination of mitigation approaches is proposed, the area of altered wetland shall be replaced at a 1:1 ratio through reestablishment or creation, and the remainder of the area needed to meet the ratio can be replaced by enhancement at a 2:1 ratio.
   b. When the project proponent has a demonstrated ability, based on past performance, to successfully design, construct, monitor and maintain wetland mitigation projects/sites.
   c. When meeting the required ratios would adversely affect other natural and valuable characteristics of an otherwise appropriate and suitable mitigation site.

D. Compensation for wetland buffer impacts shall occur at a minimum 1:1 ratio, except where higher ratios are required to compensate for limited wetland buffer reduction allowances. Compensatory mitigation for buffer impacts shall include enhancement of degraded buffers by planting native species, removing structures and impervious surfaces within buffers, and other measures.

E. Mitigation banks shall not be subject to the replacement ratios outlined in the replacement ratio table in subsection B of this section, but shall be determined as part of the mitigation banking agreement and certification process.

F. Buffers. Replacement wetlands established pursuant to these mitigation provisions shall have adequate buffers to ensure their protection and sustainability. The buffer shall be based on the category of the reestablished, created, rehabilitated, enhanced, or preserved wetland in DMC Section 14.42.210, provided that the director shall have the authority to approve a smaller buffer when existing site constraints (such as a road) prohibit attainment of the standard buffer.

G. Adjustment of ratios set out in subsection B of this section. The director shall have the authority to adjust these ratios when a combination of mitigation approaches is proposed. In such cases, the area of altered wetland shall be replaced at a 1:1 ratio through reestablishment or creation, and the remainder of the area needed to meet the ratio can be replaced by enhancement at a 2:1 ratio. For example, impacts to one acre of a Category II wetland requiring a 3:1 ratio for creation

can be compensated by creating one acre and enhancing four acres (instead of the additional two acres of creation that would otherwise be required).

H. Location – Permittee Responsible Mitigation. Compensatory mitigation shall be provided on-site or a city approved off-site location that will provide the greatest ecological benefit and have the greatest likelihood of success. Off-site mitigation for impacts within Subbasin Management Groups prioritized lower for protection and restoration of ecological functions may be encouraged to occur in Subbasin Management Groups 1 and 2A.~~, provided that mitigation occurs as close as possible to the impact area and within the same sub-basin as the permitted alteration. This provision may be waived upon demonstration through a watershed- or landscape-based analysis that mitigation within an alternative sub-basin of the same watershed would have greater ecological benefit.~~ Mitigation shall occur within Water Resource Inventory Area 7 (WRIA).

I. Wetland Mitigation Banks.

1. Credits from a wetland mitigation bank may be approved for use as compensation for unavoidable impacts to wetlands when:
   a. The bank is certified under state rules;
   b. The Administrator determines that the wetland mitigation bank provides appropriate compensation for the authorized impacts; and
   c. The proposed use of credits is consistent with the terms and conditions of the certified bank instrument.
2. Replacement ratios for projects using bank credits shall be consistent with replacement ratios specified in the certified bank instrument.
3. Credits from a certified wetland mitigation bank may be used to compensate for impacts located within the service area specified in the certified bank instrument. In some cases, the service area of the bank may include portions of more than one adjacent drainage basin for specific wetland functions.

J. In-Lieu Fee. The city does not anticipate development of a city-administered in-lieu fee program. ~~To aid in the implementation of off-site mitigation, the City may develop an in-lieu fee program. This program shall be developed and approved through a public process and be consistent with federal rules, state policy on in-lieu fee mitigation, and state water quality regulations~~If a King County or other approved in-lieu fee program is approved to provide credit for unavoidable impacts to wetlands occurring in Duvall, the city may allow use of the approved in-lieu fee program. An approved in-lieu-fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor, a governmental or non-profit natural resource management entity. Credits from an approved in-lieu-fee program may be used ~~when paragraphs 1-6 below apply~~consistent with the following criteria:

1. The approval authority determines that it would provide environmentally appropriate compensation for the proposed impacts.
2. The mitigation will occur on a site identified using the site selection and prioritization process in the approved in-lieu-fee program instrument.
3. The proposed use of credits is consistent with the terms and conditions of the approved in-lieu-fee program instrument.
4. Land acquisition and initial physical and biological improvements of the mitigation site must be completed within three years of the credit sale.
5. Projects using in-lieu-fee credits shall have debits associated with the proposed impacts calculated by the applicant's qualified wetland scientist using the method consistent with the credit assessment method specified in the approved instrument for the in-lieu-fee program.

Commented [AB18]: Revisions from previous draft based on Staff and CC review / input.

I-L Fee program will not be developed by the City… would be a huge administrative burden that wouldn't ever make sense.

6. Credits from an approved in-lieu-fee program may be used to compensate for impacts located within the service area specified in the approved in-lieu-fee instrument.

K~~I~~. Protection. All mitigation areas and their associated buffer shall be permanently protected and managed to prevent degradation and ensure protection of ~~sensitive area~~wetland functions and values into perpetuity. Permanent protection shall be achieved through a site protection mechanism (e.g., conservation easement, restrictive covenant)~~deed restriction or other protective covenant~~ in accordance with DMC Section 14.42.100.

L~~J~~. Timing:

1. Mitigation activities shall be timed to occur in the appropriate season based on weather and moisture conditions and shall occur as soon as possible after the permitted alteration.

2. Advance Mitigation. Mitigation for projects with pre-identified impacts to wetlands may be constructed in advance of the impacts if the mitigation is implemented according to federal rules, state policy on advance mitigation, and state water quality regulations.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.250 - Wetland mitigation plan.

A. In addition to meeting the requirements of DMC Section 14.42.130, a compensatory mitigation plan for wetland and wetland buffer impacts shall meet the following requirements:

1. The plan shall be consistent with guidelines in Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans-Version 1 (Ecology Publication #06-06-011b) and Selecting Wetland Mitigation Sites Using a Watershed Approach (Ecology Publication #09-06-32), as revised. ~~based on applicable portions of the Washington State Department of Ecology's Guidelines for Developing Freshwater Wetland Mitigation Plans and Proposals 2006 (Ecology Publication No. 06-06-011b), or other appropriate guidance document that is consistent with best available science.~~

2. The plan shall contain sufficient information to demonstrate that the proposed activities are logistically feasible, constructible, ecologically sustainable, and likely to succeed. Specific information to be provided in the plan shall include:

a. The rationale for site selection;

b. General description and scaled drawings of the activities proposed including, but not limited to, to clearing, grading/excavation, drainage alterations, planting, invasive plant management, installation of habitat structures, irrigation, and other site treatments associated with the development activities and proposed mitigation action(s);

c. A description of the ecological functions and values that the proposed alteration will affect and the specific ecological functions and values the proposed mitigation area(s) shall provide, together with a description of required or recommended mitigation ratios and an assessment of factors that may affect the success of the mitigation program;

d. Overall goals of the plan, including wetland function, value, and acreage;

e. Description of baseline (existing) site conditions including topography, vegetation, soils, hydrology, habitat features (i.e., snags), surrounding land use, and other pertinent information;

f. Field data confirming the presence of adequate hydrology (surface and/or groundwater) to support existing and compensatory wetland area(s);

g. Nature of mitigation activities, including area of restored, created, enhanced and preserved wetland, by wetland type;

h. Detailed grading and planting plans showing proposed post-construction topography; general hydrologic patterns; spacing and distribution of plant species, size and type of proposed planting stock, watering or irrigation plans, and other pertinent information;

i. A description of site treatment measures including invasive species removal, use of mulch and fertilizer, placement of erosion and sediment control devices, and best management practices that will be used to protect existing wetlands and desirable vegetation;

j. A demonstration that the site will have adequate buffers sufficient to protect the wetland functions into perpetuity;

k. A monitoring plan with ~~S~~specific measurable performance standards that the proposed mitigation action(s) shall achieve together with a description of how the mitigation action(s) will be evaluated and monitored. Performance standards shall be project-specific and use best available science to aid the department in evaluating ~~to determine if~~whether the performance standards are being met. The performance standards shall be tied to and directly related to the mitigation goals and objectives.

l. A contingency plan to guide decisions for revising compensatory mitigation plans and implementing measures to address both foreseeable and unforeseen circumstances that adversely affect compensatory mitigation success. Contingency plans will necessarily lack specific measures to address underperformance, but should identify funding sources and responsible parties. Specific corrective measures shall be developed if and when underperformance details become clearer.~~and identification of potential courses of action, and any corrective measures to be taken if monitoring or evaluation indicates that project performance standards are not being met. The performance standards shall be tied to and directly related to the mitigation goals and objectives;~~

~~l~~m. Cost estimates for the installation of the mitigation program, monitoring, and potential corrective actions if project performance standards are not being met.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.260 - Wetland mitigation monitoring.

A. All compensatory mitigation projects shall be monitored for a period necessary to establish that performance standards have been met, but generally not for a period less than five (5) years. The director shall have the authority to extend the monitoring period and require additional monitoring reports for up to ten (10) years when any of the following conditions apply:

1. The project does not meet the performance standards identified in the mitigation plan.

2. The project does not provide adequate replacement for the functions and values of the impacted sensitive area.

3. The project results in unanticipated changes to hydrology of the impacted and/or mitigated wetland.

4~~3~~. The project involves establishment of forested plant communities, which require longer time for establishment.

5. The project involves wetland creation.

4~~6~~. Reports shall be submitted annually for the first three years following construction and at the completion of years five, seven, and ten (10) if applicable to document milestones, successes, problems, and contingency actions of the compensatory mitigation.

B. Mitigation Surety. A performance assurance shall be provided to guarantee installation, monitoring, maintenance and performance of mitigation actions in accordance with Section 14.42.130(C), provided that the time period for the surety may be extended for the length of the monitoring period.

C. Monitoring Reports. Mitigation monitoring reports shall include information sufficient to document and assess the degree of mitigation success or failure as defined by the performance standards contained in the approved mitigation plan. Information to be provided in annual monitoring reports shall include the following:

1. Number and location of vegetation sample plots used to document compliance with performance standards;
2. Measurements of the percent survival of planted material, plant cover, stem density, presence of invasive species, or other attributes;
3. For sites that involve wetland creation, reestablishment or rehabilitation, hydrologic observations of soil saturation/inundation as needed to demonstrate that a site meets the wetland hydrology criterion;
4. Representative photographs of the site;
5. A written summary of overall site conditions and recommendations for maintenance and replacement actions if needed;
6. Other information that a qualified professional recommends to be included and that the director deems necessary to ensure the success of the site.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.300 - Fish and wildlife habitat conservation areas—Designation, mapping and classification.

A. Fish and wildlife habitat conservation areas are those areas identified as being of critical importance to the maintenance of certain fish, wildlife, and/or plant species. These~~s~~ areas are typically identified either by known point locations of specific species (such as a nest or den) or by habitat areas or both. All areas within the city meeting these criteria are designated sensitive areas and are subject to the provisions of this chapter.

B. The approximate location and extent of previously identified fish and wildlife habitat conservation areas are shown on the city's sensitive area maps. Other unmapped habitats and/or species occurrences may exist in the city. These maps are to be used as a guide and do not provide a definitive sensitive area determination.

C. For purposes of this chapter, fish and wildlife habitat conservation areas shall include all of the following:

1. Streams;
2. Naturally occurring ponds under twenty (20) acres in size and their submerged aquatic beds that provide fish or wildlife habitat;
3. Fish and wildlife habitat corridors, as designated by the city

Waters of the state;

3~~4~~. State n~~N~~atural area preserves and natural resource conservation areas;

5~~4~~. Areas with which species listed under the Federal Endangered Species Act have a primary association;

6~~5~~. State priority habitats and areas associated with state priority species.

D. In addition to the species and habitats identified in subsection C of this section, the city may designate additional species and/or habitats of local importance as follows:

1. In order to nominate an area or a species to the category of locally important an individual or organization must.
   a. Demonstrate a need for special consideration based on:

i. Declining population,

ii. High sensitivity to habitat manipulation, or

iii. Demonstrated commercial, recreational, cultural, or other special value;

b. Propose relevant management strategies considered effective and within the scope of this chapter; and

c. Provide a map showing the species or habitat location(s).

2. Submitted proposals shall be reviewed by the city and may be forwarded to the state departments of fish and wildlife, natural resources, and/or other local, state, federal, and/or tribal agencies or experts for comments and recommendations regarding accuracy of data and effectiveness of proposed management strategies.

3. If the proposal is found to be complete, accurate, and consistent with the purposes and intent of this chapter, the city council will hold a public hearing to solicit comment. Approved nominations will become designated locally important habitats or species and will be subject to the provisions of this chapter.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.310 - Fish and wildlife habitat conservation areas—Streams.

A. Streams shall be designated according to the following criteria:

1. Type S. Type S s~~S~~treams are ~~under the jurisdiction of the Shoreline Management Act: shoreline streams are those streams~~ identified and regulated as shorelines of the state as defined by WAC 173-18-~~310~~ 210 and~~/or~~ designated in the Duvall shoreline master program, DMC Chapter 14.78. The Snoqualmie River is the only designated shoreline stream in Duvall.

2. Type F – Salmon bearing. Type F - Salmon bearing streams ~~Other fish bearing streams that~~ do not meet the definition of shorelines of the state but have known or potential use by anadromous or resident ~~fish~~ salmonid species. The director shall make determinations of known or potential ~~fish~~ salmonid use in accordance with best available science and shall take into consideration factors such as species life cycle requirements, habitat suitability, channel gradient, presence or lack of barriers, and a reasoned evaluation of current, historic, and potential ~~fish~~ salmonid use by a qualified professional.

3. Type F – Non-salmon bearing. Type F – Non-salmon bearing streams are o~~O~~ther non-salmon bearing streams that do support other resident fish species and that do not meet the definition of shorelines of the state.

4. Type Np. Type Np streams are ~~Nonfish-bearing streams are those~~ streams that have no known or potential use by anadromous or resident fish based on the stream character, hydrology and gradient, provided that human-made barriers shall not be considered a limit on fish use except when the director makes the following findings:

a. The human-made barrier is located beneath public infrastructure that is unlikely to be replaced and it is not feasible to remove the barrier without removing the public infrastructure, provided that the infrastructure is not identified for future modification in the capital facility or other plans of the public agency responsible for the infrastructure, and the facility will not exceed its design-life within the foreseeable future;

b. The human-made barrier is located beneath one or more dwelling units and it is not feasible to remove the barrier without removing the dwelling unit, the dwelling units are in a single-family zoning district, on a lot or lots not subject to subdivision, and the dwelling units are of a size and condition that removal or substantial remodel is not likely;

c. The human-made barrier is not identified for removal by a public agency or in an adopted watershed plan.

B. The director may require a sensitive area study to aid in determining stream classification.

C. The director shall determine stream type in accordance with best available science by considering known and potential salmonid use. The director shall take into consideration current, historic, and potential fish use and factors such as species life cycle requirements, habitat suitability, channel gradient, presence or lack of barriers, and type of barrier (manmade or natural) to make a reasoned evaluation. This may include consultation with federal, state and tribal biologists and/or other qualified professionals.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.320 - Fish and wildlife habitat conservation areas—Stream buffers.

The director shall have the authority to require buffers from the edges of all streams in accordance with the following:

A. Buffers shall be established for activities adjacent to as necessary to protect the integrity, functions and values of the resource. Buffer widths shall reflect the sensitivity of the species or habitat and the type and intensity of the adjacent human use or activity.

B. Buffer Measurement. The standard buffer shall be measured landward horizontally on both sides of the stream from the ordinary high water mark as identified in the field. The required buffer shall be extended to include any adjacent regulated wetland(s), landslide hazard areas and/or erosion hazard areas and required buffers, but shall not be extended across roads or other lawfully established structures or hardened surfaces that are functionally and effectively disconnected from the stream.

C. Standard Buffers. The standard buffer widths required by this section are based on scientific studies of the conditions necessary to sustain ecological functions and values to support anadromous and resident fish and presume the existence of a dense native vegetation community in the buffer zone adequate to protect the stream functions and values at the time of the proposed activity. Buffers shall be measured as follows:

1. Type S streamsStreams under the jurisdiction of the Shoreline Management Act—one hundred fifty (150) feetconsistent with DMC Chapter 14.78 (Shoreline Regulations);

2. Type F - Salmon bearing streams—one hundred (100) feet;

3. Type F – Other fish bearing (non-salmon) streams—seventy-five (75) feet;

4. Type Np and Type Ns Nonfish-bearing streams—fifty (50) feet;

5. Nonfish-bearingType Np and Ns streams in existing subdivisions:

   a. Where streams have been placed in separate tracts, buffers will be provided by the tract, provided a minimum dimension of twenty-five (25) feet from the edge of the stream is provided;

   b. Where streams have not been placed in separate tracts, or if a minimum dimension of twenty-five (25) feet from the edge of the stream is not provided, buffers will meet the dimensional requirements in subsection (C)(4) of this section unless existing structures are located within the buffer. In that case, the following provisions shall apply:

      i. An inner riparian buffer shall be provided with a dense community of native trees, shrubs, and groundcover. The dimension of this buffer shall be a minimum of fifteen (15) feet, and may be expanded if sufficient clearance is available between the stream and existing primary structures;

Commented [AB19]: Salmon bearing streams receive a standard buffer of 100 feet.

Allowances for reduction or averaging are further restricted by updates to code.

ii. An outer riparian buffer may be provided to extend within ten (10) feet of an existing primary structure. Within the outer buffer, a maximum of twenty-five (25) percent of the zone may be used as grass turf; with the balance a dense community of native trees, shrubs, and groundcover.

D. Buffers in Conjunction with Other Sensitive Areas. Where other sensitive areas defined in this chapter falls within the stream buffer, the buffer area shall be the most expansive of the buffers applicable to any applicable sensitive area.

E. Performance-Based Buffer. The director shall have the authority to administer the stream buffers in the table below as an alternative to the standard buffers in subsection C of this section with the specific written commitment of an applicant and the incorporation in development plans of the specific management measures specified, together with implementation of the measures committed to by the city of Duvall and the applicant shall demonstrate that the performance-based buffer is not detrimental to the stream system.

Duvall Performance—Based Stream Buffer Standards		
Sensitive Area (Duvall Class)	Buffers with Enhancements	Specific Provisions
~~Snoqualmie River (Class 1) South of UGA, North of Woodinville-Duvall Road~~	~~Existing area west of the Snoqualmie Valley Trail~~	~~Existing boat ramp and recreation uses are permitted and such uses may be maintained and updated to current standards/materials.~~
		~~Provide enhancement of the existing steep slope/landslide hazard buffer area by selective planting of native evergreens to more closely replicate native plant communities.~~
		~~Provide additional top-of-slope vegetated setbacks where more detailed geologic field work may identify an erosion or slope failure hazard.~~
		~~Provide fencing to control informal access to the buffer area to avoid a network of informal trails and associated vegetation damage and erosion and to delineate the sensitive area on the west side of the Snoqualmie Valley Trail.~~
~~Snoqualmie River (Class 1) South of Woodinville-Duvall Road, North of NE Stephens Street~~	~~Existing area west of the Snoqualmie Valley Trail~~	~~To the extent possible as determined by the director, provide a permanent vegetated buffer on the west side of the Snoqualmie Valley Trail, between the Trail and the River.~~

Commented [AB20]: All rows relevant to Snoqualmie River are superceded by protections provided for the River within the newly adopted SMP.

		~~Orient buildings within the Riverside Village planning area east of the buffer to avoid direct light and glare impacts to the buffer area to the west.~~
		~~Install appropriate vegetation on the west side of the trail as set out in DMC Chapter 14.38~~
		~~Encourage low impact development (LID) strategies for developments adjacent to the trail.~~
~~Snoqualmie River (Class 1) South of NE Stephens Street to southern city limits~~	~~150 feet~~	~~Provide enhanced permanent vegetated buffer averaging 150 feet within this corridor to provide:~~
		~~Streambank stability~~
		~~Sediment filtration~~
		~~Off-channel habitat~~
		~~Increased stream shading and stream temperature regulation~~
		~~Increased (Large Woody Debris) LWD recruitment and habitat diversity~~
		~~Stable hydrologic regime~~
		~~The buffer may narrow to allow the developed portions of McCormick Park to be maintained/enhanced (beach, small beach park, large park).~~
		~~Plant and maintain a mix of native deciduous and coniferous species and related native understory shrubs. Initial maintenance for control of invasive species will be required.~~
		~~Limit recreation uses to passive recreation including public access trails, river overlooks, beaches, and special events, provided there is control of informal trails and other human use to avoid distress to understory and trees. This may include signing and fencing to keep users on designated trails.~~

Thayer Creek (Class 2) West of Trail Embankment	100	Provide a permanent minimum vegetated buffer averaging 100 feet within this corridor; this buffer may be increased by up to 150 feet to accommodate mitigation from Reaches 3 and 4.
		Plant and maintain a mix of native deciduous and coniferous species and native understory. Initial maintenance for control of invasive species will be required.
		Use of the buffer area for non-intrusive passive recreation should be discouraged due to its width. Formal trails can cross the stream provided that there is adequate fish passage.
		Provide signing and fencing as appropriate to keep users on designated trails to control informal human use that may distress understory and trees and increase erosion.
Thayer Creek (Class 2) Between Trail Embankment City ownership	100 feet	Provide a permanent minimum vegetated buffer averaging 100 feet within this corridor; this buffer may be increased by up to 150 feet to accommodate mitigation from Reaches 3 and 4.
		Plant and maintain a mix of native deciduous and coniferous species and native understory. Initial maintenance for control of invasive species will be required.
		Use of the buffer area for non-intrusive passive recreation should be discouraged due to its width. Formal trails can cross the stream provided that there is adequate fish passage.
		Provide signing and fencing as appropriate to keep users on designated trails to control informal human use that may distress understory and trees and increase erosion.
Thayer Creek (Class 2) Between City ownership and Main Street	Varies, see column to the right	Right Bank
		Provide a permanent vegetated buffer between the stream and the Main Street right-of-way.

Commented [AB21]: Performance-based buffer standards for this Thayer Reach are being implemented by current projects. Likely advisable to maintain all of this, since projects (and mitigation) have not yet been implemented

		Manage stormwater runoff from Main Street including flow control and treatment.
		Enhance the riparian zone with native trees and shrubs and remove invasive plants along the full length and depth of the individual parcel(s) riparian buffer.
		Install fencing, signage, or other suitable measures that prohibit or discourage entrance and disturbance to the stream and buffer area to provide protection of the key aquatic functions.
		Left Bank
		Provide a 50-foot buffer and development restrictions within this reach, including:
		Enhance the riparian zone with native trees and shrubs and invasive plant removal along the full length and depth of the individual parcel(s) riparian buffer.
		Install fencing, signage, or other suitable measures that prohibit or discourage entrance and disturbance to the stream and buffer area to provide protection of the key aquatic functions.
		Install stormwater detention/treatment for roadways and other impervious surface on the developed portion of the site.
		Provide resources for enhancement of buffer areas in Reach 1 and portions of Reach 2 owned by the city of Duvall, equivalent to the difference between the areas provided in recommended general buffer width of 100 feet and the area within the buffer provided under the standards above.
		Encourage low impact development (LID) strategies.
Thayer Creek (Class 2) Main Street to NE 143rd	50 feet	Evaluate the necessity of preserving wetlands adjacent to the riparian corridor to maintain discharge for baseflow support in low streamflow periods.

Commented [AB22]: Similar to above – this reach has been permitted as part of Duvall Main Street project, and will soon be enhanced per City code requirements.

Not yet built; may be advisable to keep for now

		Provide a minimum buffer of 50 feet with development restrictions requiring wetland preservation with the following conditions:
		Enhance the riparian zone with native trees and shrubs and invasive plant removal along the full length and depth of the riparian buffer, and adjacent wetland.
		Install fencing, signage, or other suitable measures that prohibit or discourage entrance and disturbance to the stream and buffer area to provide protection of the key aquatic functions.
		Install stormwater detention/treatment for roadways and other impervious surface on the developed portion of the site.
		Provide resources for enhancement of buffer areas in Reach 1 and portions of Reach 2 owned by the city of Duvall, equivalent to the difference between the areas provided in recommended general buffer width of 100 feet and the area within the buffer provided under the specific standards above.
		Encourage low impact development (LID) strategies.
Thayer Creek (Class 2) 143rd to Big Rock Road	50 feet	Remove the fish-passage barrier of the existing farm pond.
		Provide a minimum buffer of 50 feet with the following conditions:
		Enhance the riparian zone with native trees and shrubs and invasive plant removal along the full length and depth of the riparian buffer.
		Install fencing, signage, or other suitable measures that prohibit or discourage entrance and disturbance to the stream and buffer area to provide protection for stream functions.
		Install stormwater detention/treatment for roadways and other impervious surface on the developed portion of the site.

Commented [AB23]: Still applicable for area and potential development to the East of the channel

		Provide resources for enhancement of buffer areas in Reach 1 and portions of Reach 2 owned by the city of Duvall, equivalent to the difference between the areas provided in recommended general buffer width of 100 feet and the area within the buffer provided under the specific standards above.
		Encourage low impact development (LID) strategies.
Thayer Creek (Class 2) South of Big Rock Road	50 feet	Provide a buffer of 50 feet.
		Enhance the riparian zone with native trees and shrubs and invasive plant removal along the full length and depth of the riparian buffer.
		Install fencing, signage, or other suitable measures that prohibit or discourage entrance and disturbance to the stream and buffer area to provide protection for stream functions.
>		Install stormwater detention/treatment for roadways and other impervious surface on the developed portion of the site.
		Encourage low impact development (LID) strategies.
Coe-Clemons Creek (Class 2) West of Trail Embankment	100 feet	On the south distributary channel, provide a 100-foot-wide buffer to maintain the off-channel functions of the stream. This buffer may be increased to 150 feet to accommodate mitigation from Reaches 4 through 7 of Coe-Clemmons Creek.
		On the north distributary channel, provide a 50-foot-wide buffer.
		Plant and maintain a mix of native deciduous and coniferous species and native understory within the riparian buffer. Initial maintenance for control of invasive species will be required.
		Use of the buffer area for non-intrusive passive recreation should be discouraged due to its width. Formal trails can

Commented [AB24]: Still applicable for potential future development to the east of the channel

		cross the stream provided that there is adequate fish passage.
		Provide signing and fencing to keep users on designated trails to control informal human use that may distress understory and trees and increase erosion.
Coe-Clemons Creek (Class 2) Trail Embankment to Main Street	100 feet	Provide a 100-foot-wide riparian buffer to maintain the off-channel functions of the stream. This buffer may be increased to 150 feet to accommodate mitigation from Reaches 4 through 7 of Coe-Clemmons Creek.
		Plant and maintain a mix of native deciduous and coniferous species and native understory within the riparian buffer. Initial maintenance for control of invasive species will be required.
		Use of the buffer area for non-intrusive passive recreation should be discouraged due to its width. Formal trails can cross the stream provided that there is adequate fish passage.
		Provide signing and fencing to keep users on designated trails to control informal human use that may distress understory and trees and increase erosion.
Coe-Clemons Creek (Class 2) SR 203 to 3rd Ave NE	Varies, see column to the right	Preserve the existing native vegetation within the ravine and existing buffer areas to the stream. Where the ravine is within private land to the south, upon redevelopment of residences on existing lots, or upon further subdivision, require specific geotechnical reports consistent with this chapter to assure stability of the ravine and provide sufficient top and toe-of-slope vegetated buffers.
		Selectively enhance existing vegetation with native coniferous trees and understory where bank slumping has occurred and where existing deciduous trees are of successional species.
		Control invasive species within the buffer area and replace with native vegetation.
		Increase top-of-slope setbacks and revegetate with native species where erosion into the ravine is observed.

		Provide fencing to control informal access to the riparian and steep slope/landslide hazard areas to avoid a network of informal trails and associated vegetation damage and the potential for erosion on steep slope/landslide hazard areas.
		Manage runoff from parking lots, playground and lawn areas within the park and from adjacent development to the south to assure they do not adversely affect slope stability, erosion and water quality.
		Encourage low impact development (LID) strategies.
		For any private development or redevelopment east and west of Taylor Park:
		Provide buffer widths as close as possible to the recommended standard buffer of 100 feet, while meeting reasonable use criteria.
		Install stormwater detention/treatment for roadways and other impervious surface on the developed portion of the site.
		Provide resources for enhancement of buffer areas in Reach 1 and portions of Reach 2, for areas where recommended stream and steep slope/landslide hazard buffers are not met.
Coe-Clemmons Creek (Class 2) 3rd Ave NE to N Miller	Varies, see column to the right	Provide a buffer width of 100 feet between 3rd Avenue and the detention pond to maintain functions that support salmonid spawning (stream temperature, water quality, and substrate).
		Provide for future reconfiguration of the detention pond to allow fish passage to upstream areas.
		Upstream of the detention pond, replace the culverted portion of the stream where not needed for driveway access and provide a buffer width of up to 50 feet (with sufficient clearance to the existing residences if provided) to support the functions provided by its riparian zone (hydrology, stream temperature, and contaminant/sediment regulation) generally support downstream fish use.
		Encourage low impact development (LID) strategies.

		Where the location of existing residences will not accommodate a 50-foot-wide buffer, provide a 25-foot-wide buffer consisting of two zones to maintain or improve the limited buffer functions that currently exist, while still allowing some redevelopment.
		The inner 15-foot-wide alternative riparian zone vegetated with a dense community of native trees, shrubs, and groundcover.
		Within the outer 10-foot-wide riparian zone, a maximum of 25 percent of the zone may be used as grass turf; with the balance native trees, shrubs, and groundcover.
Coe-Clemmons Creek (Class 2) Parallel to Kennedy, extending east	25 feet	Establish a 25-foot-wide buffer consisting of two zones to maintain or improve the limited buffer functions that currently exist, while still allowing some redevelopment.
		The inner 15-foot-wide alternative riparian zone vegetated with a dense community of native trees, shrubs, and groundcover.
		Within the outer 10-foot-wide riparian zone, a maximum of 25 percent of the zone may be used as grass turf; with the balance native trees, shrubs, and groundcover.
		The stream reach within open space in the Arborwood Plat would maintain the buffer provided in the existing NGPAs for the development in that area.
		Encourage low impact development (LID) strategies.
Coe-Clemmons Creek (Class 2) Parallel to Miller Street, extending east	25 feet	Establish a 25-foot-wide buffer consisting of two zones to maintain or improve the limited buffer functions that currently exist, while still allowing some redevelopment.
		The inner 15-foot-wide alternative riparian zone vegetated with a dense community of native trees, shrubs, and groundcover.
		Within the outer 10-foot-wide riparian zone, a maximum of 25 percent of the zone may be used as grass turf; with the balance native trees, shrubs, and groundcover.

		Eliminate parking on the street side adjacent to the stream and plant an inner 10-foot-wide vegetated buffer within the right-of-way.
		The remainder of the stream reach, upstream of the east terminus of NE Miller Street, would have the buffer provided in the existing NGPA for the development in that area.
		Encourage low impact development (LID) strategies.
Coe-Clemmons Creek (Class 2) Miller Street to NE 146th Place	Varies, see column to the right	Within existing residential lots facing Miller Street and NE 146th Place:
		Establish a 25-foot-wide buffer consisting of two zones to maintain or improve the limited buffer functions that currently exist, while still allowing some redevelopment.
		The inner 15-foot-wide alternative riparian zone vegetated with a dense community of native trees, shrubs, and groundcover.
		Within the outer 10-foot-wide riparian zone, a maximum of 25 percent of the zone may be used as grass turf; with the balance native trees, shrubs, and groundcover.
		In the stream reach within the undeveloped area between lots facing Miller Street and NE 146th Place:
		Provide a standard 50-foot buffer.
		Provide a vegetation community within the riparian buffer of native trees, shrubs, and groundcover.
		Install fencing, signage, or other suitable measures that prohibit or discourage entrance and disturbance to the stream and buffer area to provide protection for stream functions.
		Install stormwater detention/treatment for roadways and other impervious surface on the developed portion of the site.
		Encourage low impact development (LID) strategies.

Coe-Clemmons Creek (Class 2) Parallel to NE 272nd Place NE, NE 146th Place, and 274th Way	25 feet	Establish a 25-foot-wide buffer consisting of two zones to maintain or improve the limited buffer functions that currently exist, while still allowing some redevelopment.
		The inner 15-foot-wide alternative riparian zone vegetated with a dense community of native trees, shrubs, and groundcover.
		Within the outer 10-foot-wide riparian zone, a maximum of 25 percent of the zone may be used as grass turf; with the balance native trees, shrubs, and groundcover.
		Encourage low impact development (LID) strategies.
Cherry Creek A (Class 2) Cherry Valley Road to NE Bird Street	See column to the right	Preserve the existing native vegetation within the open space tracts within the ravine and selectively enhance existing vegetation with native coniferous trees and understory where bank slumping has occurred and where existing deciduous trees are of successional species.
		Control invasive species within the buffer area and replace with native vegetation.
		Provide fencing to control informal access to the riparian and steep slope/landslide hazard areas to avoid a network of informal trails and associated vegetation damage and the potential for erosion on steep slopes/landslide hazards.
		For any private development or redevelopment within this stream reach:
		Increase top-of-slope setbacks and revegetate with native species where erosion into the ravine is observed.
		Install stormwater detention/treatment for roadways and other impervious surface on the developed portion of the site.
		Provide resources for enhancement of the open space buffer areas in Reach 1 equivalent to the difference between the areas provided in approved development plans and the recommended general stream and recommended general top-of-slope buffer area.

		Encourage low impact development (LID) strategies.

F. Reduced Buffers—Specific Performance Standards Not Defined. The director shall have the authority to reduce standard stream buffer widths on a case-by-case basis for streams and/or stream segments that do not have defined specific performance standards when the applicant demonstrates through a sensitive area study to the satisfaction of the director that all the following criteria are met:

1. The buffer reduction shall not adversely affect the habitat functions and values of the adjacent stream. In all instances where an existing buffer is comprised of predominantly native and woody vegetation, the director shall assume that buffer reduction is not feasible without adversely affecting the functions and values of the adjacent stream, and shall deny requests for buffer reduction;

2. ~~The~~ In no instances shall standard buffers ~~shall not~~ be reduced to less than the maximum buffer reduction allowances in Table 5~~than fifty (50) percent of the standard buffer~~;

3. Buffer reduction shall only be allowed when opportunity for stream buffer averaging as provided in subsection G of section is determined unfeasible due to site constraints.

~~3~~4. The slopes adjacent to the stream within the buffer area are stable and the gradient does not exceed thirty (30) percent;

~~4~~5. The applicant implements all reasonable measures to reduce the adverse effects of adjacent land uses and ensure no net loss of functions and values in conjunction with a sensitive area mitigation study. The specific measures that shall be implemented include, but are not limited to, those in DMC Section 14.42.210(B)(4);

~~5~~6. Stream buffer averaging shall not be allowed if the performance-based stream buffers are implemented pursuant to subsection E of this section;

~~6. The applicant shall demonstrate that the proposed reduced buffer is not detrimental to the stream system.~~

Commented [AB25]: Redundant with #1

G. Averaged Buffers. The director shall have the authority to average standard stream buffer widths on a case-by-case basis when the applicant demonstrates to the satisfaction of the director that all the following criteria are met:

1. The total area contained in the buffer area after averaging is no less than that which would be contained within the standard buffer and all increases in buffer dimension are parallel to the stream;

2. The buffer averaging does not reduce the functions or values of the stream or riparian habitat, or the buffer averaging, in conjunction with vegetation enhancement, increases the habitat function;

3. The buffer averaging is necessary due to site constraints caused by existing physical characteristics such as slope, soils, or vegetation;

~~4.~~ ~~The~~ At any point within the averaged buffer, the minimum width shall not be reduced to less than the maximum buffer averaging allowances for each subbasin management group in Table 5~~buffer width may be reduced by twenty-five (25) percent of the standard width if the criteria in subsection G of this section are met~~;

5. The slopes adjacent to the stream within the buffer area are stable and the gradient does not exceed thirty (30) percent;

6. The applicant implements all reasonable measures to reduce the adverse effects of adjacent land uses and ensure no net loss of functions and values in conjunction with a sensitive area mitigation

study. The specific measures that shall be implemented include, but are not limited to, those in DMC Section 14.42.210(B)(4);

7. Stream buffer averaging shall not be allowed if the performance-based stream buffers are implemented pursuant to DMC Section 14.42.330(E);

8. ~~The applicant shall demonstrate that the proposed buffer averaging is not detrimental to the stream system.~~

~~H~~I. Impacts to significant trees that result from an allowed stream buffer reduction and/or averaging shall require tree replacement at a higher ratio (greater than 3:1, as determined by the director) than significant trees impacted outside of the buffer. Applicants are required to follow tree protection standards discussed in DMC Section 14.40, Tree Protection.

~~J~~I. The director shall have the authority to increase the width of a stream buffer on a case-by-case basis when such increase is necessary to achieve any of the following:

1. Protect fish and wildlife habitat, maintain water quality, ensure adequate flow conveyance; provide adequate recruitment for large woody debris, maintain adequate stream temperatures, or maintain in-stream conditions;
2. Compensate for degraded vegetation communities or landslide hazard areas adjacent to the stream;
3. Maintain areas for channel migration;
4. Protect adjacent or downstream areas from erosion, landslides, or other hazards.

~~J~~I~~K~~. The buffer standards required by this chapter presume the existence of a dense vegetation community in the buffer adequate to protect the stream functions and values. When a buffer lacks adequate vegetation, the director may require buffer planting or enhancement, and/or deny a proposal for buffer reduction or buffer averaging.

Table 5. Subbasin Management Group - Buffer Reduction and Averaging Standards for Streams
[NEW TABLE – track changes reflect July 2017 draft revisions]

	Subbasin Management Group				
	1-Protect /Restore	2A – Highest Conservation	2B-Moderate Conservation	2C-Least Conservation	3 – Urban Development
Stream buffer reduction (DMC 14.42.320.F) – maximum reduction allowed.	No reduction	No reduction	~~10%~~No reduction	~~15~~10%	20~~5~~%
Stream buffer averaging (DMC 14.42.320.G) – maximum reduction allowed.	No averaging	No averaging	10%	~~20~~15%	~~30~~25%

(Ord. 1056 § 1 Exh. A (part), 2007)

Commented [AB26]: Redundant with #2

Commented [AB27]: Additional limitations applied based on Advisory Grou and Staff review comments; intent to ensure adequate protection and consideration of BAS

14.42.330 - Fish and wildlife habitat conservation areas—Streams—Allowed uses.

The following activities or uses may be permitted in streams and/or their buffers when the mitigation sequencing requirements of DMC 14.42.130(B) are followed, all reasonable measures have been taken to avoid adverse effects on species and habitats, compensatory mitigation is provided for all adverse impacts that cannot be avoided, and the amount and degree of the alteration are limited to the minimum needed to accomplish the project purpose.

A. Developments that meet the reasonable use standards set forth in DMC Section 14.42.070

B. Relocation of streams, or portions of streams, when there is no other feasible alternative and when the relocation will result in equal or better habitat and water quality and quantity, and will not diminish the flow capacity of the stream or other natural stream processes, provided that the relocation has a state hydraulic project approval, all other applicable permits, and that relocation of the Snoqualmie River shall be prohibited.

C. Road, trail, bridge, and right-of-way crossings provided they meet the limitations within Table 6 and the following criteria:

1. There is no other feasible alternative route with less impact on sensitive areas.

2. The crossing minimizes interruption of natural processes such as the downstream movement of wood and gravel and the movement of all fish and wildlife. Bridges are preferred for all stream crossings and should be designed to maintain the existing stream substrate and gradient, provide adequate horizontal clearance on each side of the ordinary high water mark and adequate vertical clearance above ordinary high water mark for animal passage. If a bridge crossing is not feasible, culverts shall be designed according to applicable state and federal guidance criteria for fish passage as identified~~.~~ in Washington Department of Fish and Wildlife's Design of Road Culverts for Fish Passage (Bates et al., 2003) and/or National Marine Fisheries Services' Anadromous Salmonid Passage Facility Design (NMFS, 2008). ~~in fish passage design at road culverts, WDFW March 1999, and/or the National Marine Fisheries Service Guidelines for Salmonid Passage at Stream Crossings, 2000, (and subsequent revisions) and in accordance with a state hydraulic project approval~~. The applicant or property owner shall maintain fish passage through a bridge or culvert.

3. The city may require that existing culverts be removed, repaired, or modified as a condition of approval if the culvert is detrimental to fish habitat or water quality, and a feasible alternative exists.

4. Crossings shall be limited to the minimum width necessary. Common crossings are the preferred approach where multiple properties can be accessed by one crossing.

5. Access to private development sites may be permitted to cross streams, if there are no feasible alternative alignments. Alternative access shall be pursued to the maximum extent feasible, including through the provisions of RCW 8.24. Exceptions or deviations from technical standards for width or other dimensions, and specific construction standards to minimize impacts may be specified, including placement on elevated structures as an alternative to fill, if feasible.

D. Stormwater management facilities limited to open and vegetated detention and treatment facilities~~/treatment ponds, media filtration, facilities and infiltration basins~~ may be permitted in a standard stream buffer, subject to the limitations within Table 6 and all of the following standards. Such facilities are not permitted in the performance-based buffer in DMC Section 14.42.320(E), or in buffers reduced pursuant to DMC Sections 14.42.320(F) and (G).

1. The facility ~~is located in the outer fifty (50) percent of the standard stream buffer and~~ does not displace or impact a forested riparian community;

2. There is no other feasible location for the stormwater facility and the facility is located, constructed, and maintained in a manner that minimizes adverse effects on the buffer and adjacent sensitive areas;

3. The stormwater facility is designed to generally resemble natural wetlands, no access roadways, no retaining walls or slopes in excess of a 3:1 are within the buffer, and meets applicable city stormwater management standards and the discharge water meets state water quality standards;

4. Low impact development approaches have been considered and implemented to the maximum extent feasible.

E. Stormwater conveyance or discharge facilities such as dispersion trenches, level spreaders, and outfalls may be permitted in a fish and wildlife habitat conservation area buffer on a case-by-case basis when consistent with the limitations in Table 6 and when all of the following are met:

1. Due to topographic or other physical constraints there are no feasible locations for these facilities ~~in the outer buffer area or~~ outside the buffer;

2. The discharge is located as far from the ordinary high water mark as possible and in a manner that minimizes disturbance of soils and vegetation;

3. The discharge outlet is in an appropriate location and is designed to prevent erosion and promote infiltration;

4. The discharge meets freshwater state water quality standards, including total maximum daily load (TMDL) standards as appropriate at the point of discharge. Standards should include filtration through mechanical or biological means, vegetation retention, timely reseeding of disturbed areas, use of grass-lined bioswales for drainage, and other mechanisms as appropriate within approved stormwater "special districts."

F. Clearing and grading, when allowed as part of an authorized use or activity or as otherwise allowed in these standards, may be permitted provided that the following shall apply:

1. Grading is allowed only during the designated dry season, which is typically regarded as April 1st to October 1st of each year, provided that the city may extend or shorten the designated dry season on a case-by-case basis, based on actual weather conditions.

2. Appropriate erosion and sediment control measures shall be used at all times. The soil duff layer shall remain undisturbed to the maximum extent possible. Where feasible, disturbed topsoil shall be redistributed to other areas of the site.

3. The moisture-holding capacity of the topsoil layer shall be maintained by minimizing soil compaction or reestablishing natural soil structure and infiltrative capacity on all areas of the project area not covered by impervious surfaces.

G. Stream bank stabilization, shoreline protection, and public or private launching ramps may be permitted subject to all of the following standards:

1. Natural shoreline processes will be maintained to the maximum extent practicable. The activity will not result in increased erosion and will not alter the size or distribution of shoreline or stream substrate;

2. No adverse impact to fish or wildlife habitat conservation areas or associated wetlands will occur;

3. No alteration of juvenile fish migration corridors will occur;

4. No net loss of riparian habitat function will occur;

5. Nonstructural measures, such as placing or relocating the development further from the shoreline, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient;

6. Stabilization is achieved through bioengineering or soft armoring techniques in accordance with Washington Department of Fish and Wildlife's Integrated Streambank Protection Guidelines and an applicable hydraulic permit issued by the Washington Department of Fish and Wildlife;

7. Hard bank armoring may occur only when the property contains an existing permanent structure(s) that is in danger from shoreline erosion caused by riverine processes and not erosion caused by upland conditions, such as the alteration of natural vegetation or drainage, and the armoring shall not increase erosion on adjacent properties and shall not eliminate or reduce sediment supply;
8. Normal sloughing, erosion of steep bluffs, or shoreline erosion itself, without a scientific or geotechnical analysis, is not demonstration of need;
9. The armoring will not adversely affect fish and wildlife habitat conservation areas or mitigation will be provided to compensate for adverse effects where avoidance is not feasible.

H. Construction of trails may be permitted in a stream buffer subject to limitations within Table 6 and all of the following standards:

1. There is no other feasible alternative route with less impact on the sensitive area;
2. The trail minimizes disruption of natural processes, such as wood recruitment, and natural wildlife movement patterns;
3. Trails in riparian (stream) buffers shall be located on the outer portion ~~fifty twenty-five (5025) percent~~ of the standard buffer consistent with Table 6, except for limited viewing platforms and crossings; shall not exceed four (4) feet in width and shall be made of pervious material where feasible;
4. The trail is constructed and maintained in manner that minimizes disturbance of the buffer and associated sensitive areas;
5. Preference shall be given to community trails and trails constructed of pervious materials.

I. New utility lines and facilities may be permitted when all of the following criteria are met:

1. There is no feasible alternative outside of sensitive area buffers and impacts to fish and wildlife habitat shall be avoided to the maximum extent possible.
2. Where feasible, installation shall be accomplished by boring beneath the scour depth and of the stream or water body and the width of the channel migration zone where present.
3. The utilities shall cross streams at an angle greater than sixty (60) degrees to the centerline of the channel or perpendicular to the channel centerline whenever boring under the channel is not feasible.
4. Crossings shall be contained within the footprint of an existing road or utility crossing where possible.
5. The utility installation shall not increase or decrease the natural rate or opportunity of channel migration.

J. New public flood protection measures and expansion of existing ones may be permitted, subject to DMC Chapter 14.25, a state hydraulic project approval and other permits, provided that mitigation is provided to minimize adverse effects on stream hydrology and that bioengineering or soft armoring techniques shall be used where feasible. Hard bank armoring may occur only in situations where soft approaches do not provide adequate protection.

K. Instream structures, such as, but not limited to, high flow bypasses, dams, and weirs, shall be allowed only as part of a watershed restoration project as defined pursuant to and upon acquisition of any required state or federal permits. The structure shall be designed to avoid adverse effects on stream flow, water quality, or other habitat functions and values.

(Ord. 1056 § 1 Exh. A (part), 2007)

Table 6. Subbasin Management Group Alteration Standards [following table is all new – track changes reflect revisions within July 2017 draft]

Stream ~~Wetland~~ alteration allowances per DMC 14.42.33~~22~~0	**Subbasin Management Group**				
	1 – Protect/ Restore	**2A – Highest Conservation**	**2B – Moderate Conservation**	**2C – Least Conservation**	**3 – Urban Development**
Public roads, bridges, trails, and right-of-way crossings (DMC 14.42.330.C) – where allowance applies.	Applicable only with 50% additional mitigation per DMC 14.42.380	Applicable only with 25% additional mitigation per DMC 14.42.380	Applicable only with 10% additional mitigation per DMC 14.42.380	Applicable	Applicable
Stormwater management facilities (DMC 14.42.330.D) – outer portion (percent) of the standard stream buffer where facility may be allowed	Not allowed within buffer	~~10%~~Not allowed within buffer	~~20~~15%	~~30~~25%	~~40~~35%
Stormwater conveyance and/or discharge facilities (DMC 14.42.330.E) – outer portion (percent) of the standard stream buffer where facility may be allowed	Consistent with SMP standards	15%	25%	40%	50%
Passive recreation facilities, or trails (DMC 14.42.330.H) – outer portion (percent) of the standard buffer where facility may be allowed	Consistent with SMP standards	10%	20%	30%	40%

14.42.340 - ~~Habitat~~ Fish and wildlife habitat conservation areas—Ponds and lakes.

A. Buffer Measurement. The standard buffer shall be measured landward horizontally perpendicular to the shore of the pond or lake. The required buffer shall be extended to include any adjacent regulated wetland(s), landslide hazard areas and/or erosion hazard areas and required buffers, but shall not be extended across roads or other lawfully established structures or hardened surfaces that are functionally and effectively disconnected from the habitat, pond or lake.

B. Buffer Widths.

1. Lake Rasmussen—buffers shall extend fifty (50) feet from the ordinary high water mark;
2. Other lakes— buffers shall extend fifty (50) feet from the ordinary high water mark unless the director determines that a narrower or wider buffer is appropriate based on the results of a sensitive area study.

C. Allowed Uses. Allowed uses within natural ponds and their buffers shall be the same as those in DMC Section 14.42.330 for streams.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.350 - Fish and wildlife habitat conservation areas—Habitat corridors.

A. City-established fish and wildlife habitat corridors shall link sensitive areas and remaining undeveloped lands, maintaining physical connections for fish and wildlife across the city and associated subbasins, minimizing habitat fragmentation city-wide.

1. Figure ES-6 of the 2015 Comprehensive Plan (Environment and Sustainability Element) details the location of fish and wildlife habitat corridors.

2. All fish and wildlife habitat corridors shall be established with a 700-foot wide fish and wildlife habitat corridor management zone, extending 350-feet in all directions from the linear habitat corridors.

B. Corridor Management. Administrative rules established by the Director under the authority of DMC 14.42.150 shall be implemented and enforced to mitigate impacts of development activities within fish and wildlife habitat corridor management zones. Administrative rules for habitat corridor management shall:

1. Establish a uniform system to evaluate and rate existing corridor conditions surrounding a development site, and on-site conditions within a development site; and

2. Ensure that the extent of required management measures is commensurate with the extent and ecological quality of the project site area and the ecological quality of existing corridor linkages to off-site fish and wildlife habitat areas; and

3. Ensure that management measures are differentiated to account for the opportunities provided by larger scale development types, including subdivisions and binding site plans, compared to smaller developments.

C. Wherever measures to protect and/or restore habitat corridors are required, a Habitat Management Plan (HMP) shall be prepare. A HMP shall:

1. Document conditions of fish and wildlife habitat corridors based on the assessment required by administrative rules under DMC 14.42.350.B, and

2. Identify measures being implemented to comply with administrative rule requirements, including a site plan identifying locations, design, specification, and details as necessary for habitat corridor measures;

3. Be completed consistent with applicable requirements of DMC 14.42.370.

D. Development outside of a fish and wildlife habitat corridor.

1. Development on properties located entirely outside of designated habitat corridor management zones is not required to evaluate habitat conditions or implement habitat corridor management measures.

2. Applicants proposing development on properties located outside of designated habitat corridor management zones are encouraged to work with the City to minimize impacts to existing vegetation, habitat areas, and/or restore onsite habitat consistent with approaches in administrative rules established consistent with 14.42.350.B.

~~E. Development flexibilities for properties achieving and/or exceeding habitat corridor management measures. Any development proposal, whether required or electing to implement habitat corridor management measures consistent with administrative rules, shall be afforded development flexibilities consistent with the following:~~

1. ~~Development proposals that meet the minimum requirements for protection of habitat corridors shall be provided a XX% reduction in required rear-yard setbacks.~~

2. ~~Development proposals that exceed minimum requirements for protection of habitat corridors by 30% shall be provided an additional XX% reduction in required setbacks, which may be applied to either the rear-yard or front-yard.~~

~~OTHER INCENTIVE OPTIONS FOR CONSIDERATION:~~

- ~~Allowances for intrusions into required yard setbacks (decks, etc.)~~
- ~~Reduction in minimum lot size for subdivisions~~
- ~~Narrower streets (reduced infrastructure costs - BUT the City has challenges with on-street parking and maintaining access for safety… need to find balance)~~
  ~~*(some of this might provide opportunity to encourage LID approaches)*~~
- ~~True cluster development with centralized infrastructure (parking)~~
- ~~Cottage ordinance (City Council adopted as interim ordinance… will expire – may be extended)~~
- ~~Allowances for one-way streets~~
- ~~Other?~~

Commented [AB28]: Based on Advisory Group input and concerns, incorporating incentive approaches here has been removed.

Rationale: Given that there is uncertainty about how implementation of Habitat Corridor Management will play out on the ground, and potential opportunity for developers to "game" the HCM credit system and get additional density in return, at least for initial implementation of habitat corridor protection – effective incentives are likely to be challenging

ONE QUESTION BASED ON UPDATED SITE DENSITY CALCULATION APPROACH – Does the reduced maximum density that would be provided for Groups 2B, 2A, and 1 warrant consideration of incentives for habitat corridor protection in these areas?

14.42.~~350~~ 360 - Other fish and wildlife habitat conservation areas.

A. Definition and Buffers. Protection standards for fish and wildlife habitat conservation areas other than streams and lakes are as provided in the table below.

Fish and Wildlife Habitat Conservation Area	Buffer Requirement
Areas with which federally listed threatened or endangered species have a primary association. State priority habitats and areas with which priority species have a primary association. A primary association means a critical component(s) of the habitats of a species, which, if altered, may reduce the likelihood that the species will maintain and reproduce over the long term.	Buffers shall be based on recommendations provided by the Washington Department of Fish and Wildlife Priority Habitat Species (PHS) Program; provided that where no such recommendations are available, the buffer width shall be determined based on published literature concerning the species/habitat(s) in question and/or the opinions and recommendations of qualified professional with appropriate expertise.
Natural area preserves and natural resource conservation areas	Buffers shall be based on recommendations provided by site managers provided that the management strategies are considered effective and within the scope of this chapter.
Locally important species and habitat areas	The need for and dimensions of buffers for locally important species or habitats shall be determined on a case-by-case basis, according to the needs of

	specific species or habitat area of concern. The director shall coordinate with King County, the Washington Department of Fish and Wildlife and other state, federal or tribal agencies in these instances, and shall use Washington Department of Fish and Wildlife (WDFW) PHS management recommendations when available.

B. Alterations that occur within a locally important habitat area or that may affect a locally important species as defined herein shall be subject to review on a case-by-case basis. The director shall have the authority to require an assessment of the effects of the alteration on species or habitats and may require mitigation to ensure that adverse effects do not occur. This standard is intended to allow for flexibility and responsiveness with regard to locally important species and habitats.

(Ord. 1056 § 1 Exh. A (part), 2007)

~~14.42.360 - Fish and wildlife habitat conservation areas—Habitat corridors.~~

~~A. City-established fish and wildlife habitat corridors link sensitive areasundeveloped landsmaintain physical connections for fish and wildlife. minimiz habitat fragmentation city-wide.~~

~~1. Figure of. details the location of fish and wildlife habitat corridors.~~

~~B.~~

~~1.~~

~~. , a Habitat Management Plan (HMP) A HMPocument condition of fish and wildlife habitat corridors~~

~~. Development outside of a fish and wildlife habitat corridor.~~

~~. Development located outside of. corridor is not required to evaluate habitat conditions.~~

~~. Applicants are encouraged to work with the City to minimize impacts to existing vegetation or restore onsite habitat.~~

14.42.~~360~~ 370 - Fish and wildlife habitat conservation areas—Review and reporting requirements.

A. When city sensitive area maps or other sources of credible information indicate that a site proposed for development or alteration may contain fish and wildlife habitat conservation areas or be within the buffer of a fish and wildlife habitat conservation area, the director shall require a site evaluation (field investigation) by a qualified professional or other measures to determine whether or not the species or habitat is present and if so, its relative location in relation to the proposed project area or site. If no fish and wildlife habitat conservation areas are present, then review will be considered complete. If the site evaluation determines that the species or habitat is present, the director shall require a sensitive areas ~~assessment report~~study (habitat assessment).

B. Waivers. The director may waive the ~~report~~ study -requirement for a single-family development that involves less than five thousand (5,000) square feet of clearing and/or vegetation removal and will

not directly disturb the designated stream or pond buffer area, designated species, or specific areas or habitat features that comprise the fish and wildlife habitat conservation area (nest trees, breeding sites, etc.) as indicated by a site plan or scaled drawing of the proposed development.

C. Habitat Assessment. In addition to the general sensitive area study requirements of DMC 14.42.060, sensitive area studies for fish and wildlife habitat conservation areas must meet the requirements of this section. A sensitive areas study for a fish and wildlife habitat conservation area shall contain an assessment of habitats including the following site- and proposal- related information at a minimum: ~~The sensitive areas report shall describe the characteristics of the subject property and provide other pertinent information including but not limited to:~~

1. Description of habitats and species; review of historical aerial photos or other available public records; description of existing topography, hydrology, soils, and vegetative features; existing physical features of the site such as buildings, fences roads, parking lots, utilities, etc.;

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

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

~~2~~4. The report shall specifically describe proposed development activities, including, but not limited to: type and extent of clearing and grading, temporary construction activities, type and extent of permanent structures;

5. The report shall also describe, at a minimum, the proposed development's direct and indirect potential impacts on: fish and wildlife species, habitat areas, and/or buffers, including the area of direct disturbance; natural drainage or infiltration patterns' surface or subsurface hydrology; and local and regional stormwater management. The analysis shall consider the effects of increased noise, light or human intrusion;

6. A discussion of measures, including avoidance, minimization, and mitigation, proposed to preserve existing habitats and restore any habitat that was degraded prior to the current proposed land use activity and to be conducted in accordance with mitigation sequencing [DMC 14.42.130(B)]; and~~and measures to avoid, minimize, and/or mitigate adverse impacts of the proposed development;~~

7. A discussion of ongoing management practices that will protect habitat after the project site has been developed, including proposed monitoring and maintenance programs.

~~3. The report shall also describe, at a minimum, the proposed development's impact on: fish and wildlife species, habitat areas, and/or buffers, including the area of direct disturbance; natural drainage or infiltration patterns' surface or subsurface hydrology; and local and regional stormwater management. The analysis shall consider the effects of increased noise, light or human intrusion.~~

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.~~370~~ 380 - Fish and wildlife habitat conservation areas—Management standards.

A. Activities that adversely affect fish and wildlife habitat conservation areas and/or their buffers should generally be avoided through site design, including clustering. Unavoidable impacts to designated species or habitats shall be compensated for through habitat creation, restoration and/or enhancement to achieve no net loss of habitat functions and values in accordance with the purpose and goals of this chapter.

B. When compensatory mitigation is required, the applicant shall submit a mitigation plan in accordance with Section 14.42.130 with sufficient information to demonstrate that the proposed activities are

logistically feasible, constructible, ecologically sustainable, and likely to succeed. Specific information to be provided in the plan shall include, but not be limited to:

1. General description and scaled drawings of the activities proposed including, but not limited to, to clearing, grading/excavation, drainage alterations, planting, invasive plant management, installation of habitat structures, irrigation, and other site treatments associated with the development activities and proposed mitigation action(s);
2. A description of the functions and values that the proposed mitigation area(s) shall provide, together with a description of required and an assessment of factors that may affect the success of the mitigation program; and
3. A description of known management objectives for the species or habitat.

C. Required mitigation shall be completed as soon as possible following activities that will disturb fish and wildlife habitat conservation areas and during the appropriate season. Mitigation shall be completed prior to use or occupancy of the activity or development. Construction of mitigation projects shall be timed to reduce impacts to existing wildlife and flora.

D. The director shall have the authority to require a monitoring plan with specific measurable performance standards that the proposed mitigation action(s) shall achieve together with a description of how the mitigation action(s) will be evaluated and monitored. Performance standards shall be project-specific and use best available science to aid the department in evaluating whether the performance standards are being met. The performance standards shall be tied to and directly related to the mitigation goals and objectives. Monitoring reports shall be submitted on an annual basis for a minimum of five years and up to ten years, or until the department determines that the mitigation project has achieved success criteria based on the performance standards.

E. A contingency plan to guide decisions for revising compensatory mitigation plans and implementing measures to address both foreseeable and unforeseen circumstances that adversely affect compensatory mitigation success. Contingency plans will necessarily lack specific measures to address underperformance, but should identify funding sources and responsible parties. Specific corrective measures shall be developed if and when underperformance details become clearer.~~The director shall have authority to require monitoring of mitigation activities and submittal of annual monitoring reports to ensure and document that the goals and objectives of the mitigation are met. The frequency and duration of the monitoring shall be based on the specific needs of the project as determined by the director.~~

F. All mitigation areas and associated buffers shall be permanently protected and managed to prevent degradation and ensure protection of FWHCA functions and values into perpetuity. Permanent protection shall be achieved through a site protection mechanism (e.g., conservation easement, restrictive covenant) in accordance with DMC Section 14.42.100.

~~(~~Ord. 1056 § 1 Exh. A (part), 2007)

14.42.400 - Geologically hazardous areas—Designation and mapping.

Commented [AB29]: All revision in this section are presented for the first time within this draft.

Revisions completed by The Stratum Group (Dan McShane)

A. The purpose of this chapter is to reduce risks to human life and safety and reduce the risk of damage to structures and property from geologic hazards, and to allow for natural geologic processes supportive of fish and wildlife habitat. It is also meant to regulate and inform land use and planning decisions. It is recognized that the elimination of all risk from geologic hazards is not practical to achieve but the purpose of this chapter is to reduce the risk to acceptable levels. The approximate location and extent of known and suspected geologically hazardous areas are shown in maps created and/or published by the U.S. Geological Survey, Washington State Department of Natural Resources, King County, City of Duvall, as well as other reputable sources. Other, unmapped geologically hazardous areas exist in Duvall including those that are designated in this chapter. This chapter does not imply that land outside mapped geologically hazardous areas or uses permitted within such areas will be without risk. This chapter shall not create liability

on the part of the city or any officer or employee thereof for any damages that result from reliance on this chapter or any administrative decision lawfully made hereunder.

B. For purposes of this chapter, geologically hazardous areas shall include all of the following:

1. Landslide Hazard Areas. Landslide hazard areas include areas susceptible to landslides because of any combination of bedrock, soil, slope (gradient), slope aspect, structure, hydrology, or other physical factors. ~~Landslide hazard areas shall include areas susceptible to landslides because of any combination of bedrock, soil, slope (gradient), slope aspect, structure, hydrology, or other physical factors.~~ Potential landslide hazard areas exhibit one or more of the following characteristics:

   a. Slopes exceeding forty (40) percent with a vertical relief of ten (10) or more feet except ~~areas composed of competent rock and~~ properly engineered slopes designed and approved by a geotechnical engineer licensed in the state of Washington and experienced with the site geologic conditions;

   b. Potentially unstable slopes resulting from rapid river or stream incision, river or stream bank erosion include slopes exceeding ten (10) feet in height adjacent to streams, and lakes with more than a thirty (30) percent gradient;

   c. Slopes between fifteen (15) and forty (40) percent in which the slope intersects a geologic contact between ~~that have~~ a relatively permeable geologic unit overlying a relatively impermeable unit and have springs or groundwater seeps. This includes slopes where the contact daylight is obscured by soil cover;

   d. Areas that have shown evidence of historic failure, deformation, or instability, including but not limited to back-rotated or down-dropped benches on slopes; areas with structures that exhibit structural damage such as settling and racking of building foundations; ~~and~~ areas that have toppling, leaning, or bowed trees caused by ground surface movement, or areas with ground fracturing; ~~caused by ground surface movement;~~

   e. Areas that show past sloughing or calving of bluff sediments, resulting in a vertical or steep ~~bluff face~~ slope with little or no vegetation;

   f. Deep-seated landslide areas characterized by one or more of the following features: scalloped ridge crests at the top of the slope, crescent shaped depressions, ground fractures, head scarps, side scarps, ponds or sag areas on mid slopes, benches and scarps on mid slope areas, landslide toes, or hummocky terrain. These features may be evident in aerial images, topographic maps, lidar imagery or on the ground.

   g. Areas below unstable slopes or that have been identified as landslide hazard areas that could be impacted by landslide run out.

   ~~Areas that are at risk of mass wasting due to seismic forces;~~

   ~~g. Areas of historical landslide movement mapped by the Department of Natural Resources slope stability mapping as unstable ("U" or class 3), unstable old slides ("UOS" or class 4), or unstable recent slides ("URS" or class 5);~~

   h. Areas designated as quaternary slumps, earthflows, mudflows, alluvial fans, ~~lahars,~~ or landslides on maps published by the U.S. Geological Survey, ~~or~~ Washington State Department of Natural Resources~~.~~, King County mapping of Potential Landslide Hazard Areas along the River Corridors of King County or other reputable sources;

2. Seismic Hazard Areas. The City of Duvall is located in a seismically active area that will be subject to ground motion and potentially secondary hazards caused by shaking. Seismic risk is partially addressed in the International Building Code (IBC) or IRC. Additional seismic hazard areas for the purpose of this chapter include areas designated as having "high" or "moderate to high" liquefaction susceptibility by the Landslide Susceptibility Map of King County, WA (Palmer and others, 2004) or other credible sources.

Commented [a30]: STRATUM REVIEW: Redundant

Commented [a31]: STRATUM REIVEW: No significant bedrock in Duvall

Commented [a32]: STRATUM REVIEW: Covered by other sections of this chapter

Commented [a33]: STRATUM REVIEW: Not applicable to Duvall

~~Areas subject to a severe risk of earthquake damage as a result of seismically induced ground shaking, differential settlement, slope failure, settlement, lateral spreading, mass wasting, surface faulting or soil liquefaction.~~
~~Areas designated as having "high" or "moderate to high" liquefaction susceptibility by the Landslide Susceptibility Map of King County, WA (Palmer and others, 2004) or other credible sources.~~

~~Seismic hazard areas include areas subject to a severe risk of earthquake damage as a result of seismically induced ground shaking, differential settlement, slope failure, settlement, lateral spreading, mass wasting, surface faulting or soil liquefaction.~~

3.Erosion Hazard Areas. Erosion hazard areas are those areas of Duvall identified by the U.S. Department of Agriculture's Natural Resources Conservation Service as having a "severe" or "very severe" rill and inter-rill erosion hazard. Erosion hazard areas are also those areas impacted by shoreland and/or stream bank erosion.~~containing soils that may experience severe to very severe erosion~~ ~~hazard including the following:a.Moderate surface erosion hazard areas, which are slopes greater than fifteen (15) percent and less than forty (40) percent with soils identified by the Natural Resources Conservation Service as having a "severe," or "very severe" rill and inter-rill erosion hazard because of natural characteristics, including vegetative cover, soil texture, slope, gradient, and rainfall patterns, or human induced changes to natural characteristics. This group of soils includes but is not limited to the following:~~

Commented [DM34]: It is our view that erosion hazards can readily be managed by stormwater plans and fill/grade requirements.

Specifically, Chapter 9.06 (Storm Drainage Utility) requires developments to address on-site and down-stream erosion

~~Alderwood gravelly sandy loam (Agd);~~

~~Alderwood-Kitsap (AkF);~~

~~Beausite gravelly sandy loam (BeD and BeF);~~

~~Kitsap silty loam (KpD);~~

~~Ovall gravelly sandy loam (OvD and OvF);~~

~~Ragnar fine sandy loam (RaD);~~

~~Ragnar-Indianola Association (RdE); or~~

~~Any occurrence of River Wash (Rh).~~

~~b. Severe surface erosion hazard areas are slopes greater than forty (40) percent with the same soils as identified in subsection (A)(3)(a) of this section.~~

~~B. The approximate location and extent of known and suspected geologically hazardous areas are shown the city's sensitive area maps. Other, unmapped geologically hazardous areas may exist in Duvall. This chapter does not imply that land outside mapped geologically hazardous areas or uses permitted within such areas will be without risk. This chapter shall not create liability on the part of the city or any officer or employee thereof for any damages that result from reliance on this chapter or any administrative decision lawfully made hereunder.~~

~~(Ord. 1056 § 1 Exh. A (part), 2007)~~

14.42.420 - Geologically hazardous areas—General standards.

The following requirements shall apply to all activities in geologically hazardous areas:

A. Alterations including but not limited to all new development, construction of buildings, driveways, structures, building additions, and other features shall be directed toward portions of parcels or parcels under contiguous ownership that are not subject to, or at risk from, geologic hazards and/or are outside any associated buffer established by this chapter.

B. Critical facilities, include, but are not limited to, schools, nursing homes, hospitals, police, fire and emergency response installations, and installations that produce, use, or store hazardous materials shall not be located in geologically hazardous areas if there is a feasible alternative location outside geologically hazardous areas that would serve the intended service population. If allowed, the facility shall be designed and operated to minimize the risk and danger to public health and safety to the maximum extent feasible.

C. Land that is located wholly within a landslide or erosion hazard area, or its buffer may not be subdivided to create buildable parcels entirely within the hazardous area. Land that is located partially within a hazard area or its buffer may be divided provided that each resulting lot has sufficient buildable area outside of the hazardous area with provision for drainage, erosion control and related features that will not adversely affect the hazard area or its buffer.

D. Allowed developments shall be engineered and/or constructed to minimize risk to health and safety, and protect the building and occupants from the hazard, and to avoid or compensate for impacts to other sensitive areas such as wetlands and fish and wildlife habitat conservation areas.

E. Clearing and grading within landslide hazard areas shall be allowed from May 1st to September 30th of each year provided that the city may extend or shorten the dry season on a case-by-case basis depending on actual weather conditions, except that timber harvest, not including brush clearing or stump removal, may be allowed pursuant to an approved forest practice permit issued by the Washington State Department of Natural Resources. Clearing and grading may be allowed between October 1st and April 30th only upon written approval by the department of public works.

F. Utility lines and pipes shall be permitted in ~~erosion and~~ landslide hazard areas only when the applicant demonstrates that no other practical alternative is available. The line or pipe shall be located above ground and properly anchored and/or designed so that it will continue to function in the event of an underlying slide. Stormwater conveyance shall be allowed only through a high-density polyethylene pipe with fuse-welded joints, or similar product that is technically equal or superior.

~~G.Point discharges from surface water facilities and roof drains onto or upstream from an erosion or landslide hazard area shall be prohibited unless conveyed downslope to a point where there are no erosion hazards and discharged in accordance with standards for wetlands and streams.~~

G. Access roads and trails that are engineered and built to standards that avoid the need for major repair or reconstruction beyond that which would be required in nonhazard areas may be permitted only if the applicant demonstrates that no other feasible alternative exists, including through the provisions of RCW 8.24. If such access through sensitive areas is granted, exceptions or deviations from technical standards for width or other dimensions, and specific construction standards to minimize impacts may be specified.

H~~G~~. On-site sewage disposal systems, including drain fields, shall be prohibited within erosion and landslide hazard areas and related buffers.

~~J~~I. Structures and improvements shall be designed to meet the following guidelines:

1. Minimize alterations to the natural contour of the slope, and foundations shall be tiered where possible to conform to existing topography;
2. Structures and improvements shall be located to preserve the most sensitive portion of the site and its natural landforms and vegetation;
3. The use of retaining walls that allow the maintenance of existing natural slope area is preferred over graded artificial slopes; and
4. Development shall be designed to minimize impervious lot coverage.

~~K~~J. A qualified professional, licensed in the state of Washington, shall review projects in geologically hazardous areas to ensure that they are ~~properly~~ designed and constructed to minimize the hazard.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.430 - Geologically hazardous areas—Landslide hazard area standards.

A. The City recognizes that landslide hazard areas and associated buffers shall be generally be protected from development and alteration, including modification of topography and vegetation in order to provide multiple benefits including reduction of stormwater runoff, reduction of erosion potential, and long-term stability of sensitive slopes. Unless otherwise provided or as part of an approved alteration, removal of vegetation from a landslide hazard area or related buffer shall be prohibited. Maintenance of hydrologic mature trees that provide a strong root cohesion base and minimize groundwater infiltration should be prioritized. The landslide and buffer shall include woody vegetation adequate to stabilize the soil and minimize mass wasting. If the designated hazard or buffer area lacks adequate woody vegetation, the director shall have the authority to require vegetation restoration or other measures to improve slope stability.

Modification of topography and vegetation in landslide hazard areas should be stringently limited to provide multiple benefits including reduction of stormwater runoff, reduction erosion potential and long-term stability of sensitive slopes. Unless otherwise provided or as part of an approved alteration, removal of vegetation from a landslide hazard area or related buffer shall be prohibited. The landslide and buffer shall include woody vegetation adequate to stabilize the soil and prevent mass wasting. If the designated buffer area lacks adequate woody vegetation, the director shall have the authority to require vegetation restoration or other measures to improve slope stability.

B. Alterations of a landslide hazard area and/or buffer may only occur for activities for which a sensitive area report is submitted and meets the following criteria:

1. Reasonable development cannot be accommodated on portions of the site not subject to landslide hazards. Structures and improvements shall be clustered to avoid geologically hazardous areas and other sensitive areas. Development within buffer areas shall be preferred over development within landslide hazard areas;

2. Areas that are directly adjacent to a wetland, stream, pond or lake are not eligible for alteration of landslide areas with a gradient of forty (40) percent or more but may be subject to alteration of buffers;

3. The development will not increase surface water discharge or sedimentation to adjacent properties beyond predevelopment conditions;

4. The development will not increase erosion or risk, or sedimentation, risk or delivery, decrease slope stability, or result in greater risk or a need for increased buffers on neighboring properties;

5. Such alterations will not adversely impact other sensitive areas;

6. For sites requiring slope mitigation and/or engineering solutions for stabilization, tThe proposed development shall not decrease the factor of safety for landslide occurrences below the limits of 1.5 for static conditions and 1.2 for dynamic conditions. Analysis of dynamic conditions shall be based on a minimum horizontal ground acceleration as established by the current version of the International Building Code. Measures to maintain slope stability, such as drainage systems, must be of a design that will assure operation without facilities requiring regular maintenance that would jeopardize stability if the facility fails.

C. Point discharges from surface water facilities and roof drains onto or upstream from a potential landslide hazard area shall be prohibited unless conveyed downslope to a point where there are no erosion hazards and discharged in accordance with standards for wetlands and streams.

D. Utility lines and pipes that are above-ground, properly anchored and/or designed may be permitted when the applicant demonstrates that no other feasible alternative is available to serve the affected population and that all reasonable measures have been taken to minimize risks and other adverse effects. It must be demonstrated that they will continue to function in the event of a slope failure or movement of the underlying materials and will not increase the risk or consequences of static or seismic slope instability or result in a risk of mass wasting.

E. Buffer Requirements. A buffer shall be established from all edges of landslide hazard areas. The size of the buffer shall be determined by the public works director based on the findings and recommendations of a qualified professional. The buffer may be increased where the public works director determines a larger buffer is necessary to prevent risk of damage to proposed and existing development.

1. The goal of the buffer is to eliminate or minimize the risk of property damage, death, or injury resulting from landslides. caused in whole or part by the development, based upon review of and concurrence with a sensitive area report prepared by a qualified professional.

2. The buffer size shall include consideration of the hydrologic conditions of landslide hazard areas including any hydrologic contribution of development or construction to the landslide hazard areas or areas above or below the landslide hazard areas that may affect slope stability of the landslide hazard area or landslide runout dynamics.

3. The buffer size shall include consideration of the vegetation on landslide hazard areas and in areas above and below the landslide hazard area that may affect the slope stability of the landslide hazard area or landslide runout dynamics. The public works director shall have the authority to require vegetation or other measures to protect and improve slope stability and shall have the authority to require a notice on the title conservation easement or other method to ensure vegetation is maintained.

4. Minimum buffer. 1.Minimum Buffer.a.TFor all development proposals, the minimum buffer width from the top and toe of a landslide hazard area slope shall be designed to protect persons and property from damage due to catastrophic slope failure and slope retreat over the lifetime of the use and provide an area of vegetation to promote shallow stability, control erosion and promote multiple benefits to wildlife and other resources. The buffer distance from the top of slope shall be equal to the greater of:i.The distance from the toe of slope upslope at a slope of 2:1 (horizontal to vertical) to a point that intersects with the site's ground elevation; or ii.A horizontal distance from the top of the slope equal to the vertical height of the slope;oriii.a minimum of fFifty (50) feet. from the top of the slope.b.The buffer from the toe of a slope shall provide for the safety of persons and property from the run-out resulting from slope failure and shall be the greater of:i.A horizontal distance equal to the vertical height of the slope; orii.Fifty (50) feet from the toe of the slope.2.Buffer Reduction. The minimum buffer width may be reduced to a minimum of ten (10) feet based on analysis of specific development plans provided by a qualified professional that demonstrates to the public works director's satisfaction that the reduction will adequately protect the proposed development, adjacent developments, uses and other nearby sensitive areas, and will not result in reduced slope stabilityconsistent with criteria E.1. through E.3 of this subsection.

3.Increased Buffer. The buffer may be increased where the public works director determines a larger buffer is necessary to prevent risk of damage to proposed and existing development.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.440 - Geologically hazardous areas—Erosion hazard areas standards.

Commented [AB35]: See earlier comment from D. McShane – Erosion hazard protections separate from clearing and grading and Stormwater standards are generally not necessary. Section significantly reduced.

A. Site Plan Application Review. For site plan applications overlapping potential erosion hazard areas, the public works director shall require sufficient technical information on potential erosion hazards, including any potential on-site and off-site impacts, to ensure that future site development would not increase potential for erosion and would be consistent with DMC Chapter 10.12 (Clearing and Grading) and DMC Chapter 9.06 (Storm Drainage Utility).

B. Erosion and Sediment Control Plan. Erosion and sediment control plan requirements set forth in DMC Chapter 9.06 shall be required to ensure potential erosion hazards are addressed during project construction.

~~A.Modification of topography and vegetation in erosion hazard areas shall be:~~

~~1.Minimized in moderate surface erosion areas retained to provide multiple benefits including reduction of stormwater runoff and reduction erosion potential;~~

~~2.Prohibited in severe erosion areas to provide multiple benefits including reduction of stormwater runoff and reduction erosion potential and long-term stability of sensitive slopes in all but exceptional cases. The severe erosion hazard area and buffer shall include woody vegetation and undergrowth adequate to stabilize the soil and prevent erosion. If the designated erosion hazard area and buffer area lacks adequate woody vegetation, the public works director shall have the authority to require vegetation restoration other measures to improve slope stability.~~

~~B.Development within surface erosion hazard areas and buffers may be allowed according to the following criteria:~~

~~1.For moderate surface erosion hazard areas, development is allowed if the criteria in DMC Sections 14.42.420 and 14.42.430(B)(1) through (5) are met.~~

~~2.For severe surface erosion hazard areas, development is allowed if additional criteria in DMC Sections 14.42.420 and 14.42.430(B)(1) through (6) are met.~~

~~C.Buffer Requirements. Buffer requirements are as follows~~:

~~1.There are no buffer areas required for moderate surface erosion hazard areas.~~

~~2.Buffer areas for severe surface erosion hazard areas are the same as those designated for landslide hazards in DMC(C).~~

~~(Ord. 1056 § 1 Exh. A (part), 2007)~~

14.42.450 - Geologically hazardous areas—Seismic hazard areas standards.

Development may be allowed in seismic hazard areas when all of the following apply:

A. Structures in seismic hazard areas shall conform to applicable analysis and design criteria of the International Building Code.

B. Public roads, bridges, utilities and trails shall be allowed when there are no feasible alternative locations and geotechnical analysis and design are provided that ensure the roadway, bridge and utility structures and facilities will not be susceptible to damage from seismic induced ground deformation. Mitigation measures shall be designed in accordance with the most recent version of the American Association of State Highway and Transportation Officials (AASHTO) Manual or other appropriate document.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.460 - Geologically hazardous areas review and reporting requirements.

A. When city, county, state or other sensitive area maps or other sources of credible information indicate that a site proposed for development or alteration is or may be located within a geologically hazardous area or could impact a geologic hazard area the director shall have the authority to require the submittal of a geologic ~~al~~ hazard assessment report.

B. A geologic~~al~~ hazard assessment report is an investigation process to evaluate the geologic characteristics of the subject property and adjacent areas. The geological assessment shall include field investigation and may include the analysis of historical aerial photographs and lidar

derived images, review of public records and documentation, and interviews with adjacent property owners. Geologic hazard assessment reports shall be prepared, stamped, and signed by a qualified professional. A geological assessment for a specific site may be valid for a period of up to five years when the proposed land use activity and site conditions affecting the site are unchanged. However, if any surface and subsurface conditions associated with the site change during that five-year period, the applicant may be required to submit an amendment to the report. The report shall include the following, provided that the director may determine that any portion of these requirements is unnecessary given the scope and/or scale of the proposed development:

1. Include a discussion of all geologically hazardous areas on the site and any geologically hazardous areas off site potentially impacted by the proposed project. If the affected area extends beyond the subject property, the geology hazard assessment may utilize existing data sources pertaining to that area;

2. Clearly state that the proposed project will not decrease slope stability or pose an unreasonable threat to persons or property either on or off site and provide a rationale as to those conclusions based on geologic conditions and interpretations specific to the project;

3. Provide adequate information to determine compliance with the requirements of this article;

4. Generally follows the guidelines as applicable set forth in the Washington State Department of Licensing Guidelines for Preparing Engineering Geology Reports in Washington (2006). In some cases, such as when it is determined that no landslide or erosion risk is present, a full report may not be necessary to determine compliance with this article, and in those cases a letter or abbreviated report may be provided.

5. If a landslide hazard is identified, provide minimum setback recommendations for avoiding the landslide or erosion hazard, recommendations on stormwater management and vegetation management and plantings, other recommendations for site development so that the frequency or magnitude of landsliding or erosion on or off the site is not altered, and recommendations are consistent with this article.

6. For projects in or affecting landslide hazard areas the report shall also include:

   a. Assessments and conclusions regarding slope stability for both the existing and developed conditions including the potential types of landslide failure mechanisms (e.g., debris flow, rotational slump, translational slip, etc.) that may affect the site. The stability evaluation shall also consider dynamic earthquake loading, and shall use a minimum horizontal acceleration as established by the current version of the International Building Code.

   b. Description of the run-out hazard of landslide debris to the proposed development that starts upslope (whether part of the subject property or on upslope properties) and/or the impacts of landslide run-out on down slope properties and sensitive areas.

7. For projects in seismic hazard areas, the report shall also include a detailed engineering evaluation of expected ground displacements or other liquefaction and/or dynamic settlement effects and proposed mitigation measures to ensure an acceptable level of risk for the proposed structure type or other development facilities such as access roads and utilities.

~~A description of which areas on the site, surrounding areas that influence or could be influenced by the site, or areas within three hundred (300) feet of the site meet the criteria for geologically hazard areas as set forth in DMC Section 14.42.400.~~

~~2.A scaled site plan showing:~~

~~a.The type and extent of geologic hazard areas, and any other sensitive areas, and buffers on, adjacent to or that are likely to impact or influence the proposal; including properties upslope of the subject site;~~

b.The location of existing and proposed structures, fill, access roads, storage of materials, and drainage facilities, with dimensions indicating distances to the floodplain;

c.The existing site topography preferably accurate to within two-foot contours; and

d.Clearing limits.

3.A description of the site features, including surface and subsurface geology, hydrology, soils, and vegetation found in the project area and in all hazard areas addressed in the report. This may include surface exploration data such as borings, drill holes, test pits, wells, geologic reports, and other relevant reports or site investigations that may be useful in making conclusions or recommendations about the site under investigation.

4.A description of the processes affecting the property or affected by development of the property including soil erosion, deposition, or accretion.

5.A description of the vulnerability of the site to seismic and other geologic processes and a description of any potential hazards that could be created or exacerbated as a result of site development.

6.A description and analysis of the risk associated with development prohibitions and buffers associated with this code and the level of risk associated with alternative proposals for development within or with less setback from the area of geological hazard.

7.A description and analysis of the risk associated with the measures proposed to mitigate the hazards, ensure public safety, and protect property and other sensitive areas.

8.For projects in or affecting landslide hazard areas the report shall also include:

a.Assessments and conclusions regarding slope stability for both the existing and developed conditions including the potential types of landslide failure mechanisms (e.g., debris flow, rotational slump, translational slip, etc.) that may affect the site. The stability evaluation shall also consider dynamic earthquake loading, and shall use a minimum horizontal acceleration as established by the current version of the International Building Code.

b.Description of the run-out hazard of landslide debris to the proposed development that starts upslope (whether part of the subject property or on a neighboring property) and/or the impacts of landslide run-out on down slope properties and sensitive areas.

c.Recommended landslide hazard buffer width per the results of the assessment and the provisions within this code.

9.For projects in seismic hazard areas the report shall also include a detailed engineering evaluation of expected ground displacements or other liquefaction and/or dynamic settlement effects and proposed mitigation measures to ensure an acceptable level of risk for the proposed structure type or other development facilities such as access roads and utilities.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.500 - Flood hazard areasFrequently Flooded Areas—Designation and mapping.

lood hazardFrequently flooded areas are those areas of Duvall subject to inundation by the base flood. Management of flood hazardfrequently flooded areas shall be in accordance with DMC Chapter 14.84 of this title, in addition to the following provisions:

A. Compensatory floodplain storage shall be provided for all development activities that require floodplain fill, consistent with applicable requirements of DMC Chapter 14.78 (Shoreline Management).

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.600 - Critical aquifer recharge areas—Designation and mapping.

A. Critical aAquifer recharge areas (CARAs) susceptible to degradation or depletion because of hydrogeologic characteristics are those areas meeting the criteria established by the state Department of Ecology *Critical Aquifer Recharge Areas – Guidance Document, January 2005, Publication #05-10-028* (Guidance Document for the Establishment of Sensitive Aquifer Recharge Area Ordinances, July 2000, Publication No. 97-30, Version 4.0). The approximate location and extent of CARAs are shown on the City sensitive areas inventory map for CARAs. CARAs Sensitive aquifer recharge areas shall be classified as follows:

1. Low susceptibility areas—areas underlain by glacial till, till-like soils; areas outside the aquifer recharge area identified by King County; and areas within the five-to ten (10) year travel time zone for designated wellhead protection areas;
2. Moderate susceptibility—areas within the aquifer recharge area identified by King County; and areas within the one- to five-year travel time zone for designated wellhead protection areas;
3. High susceptibility—areas within the zero- to one-year travel time zone for zone for designated wellhead protection areas.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.610 - Critical aquifer recharge areas standards.

A. The following developments and uses are prohibited in critical aquifer recharge areas:

1. New landfills, including hazardous or dangerous waste, municipal solid waste, special waste, wood waste of more than two thousand (2,000) cubic yards, and inert and demolition waste landfills.
2. Underground Injection Wells. Class I, III, and IV wells and subclasses 5F01, 5D03, 5F04, 5W09, 5W10, 5W11, 5W31, 5X13, 5X14, 5X15, 5W20, 5X28, and 5N24 of Class V wells.
3. Metals and hard rock mining and new sand and gravel mining in sensitive aquifer recharge areas determined to be highly susceptible, provided that such activities are permitted.
4. Wood treatment facilities that allow any portion of the treatment process to occur over permeable surfaces (both natural and manmade).
5. Facilities that store, process, or dispose of chemicals containing perchloroethylene (PCE), benzene, ethyl-benzene, toluene, and xylene (BTEX), or methyl tertiary butyl (MtBE).
6. Facilities that store, process, or dispose of radioactive substances.
7. Activities that are not connected to an available sanitary sewer system and are associated with sole source aquifers.
8. 7. Other activities that the director determines would significantly degrade groundwater quality and/or reduce the recharge to aquifers currently or potentially used as a potable water source or that may serve as a significant source of base flow to a regulated stream. The determination must be made based on credible scientific information.

14.42.620 – Critical aquifer recharge areas allowed activities.

The following activities are allowed in critical aquifer recharge areas pursuant to this Section, and do not require submission of a critical area report:

A. Construction of structures and improvements, including additions, resulting in less than a five percent (5%) or 2,500 square foot (whichever is greater) increase in total site impervious surface area, and that does not result in a change of use or increase the use of a hazardous substance.

B. Development and improvement of parks, recreation facilities, open space, or conservation areas resulting in less than five percent (5%) increase in total site impervious surface area, and that do not increase the use of a hazardous substance.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.630 - Critical aquifer recharge areas review.

A. For all proposed activities exceeding thresholds and limits identified by 14.42.620 and proposed within a critical aquifer recharge area, a sensitive areas report, prepared by a qualified professional, shall contain a level one (1) hydrogeological assessment. Additionally, level two (2) hydrogeological assessment shall be required for any of the following proposed activities:

1. Activities that include the use of hazardous substances, other than household chemicals used according to the directions specified on the packaging for domestic applications;
2. The use of injection wells proposed as part of a stormwater management system;
3. All storage tanks and storage facilities for hazardous substances and/or hazardous wastes provided that:
   a. The tanks must comply with Department of Ecology regulations contained in WAC 173-360 and 173-303 as well as International Building Code requirements;
   b. All new underground tanks and facilities shall be designed and constructed so as to prevent releases due to corrosion or structural failure for the operational life of the tank, or have a secondary containment system to prevent the release of any stored substances;
   c. All new aboveground storage tanks and facilities shall be designed and constructed so as to prevent the release of a hazardous substance to the ground, groundwaters, or surface waters by having primary and secondary containment.
4. . Use of reclaimed wastewater must be in accordance with adopted water or sewer comprehensive plans that have been approved by the state Departments of Ecology and Health.

1.5. . Any other activity determined by the Director likely to have an adverse impact on ground water quality or quantity or on the recharge of the aquifer.

A. The following development activities, when proposed in moderate or high susceptibility critical aquifer recharge areas, have the potential to adversely affect groundwater quality and/or quantity and shall require submittal of a sensitive areas assessment report:

1. Any development with an on-site domestic septic system at a gross density greater than one system per residence per acre.

2. All storage tanks and storage facilities for hazardous substances and/or hazardous wastes provided that:

a. The tanks must comply with Department of Ecology regulations contained in WAC 173-360 and 173-303 as well as International Building Code requirements;

b. All new underground tanks and facilities shall be designed and constructed so as to prevent releases due to corrosion or structural failure for the operational life of the tank, or have a secondary containment system to prevent the release of any stored substances;

c. All new aboveground storage tanks and facilities shall be designed and constructed so as to prevent the release of a hazardous substance to the ground, groundwaters, or surface waters by having primary and secondary containment.

3. Vehicle repair, servicing and salvaging facilities, provided that the facility must be conducted over impermeable pads and within a covered structure capable of withstanding normally

~~expected weather conditions. Chemicals used in the process of vehicle repair and servicing must be stored in a manner that protects them from weather and provides containment should leaks occur. Dry wells shall not be allowed on sites used for vehicle repair and servicing. Dry wells existing on the site prior to facility establishment must be abandoned using techniques approved by the state Department of Ecology prior to commencement of the proposed activity.~~

~~4. Use of reclaimed wastewater must be in accordance with adopted water or sewer comprehensive plans that have been approved by the state Departments of Ecology and Health.~~

~~5. Any other development activity that the director determines is likely to have a significant adverse impact on groundwater quality or quantity, or on the recharge of the aquifer. The determination must be made based on credible scientific information.~~

B. Level One Hydrogeologic Assessment. A level one hydrogeologic assessment shall include the following site-and proposal-related information at a minimum:

1. Available information regarding geologic and hydrogeologic characteristics of the site including the surface location of all critical aquifer recharge areas located on site or immediately adjacent to the site, and permeability of the unsaturated zone;
2. Ground water depth, flow direction, and gradient based on available information;
3. Currently available data on wells and springs within 1,300 feet of the project area;
4. Location of other critical areas, including surface waters, within 1,300 feet of the project area;
5. Available historic water quality data for the area to be affected by the proposed activity; and
6. Best management practices proposed to be utilized.

C. Level Two Hydrogeologic Assessment. A level two hydrogeologic assessment shall include the following site-and proposal-related information at a minimum, in addition to the requirements for a level one hydrogeological assessment:

1. Historic water quality data for the area to be affected by the proposed activity compiled for at least the previous five (5) year period;
2. Ground water monitoring plan provisions;
3. Discussion of the effects of the proposed project on the ground water quality and quantity, including:
   a. Predictive evaluation of ground water withdrawal effects on nearby wells and surface water features; and
   b. Predictive evaluation of contaminant transport based on potential releases to ground water.
4. A spill plan that identifies equipment and/or structures that could fail, resulting in an impact. Spill plans shall include provisions for regular inspection, repair, and replacement of structures and equipment that could fail.

~~The sensitive area study above shall contain the following:~~

~~1. Available information regarding geologic and hydrogeologic characteristics of the site including the surface location of all critical aquifer recharge areas located on site or immediately adjacent to the site, and permeability of the unsaturated zone;~~

~~2. Groundwater depth, flow direction and gradient based on available information;~~

~~3. Currently available data on wells and springs within one thousand three hundred (1,300) feet of the project area;~~

4. ~~The presence and approximate location of other sensitive areas, including surface waters, within one thousand three hundred (1,300) feet of the project area based on available data and maps;~~
5. ~~Existing and available historic water quality data for the area to be affected by the proposed activity;~~
6. ~~Proposed best management practices to be used in developing and operating the project;~~
7. ~~The effects of the proposed project on the groundwater quality and quantity, including:~~
   a. ~~Potential effects on stream flow, wetlands and/or other resources, and on ecosystem processes,~~
   b. ~~Predictive evaluation of groundwater withdrawal effects on nearby wells and surface water features, and~~
   c. ~~Predictive evaluation of contaminant transport based on potential releases to groundwater.~~
8. ~~A spill plan that identifies equipment and/or structures that could fail, resulting in an impact. Spill plans shall include provisions for emergency response provisions as well as regular inspection, repair, and replacement of structures and equipment that could fail.~~

D~~C~~. If the applicant can demonstrate through a valid hydrogeological assessment that geologic and soil conditions underlying their property do not meet the criteria for low, moderate, or high susceptibility, the property shall not be considered a critical aquifer recharge area.

14.42.640 – Critical aquifer recharge areas performance standards, specific uses.

A. Storage tanks. All storage tanks proposed to be located in a critical aquifer recharge area must comply with local building code requirements and must conform to the following requirements:

1. Underground tanks: All new underground storage facilities proposed for use in the storage of hazardous substances or hazardous wastes shall be designed and constructed so as to prevent releases due to corrosion or structural failure for the operational life of the tank; be protected against corrosion, constructed of noncorrosive material, steel clad with a noncorrosive material, or designed to include a secondary containment system to prevent the release or threatened release of any stored substances; and use material in the construction or lining of the tank that is compatible with the substance to be stored.
2. Above ground tanks: All new above ground storage facilities proposed for use in the storage of hazardous substances or hazardous wastes shall be designed and constructed so as to not allow the release of a hazardous substance to the ground; have a primary containment area enclosing or underlying the tank or part thereof ground waters, or surface waters; and have a secondary containment system either built into the tank structure or a dike system built outside the tank for all tanks.

B. Vehicle Repair and Servicing.

1. Vehicle repair and servicing must be conducted over impermeable pads and within a covered structure capable of withstanding normally expected weather conditions. Chemicals used in the process of vehicle repair and servicing must be stored in a manner that protects them from weather and provides containment should leaks occur.
2. No dry wells shall be allowed in critical aquifer recharge areas on sites used for vehicle repair and servicing. Dry wells existing on the site prior to facility establishment must be abandoned using techniques approved by the state Department of Ecology prior to commencement of the proposed activity.

C. Residential Use of Pesticides and Nutrients. Application of household pesticides, herbicides, and fertilizers shall not exceed times and rates specified on the packaging.

D. State and Federal Regulations. All of the above listed uses, and other uses where state and federal regulations apply, shall be conditioned as necessary to protect critical aquifer recharge areas in accordance with the applicable state and federal regulation. In addition, any water reuse projects for reclaimed water must be in accordance with the adopted water or sewer comprehensive plans that have been approved by the state departments of Ecology and Health, and must meet the ground water recharge criteria given in Chapter 90.46.080(1) and Chapter 90.46.010(10) RCW. The state Department of Ecology may establish additional discharge limits in accordance with Chapter 90.46.080(2) RCW.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.700 - Definitions.

As used in this chapter:

"Accessory structure" means a structure that is incidental and subordinate to a primary use. Barns, garages, storage sheds, and similar structures are examples.

"Actively farmed" means land that has a documented history of ongoing agricultural use and that is currently used primarily for the production of crops and/or raising or keeping livestock.

"Activity" means human activity associated with the use of land or resources.

"Adaptive management" means using scientific methods to evaluate how well regulatory and nonregulatory actions protect the sensitive area. An adaptive management program is a formal and deliberate scientific approach to taking action and obtaining information in the face of uncertainty. Management policy may be adapted based on a periodic review of new information.

"Agricultural activities" means those activities directly pertaining to the production of crops or livestock including but not limited to cultivation, harvest, grazing, animal waste storage and disposal, fertilization, the operation and maintenance of farm and stock ponds or drainage ditches irrigation systems, canals, and normal maintenance, repair, or operation of existing serviceable structures, facilities, or improved areas. Activities that bring an area into agricultural use are not agricultural activities.

"Agricultural land" is land primarily devoted to the commercial production of horticultural, viticultural, floricultural, dairy, apiary, or animal products or of berries, grain, hay, straw, turf, seed, Christmas trees not subject to the excise tax imposed by RCW 84.33.100 through 84.33.140, or livestock, and/or lands that have been designated as capable of producing food and fiber, which have not been developed for urban density housing, business, or other uses incompatible with agricultural activity.

"Alluvium" means a general term for clay, silt, sand, gravel, or similar other unconsolidated detrital materials, deposited during comparatively recent geologic time by a stream or other body of running water, as a sorted or semi-sorted sediment in the bed of the stream or on its floodplain or delta.

"Alteration" means any human-induced change in an existing condition of a sensitive area or its buffer. Alterations include, but are not limited to grading, filling, channelizing, dredging, clearing (vegetation), draining, construction, compaction, excavation, or any other activity that changes the character of the sensitive area.

"Anadromous fish" means fish species that spend most of their lifecycle in salt water, but return to freshwater to reproduce.

"Aquifer" means a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs (Chapter 173-160 WAC).

"Aquifer susceptibility" means the ease with which contaminants can move from the land surface to the aquifer based solely on the types of surface and subsurface materials in the area. Susceptibility usually defines the rate at which a contaminant will reach an aquifer unimpeded by chemical interactions with the vadose zone media.

"Aquifer vulnerability" is the combined effect of susceptibility to contamination and the presence of potential contaminants.

"Base flood" is a flood event having a one percent chance of being equaled or exceeded in any given year, also referred to as the one hundred (100) year flood. Designations of base flood areas on flood insurance map(s) always include the letters A (zone subject to flooding during a one hundred (100) year flood, but less so than V zones) or V (zone subject to the highest flows, wave action, and erosion during a one hundred (100) year flood).

"Bedrock" means a general term for rock, typically hard, consolidated geologic material that underlies soil or other unconsolidated, superficial material or is exposed at the surface.

"Best available science" means information from research, inventory, monitoring, surveys, modeling, synthesis, expert opinion, and assessment that is used to designate, protect, or restore sensitive areas. As defined by WAC 365-195-900 through 925, Best Available Science is derived from a process that includes peer-reviewed literature, standard methods, logical conclusions and reasonable inferences, quantitative analysis, and documented references to produce reliable information.

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

1. Control soil loss and reduce water quality degradation caused by nutrients, animal waste, toxins, and sediment;
2. Minimize adverse impacts to surface water and groundwater flow, circulation patterns, and to the chemical, physical, and biological characteristics of waters, wetlands, and other fish and wildlife habitat;
3. Control plant site runoff, spillage or leaks, sludge or water disposal, or drainage from raw material.

"Buffer (the buffer zone)" means ~~the vegetated area adjacent to the outer boundaries of sensitive areas that separates and protects sensitive areas from adverse impact associated with adjacent land uses~~the area contiguous with a sensitive area that maintains the functions and/or structural stability of the sensitive area.

"City" means Duvall, Washington.

"Clearing" means the removal of vegetation or plant cover by manual, chemical, or mechanical means. Clearing includes but is not limited to actions such as cutting, felling, thinning, flooding, killing, poisoning, girdling, uprooting, or burning.

"Compensatory mitigation" means ~~–~~restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

~~a mitigation project for the purpose of replacing, at an equivalent or greater level, unavoidable sensitive area and buffer impacts that remain after all appropriate and practicable avoidance and minimization measures have been implemented. Compensatory mitigation includes, but is not limited to, wetland creation, restoration, enhancement, and preservation; stream restoration and relocation, rehabilitation; and buffer enhancement.~~

"Conservation" means the prudent management of rivers, streams, wetlands, wildlife and other environmental resources in order to preserve and protect them. This includes the careful utilization of natural resources in order to prevent depletion or harm to the environment.

"Conservation easement" means a legal agreement that the property owner enters into to restrict uses of the land for purposes of natural resources conservation. The easement is recorded on a property deed, runs with the land, and is legally binding on all present and future owners of the property.

"Contaminant" means any chemical, physical, biological, or radiological substance that does not occur naturally in groundwater, air, or soil or that occurs at concentrations greater than those in the natural levels (Chapter 172-200 WAC).

"Creation" means the manipulation of a non-wetland (upland) site for purposes of establishing wetland functions and characteristics where none previously existed. Activities could include, but are not limited to,

excavation of upland soils to elevations that will produce a wetland hydroperiod, create hydric soils, and support the growth of wetland plant species. Creation results in a gain in wetland acres.

"Critical facilities" means and includes modification of selected critical facilities identified under the occupancy categories of essential facilities, hazardous facilities, and special occupancy structures in the International Building Code, 2003 Edition. These include but are not limited to:

1. Essential facilities;
2. Fire and police stations;
3. Tanks or other structures containing, housing or supporting water or other fire-suppression materials or equipment required for the protection of essential or hazardous facilities, or special occupancy structures;
4. Emergency vehicle shelters and garages;
5. Structures and equipment in emergency-preparedness centers;
6. Stand-by power generating equipment for essential facilities;
7. Structures and equipment in government communication centers and other facilities required for emergency response;
8. Hazardous Facilities. Structures supporting or containing sufficient quantities of toxic or explosive substances dangerous to the safety of the general public if released;
9. Special occupancy structures; covered structures where primary occupancy is public assembly; buildings for schools, colleges, adult education or day-care centers; hospitals and other medical facilities; jails and detention facilities.

"Critical habitat" means habitat areas with which endangered, threatened, sensitive or monitored plant, fish, or wildlife species have a primary association (e.g., feeding, breeding, rearing of young, migrating). Such areas are identified herein with reference to lists, categories, and definitions promulgated by the Washington Department of Fish and Wildlife as identified in WAC 232-12-011 or 232-12-014; in the Priority Habitat and Species (PHS) program of the Department of Fish and Wildlife; or by rules and regulations adopted by the U.S. Fish and Wildlife Service, National Marine Fisheries Service, or other agency with jurisdiction for such designations.

"Critical or sensitive aquifer recharge area" means areas designated by WAC 365-190-080(2) that are determined to have a critical recharging effect on aquifers (i.e., maintain the quality and quantity of water) used for potable water as defined by WAC 365-190-030(2).

"Deepwater habitats" means permanently flooded lands lying below the deepwater boundary of wetlands. Deepwater habitats include environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium in which the dominant organisms live. The boundary between wetland and deepwater habitat in the marine and estuarine systems coincides with the elevation of the extreme low water of spring tide; permanently flooded areas are considered deepwater habitats in these systems. The boundary between wetland and deepwater habitat in the riverine and lacustrine systems lies at a depth of two meters (6.6 feet) below low water; however, if emergent vegetation, shrubs, or trees grow beyond this depth at any time, their deepwater edge is the boundary

"Delineation" means the precise determination of wetland boundaries in the field according to the application of the approved federal wetland delineation manual and applicable regional supplements. ~~of specific method described in the 1997 Washington State Wetland Delineation Manual and/or the, Corps of Engineers Wetlands Delineation Manual, 1987 Edition, as amended~~.

"Development" means any activity that requires federal, state, or local approval for the use or modification of land or its resource. These activities include, but are not limited to: subdivision and short subdivisions; binding site plans; planned unit developments; variances; shoreline substantial development; clearing activity; fill and grade work; activity conditionally allowed; building or construction; revocable encroachment permits; and septic approval.

"Director" means the director of the City planning department, or his or her designee~~ or other responsible official, or other city staff granted the authority to act on behalf of the director~~.

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"Drainage ditch" means an artificially created watercourse constructed to drain surface or groundwater. Ditches are graded (man-made), channels installed to collect and convey runoff from fields and roadways. Ditches may include irrigation ditches, waste ways, drains, outfalls, operational spillways, channels, stormwater runoff facilities or other wholly artificial watercourses, except those that directly result from the modification to a natural watercourse. Ditched channels that support fish are considered to be streams.

"Emergency activities" are those activities that require immediate action within a time too short to allow full compliance with this chapter due to an unanticipated and imminent threat to public health, safety or the environment. Emergency construction does not include development of new permanent protective structures where none previously existed. All emergency construction shall be consistent with the policies of 90.58 RCW and this chapter. As a general matter, flooding or other seasonal events that can be anticipated and may occur but that are not imminent are not an emergency.

"Emergent wetland" means a wetland with at least thirty (30) percent of the surface area covered by erect, rooted, herbaceous vegetation as the uppermost vegetative strata.

"Enhancement" means actions performed within an existing degraded sensitive area and/or buffer to intentionally increase or augment one or more functions or values of the existing sensitive area or buffer. Enhancement actions include but are not limited to increasing plant diversity and cover, increasing wildlife habitat and structural complexity (snags, woody debris), installing environmentally compatible erosion controls, or removing nonindigenous plant or animal species.

"Erosion" means a process whereby wind, rain, water and other natural agents mobilize, and transport, and deposit soil particles.

"Erosion hazard areas" means lands or areas underlain by soils identified by the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) as having "severe" or "very severe" erosion hazards and areas subject to impacts from lateral erosion related to moving water such as river channel migration and shoreline retreat.

"Essential public facility" means those facilities that are typically difficult to site, such as airports, state education facilities, and state or regional transportation facilities, state and local correctional facilities, solid waste handling facilities, and inpatient facilities including substance abuse facilities, mental health facilities, and group homes.

"Existing and ongoing agricultural activities" means those activities conducted on lands defined in RCW 36.70A.030 and those activities involved in the production of crops and livestock, including but not limited to operation and maintenance of existing farm and stock ponds or drainage ditches, irrigation systems, changes between agricultural activities, and maintenance or repair of existing serviceable structures and facilities. Activities that result in the filling of an area or bring an area into agricultural use are not part of an ongoing activity. An operation ceases to be ongoing when the area on which it was conducted has been converted to a nonagricultural use, or has lain idle for more than five years unless that idle land is registered in a federal or state soils conservation program. Forest practices are not included in this definition.

"Exotic" means any species of plants or animals that is not indigenous to the area.

"Farm pond" means an open water depression created from a non-wetland site in connection with agricultural activities.

"Feasible alternative" means an alternative that is available and reasonably capable of being carried out after taking into consideration, cost, existing technology, and logistics in light of overall project purposes, and having less impact to sensitive areas.

"Fen" means a mineral-rich wetland formed in peat that has a neutral to alkaline pH. Fens are wholly or partly covered with water and dominated by grass-like plants, grasses, and sedges.

"Fill material" means any solid or semi-solid material, including rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mining or other excavation activities, and materials used

to create any structure or infrastructure, that when placed, changes the grade or elevation of the receiving site.

"Filling" means the act of transporting or placing by any manual or mechanical means fill material from, to, or on any soil surface, including temporary stockpiling of fill material.

"Fish and wildlife habitat conservation areas" are areas important for maintaining species in suitable habitats within their natural geographic distribution so that isolated populations are not created.

"Fish habitat" means a complex of physical, chemical, and biological conditions that provide the life supporting and reproductive needs of a species or life stage of fish. Although the habitat requirements of a species depend on its age and activity, the basic components of fish habitat in rivers, streams, ponds, lakes, estuaries, marine waters, and nearshore areas include, but are not limited to, the following:

1. Clean water and appropriate temperatures for spawning, rearing, and holding;
2. Adequate water depth and velocity for migrating, spawning, rearing, and holding, including off-channel habitat;
3. Abundance of bank and in-stream structures to provide hiding and resting areas and stabilize stream banks and beds;
4. Appropriate substrates for spawning and embryonic development. For stream and lake dwelling fishes, substrates range from sands and gravel to rooted vegetation or submerged rocks and logs. Generally, substrates must be relatively stable and free of silts or fine sand;
5. Presence of riparian vegetation as defined in this article. Riparian vegetation creates a transition zone, which provides shade and food sources of aquatic and terrestrial insects for fish;
6. Unimpeded passage (i.e., due to suitable gradient and lack of barriers) for upstream and downstream migrating juveniles and adults.

"Flood or flooding" means a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland waters and/or the unusual and rapid accumulation of runoff of surface waters from any source.

"Floodplain" means the total land area adjoining a river, stream, watercourse, or lake subject to inundation by the base flood.

"Floodway" means the channel of a river or other watercourse and the adjacent land area that must be reserved in order to discharge the base flood without cumulatively increasing the surface water elevation more than one foot. Also known as the "zero rise floodway."

"Forested wetland" means a wetland with at least thirty (30) percent of the surface area covered by woody vegetation greater than twenty (20) feet in height, excluding monotypic stands of red alder or cottonwood that average eight inches diameter at breast height or less.

"Frequently flooded areas" means lands in the floodplain subject to a one percent or greater chance of flooding in any given year and those lands that provide important flood storage, conveyance and attenuation functions, as determined by the city in accordance with WAC 365-190-080(3). Classifications of frequently flooded areas include, at a minimum, the one hundred (100) year floodplain designations of the Federal Emergency Management Agency and the National Flood Insurance Program.

"Function and value" means the beneficial roles served by sensitive areas and the values people derive from these roles including, but not limited to, water quality protection and enhancement, fish and wildlife habitat, food chain support, flood storage, conveyance and attenuation, groundwater recharge and discharge, erosion control, wave attenuation, protection from hazards, providing historical and archaeological resources, noise and visual screening, open space, and recreation. These beneficial roles are not listed in order of priority.

"Function assessment or functions and values assessment" means a set of procedures, applied by a qualified consultant, to identify the ecological functions being performed in a wetland or other sensitive area, usually by determining the presence of certain characteristics, and determining how well the sensitive

area is performing those functions. Function assessments can be qualitative or quantitative and may consider social values potentially provided by the wetland or other sensitive area. Function assessment methods must be consistent with best available science.

"Functions" means the processes or attributes provided by areas of the landscape (e.g., wetlands, rivers, streams, and riparian areas) including, but not limited to, habitat diversity and food chain support for fish and wildlife, groundwater recharge and discharge, high primary productivity, low flow stream water contribution, sediment stabilization and erosion control, storm and floodwater attenuation and flood peak desynchronization, and water quality enhancement through biofiltration and retention of sediments, nutrients, and toxicants. These beneficial roles are not listed in order of priority.

"Game fish" means those species of fish that are classified by the Washington Department of Wildlife as game fish (WAC 232-12-019).

"Geologically hazardous areas" means areas that because of their susceptibility to erosion, sliding, earthquake, or other geological events, pose unacceptable risks to public health and safety and may not be suited to commercial, residential, or industrial development.

"Gradient" means a degree of inclination, or a rate of ascent or descent, of an inclined part of the earth's surface with respect to the horizontal; the steepness of a slope. It is expressed as a ratio (vertical to horizontal), a fraction (such as meters/kilometers or feet/miles), a percentage (of horizontal distance), or an angle (in degrees).

"Grading" means any excavating or filling of the earth's surface or combination thereof.

"Groundwater" means all water that exists beneath the land surface or beneath the bed of any stream, lake or reservoir, or other body of surface water within the boundaries of the state, whatever may be the geological formation or structure in which such water stands or flows, percolates or otherwise moves (Chapter 90.44 RCW).

"Growing season" means the portion of the year when soil temperatures are above biologic zero (forty-one (41) degrees Fahrenheit).

"Growth Management Act" means RCW 36.70A, and 36.70B, as amended.

"Hazard tree" means any tree that is susceptible to immediate fall due to its condition (damaged, diseased, or dead) or other factors, and which because of its location is at risk of damaging permanent physical improvements to property or causing personal injury.

"Hazardous substance" means any liquid, solid, gas, or sludge, including any material, substance, product, commodity, or waste, regardless of quantity, that exhibits any of the physical, chemical or biological properties described in WAC 173-303-090 or 173-303-100.

"Hydraulic project approval (HPA)" means a permit issued by the state Department of Fish and Wildlife for modifications to waters of the state in accordance with Chapter 75.20 RCW.

"Hydric soil" means a soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part. The presence of hydric soil shall be determined following the methods in the approved federal wetland delineation manual and applicable regional supplements~~described in the Washington State Wetland Identification and Delineation Manual (RCW 36.70A.175)~~.

"Hydrologic soil groups" means soils grouped according to their runoff-producing characteristics under similar storm and cover conditions. Properties that influence runoff potential are depth to seasonally high water table, intake rate and permeability after prolonged wetting, and depth to a low permeable layer. Hydrologic soil groups are normally used in equations that estimate runoff from rainfall, but can be used to estimate a rate of water transmission in soil. There are four hydrologic soil groups:

1. Low runoff potential and a high rate of infiltration potential;
2. Moderate infiltration potential and a moderate rate of runoff potential;
3. Slow infiltration potential and a moderate to high rate of runoff potential; and

4. High runoff potential and very slow infiltration and water transmission rates.

"Hydrophytic vegetation" means macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

"Hyporheic zone" means the saturated zone located beneath and adjacent to streams that contain some proportion of surface water from the surface channel. The hyporheic zone serves as a filter for nutrients, as a site for macroinvertebrate production important in fish nutrition and provides other functions related to maintaining water quality.

"Impervious surface" means a hard surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development or that causes water to run off the surface in greater quantities or at an increased rate of flow compared to natural conditions prior to development. Common impervious surfaces may include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled macadam or other surfaces which similarly impede the natural infiltration of stormwater. Impervious surfaces do not include surface created through proven low impact development techniques.

"Infiltration" means the downward entry of water into the immediate surface of soil.

"In-kind compensation" means compensatory mitigation that involves the same wetland type and functions as the lost or degraded wetland, for example, the same hydrogeomorphic (HGM) subclass (e.g., riverine flow-through, depressional outflow, flats, etc.), plant community, and Cowardin class (e.g., palustrine emergent, palustrine forested or estuarine wetlands)~~to replace sensitive areas with substitute areas whose characteristics and functions closely approximate those destroyed or degraded by a regulated activity~~.

"Lake" means a naturally or artificially created body of deep (generally greater than 6.6 feet) open water that persists throughout the year. A lake is larger than a pond, greater than one acre in size, equal or greater than 6.6 feet in depth, and has less than thirty (30) percent aerial coverage by trees, shrubs, or persistent emergent vegetation. A lake is bounded by the ordinary high water mark or the extension of the elevation of the lake's ordinary high water mark with the stream where the stream enters the lake.

"Landfill" means a disposal facility or part of a facility at which solid waste is permanently placed in or on land including facilities that use solid waste as a component of fill.

"Landslide" means a general term covering a wide variety of mass movement landforms and processes involving the downslope transport, under gravitational influence of soil and rock material en masse; included are debris flows, debris avalanches, earthflows, mudflows, slumps, mudslides, rock slides, and rock falls.

"Landslide hazard areas" means areas that, due to a combination of site conditions like slope inclination and relative soil permeability are susceptible to mass wasting.

"Maintenance and repair" means work required to keep existing improvements in their existing operational state. This does not include any modification that changes the character, scope, or size of the original structure, facility, utility or improved area.

"Mass wasting" means downslope movement of soil and rock material by gravity. This includes soil creep, erosion, and various types of landslides, not including bed load associated with natural stream sediment transport dynamics.

"Mature forested wetland" means a wetland with an overstory dominated by mature trees having a wetland indicator status of facultative (FAC), facultative-wet (FACW), or obligate (OBL). Mature trees are considered to be at least twenty-one (21) inches in diameter at breast height.

"Mean annual flow" means the average flow of a river, or stream (measured in cubic feet per second) from measurements taken throughout the year. If available, flow data for the previous ten (10) years should be used in determining mean annual flow.

"Mitigation" means individual actions that may include a combination of the following measures, listed in order of preference:

1. Avoiding an impact altogether by not taking a certain action or parts of actions;
2. Minimizing impacts by limiting the degree or magnitude of an action and its implementation;
3. Rectifying impacts by repairing, rehabilitating, or restoring the affected environment;
4. Reducing or eliminating an impact over time by preservation and maintenance operations during the life of the action;
5. Compensating for an impact by replacing or providing substitute resources or environments; and
6. Monitoring the mitigation and taking remedial action when necessary.

"Mitigation bank" means a site where wetlands or similar habitats are restored, created, enhanced, or in exceptional circumstances, preserved, expressly for the purpose of providing compensatory mitigation in advance of authorized impacts to aquatic resources.

"Mitigation bank instrument" means the documentation of agency and bank sponsor concurrence on the objectives and administration of the bank. The "bank instrument" describes in detail the physical and legal characteristics of the bank, including the service area, and how the bank will be established and operated.

"Mitigation bank sponsor" means any public or private entity responsible for establishing and, in most circumstances, operating a bank.

"Mitigation plan" means a detailed plan indicating actions necessary to mitigate adverse impacts to sensitive areas.

"Monitoring" means evaluating the impacts of development proposals over time on the biological, hydrological, pedological, and geological elements of such systems and/or assessing the performance of required mitigation measures throughout the collection and analysis of data by various methods for the purpose of understanding and documenting changes in natural ecosystems and features, and includes gathering baseline data.

"Native vegetation" means plant species that are indigenous to the King County and the local area.

"No net loss" means the maintenance of the aggregate total of the city's sensitive area functions and values as achieved through a case-by-case review of development proposals. Each project shall be evaluated based on its ability to meet the no net loss goal.

"Off-site mitigation" means to replace sensitive areas away from the site on which a sensitive area has been adversely impacted by a regulated activity.

"Ordinary high water mark" means the mark or line on all lakes, rivers, streams and tidal water that will be found by examining the beds and banks and ascertaining where the presence and action of waters are so common and usual and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland in respect to vegetation (RCW 90.58.030(2)(b).

"Pond" means an open body of water, generally equal to or greater than 6.6 feet deep, that persists throughout the year and occurs in a depression of land or expanded part of a stream and has less than thirty (30) percent aerial coverage by trees, shrubs, or persistent emergent vegetation. Ponds are generally smaller than lakes. Farm ponds are excluded from this definition.

"Potable" means water that is suitable for drinking by the public (Chapter 246-290 WAC).

Practical Alternative. See "Feasible alternative."

"Preservation" means actions taken to ensure the permanent protection of existing, ecologically important sensitive areas and/or buffers that the city has deemed worthy of long-term protection.

"Primary association" means the use of a habitat area by a listed or priority species for breading/spawning, rearing young, resting, roosting, feeding, foraging, and/or migrating on a frequent and/or regular basis during the appropriate season(s) as well as habitats that are used less frequently/regularly but which provide for essential life cycle functions such as breeding/nesting/spawning.

"Priority habitat" means a habitat type with unique or significant value to one or more species. An area classified and mapped as priority habitat must have one or more of the following attributes: comparatively high fish or wildlife density; comparatively high fish or wildlife species diversity; fish spawning habitat; important wildlife habitat; important fish or wildlife seasonal range; important fish or wildlife movement corridor; rearing and foraging habitat; important marine mammal haul-out; refuge; limited availability; high vulnerability to habitat alteration; unique or dependent species; or shellfish bed. A priority habitat may be described by a unique vegetation type or by a dominant plant species that is of primary importance to fish and wildlife (such as oak woodlands or eelgrass meadows). A priority habitat may also be described by a successional stage (such as, old growth and mature forests). Alternatively, a priority habitat may consist of a specific habitat element (such as a consolidated marine/estuarine shoreline, talus slopes, caves, snags) of key value to fish and wildlife. A priority habitat may contain priority and/or nonpriority fish and wildlife (WAC 173-26-020(24)).

"Priority species" means wildlife species of concern due to their population status and their sensitivity to habitat alteration, as defined by the Washington Department of Fish and Wildlife.

"Project" means any proposed or existing activity regulated by the city.

"Project permit or project permit application" means any land use or environmental permit or approval required by the city, including, but not limited to, building permits, subdivisions, binding site plan, planned unit developments, conditional uses, shoreline substantial development permits, variance, lot consolidation relief, site plan review, permits or approvals authorized by a comprehensive plan or subarea plan.

"Qualified professional or qualified consultant" means a person with experience and training with expertise appropriate for the relevant sensitive area subject in accordance with WAC 365-195-905(4). A qualified professional must have obtained a B.S. or B.A. or equivalent degree in biology, soil science, engineering, environmental studies, fisheries, geology, geomorphology or related field, and related work experience and meet the following criteria:

1. A qualified professional for wetlands must have a degree in biology, ecology, soil science, botany, or a closely related field and a minimum of five years of professional experience in wetland identification and assessment in the Pacific Northwest.
2. A qualified professional for habitat conservation areas must have a degree in wildlife biology, ecology, fisheries, or closely related field and a minimum of five years professional experience related to the subject species/habitat type.
3. A qualified professional for geologically hazardous areas must be a professional engineering geologist or geotechnical engineer, licensed in the state of Washington.
4. A qualified professional for critical aquifer recharge areas means a Washington State licensed hydrogeologist, geologist, or engineer.

"Reasonable use" means a mechanism by which a local jurisdiction may grant relief from code requirements where compliance would leave~~s~~ no minimum economic use to which a property owner is entitled under applicable state and federal constitutional provisions in order to avoid a taking and/or violation of substantive due process~~reasonable use of the property~~.

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"Recharge" means the process involved in the absorption and addition of water from the unsaturated zone to groundwater.

"Reestablishment" means the manipulation of a former wetland site with the goal of restoring natural or historic wetland characteristics and functions that are no longer present. Reestablishment activities could include, but are not limited to, grading/excavation, removing fill material, plugging ditches, breaking drain tiles, and planting. Reestablishment results in a gain in wetland acres and functions.

"Rehabilitation" means the manipulation of the physical or hydrological characteristics of an existing degraded wetland for the purposes of repairing natural or historic functions and processes. Activities could involve, but are not limited to, breaching a dike to reconnect wetlands to a floodplain or other activities that restore the natural water regime. Rehabilitation results in a gain in wetland functions and processes but does not result in a gain in wetland acres.

"Repair or maintenance" means an activity that restores the character, scope, size, and design of a serviceable area, structure, or land use to its previously authorized and undamaged condition. Activities that change the character, size, or scope of a project beyond the original design and drain, dredge, fill, flood, or otherwise alter sensitive areas are not included in this definition.

"Resident fish" means a fish species that completes all stages of its life cycle within freshwater and frequently within a local area.

Restoration. See "Reestablishment."

"Rills" means steep-sided channels resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery. Rill erosion tends to occur on slopes, particularly steep slopes with poor vegetative cover.

"Riparian corridor or riparian zone" means the area adjacent to a water body that contains vegetation that influences the aquatic ecosystem and fish habitat by providing shade, fine or large woody material, nutrients, organic debris, sediment filtration, and terrestrial insects (fish prey production). Riparian areas include those portions of terrestrial ecosystems that significantly influence exchanges of energy and matter with aquatic ecosystems (i.e., zone of influence). Riparian zones provide important wildlife habitat. They provide sites for foraging, breeding and nesting; cover to escape predators or weather; and corridors that connect different parts of a watershed for dispersal and migration.

"Riparian vegetation" means vegetation that tolerates and/or requires moist conditions and periodic free flowing water thus creating a transitional zone between aquatic and terrestrial habitats which provides cover, shade and food sources for aquatic and terrestrial insects for fish species. Riparian vegetation and their root systems stabilizes stream banks, attenuates high water flows, provides wildlife habitat and travel corridors, and provides a source of limbs and other woody debris to terrestrial and aquatic ecosystems, which, in turn, stabilize stream beds.

"Salmonid" means a species of the family Salmonidae: the salmons, trouts, chars, and whitefishes.

"Scrub-shrub wetland" means a wetland with at least thirty (30) percent of its surface area covered by woody vegetation less than twenty (20) feet in height as the uppermost strata.

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

"Sensitive areas" means any of the following areas or ecosystems: critical aquifer recharge areas, fish and wildlife habitat conservation areas, geologically hazardous areas, frequently flooded areas, and wetlands, as defined in RCW 36.70A and this Chapter. Sensitive areas are synonymous with and commonly referred to as critical areas, including within RCW 36.70A.

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"Sensitive area report" means a report prepared by a qualified professional or qualified consultant based on best available science, and the specific methods and standards for technical study required for each applicable sensitive area. Geotechnical reports and hydrogeological reports are sensitive area reports specific to geologically hazardous areas and sensitive aquifer recharge areas, respectively.

"Sensitive area tract" means land held in private ownership and retained in an open undeveloped condition (native vegetation is preserved) in perpetuity for the protection of sensitive areas.

"SEPA" is a commonly used abbreviation for the State Environmental Policy Act.

"Shorelands or shoreland areas" means those lands extending landward for two hundred (200) feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward two hundred (200) feet from such floodways; and all wetlands and river deltas associated with the streams, lakes and tidal waters which are subject to the provisions of Chapter 90.58 RCW.

"Shoreline (Shoreline Management Act)" means all of the water areas of the state, including reservoirs and their associated wetlands, together with lands underlying them, except:

1. Shorelines on segments of streams upstream from a point where the mean annual flow is twenty (20) cubic feet per second or less and the wetlands associated with such upstream segments; and
2. Shorelines on lakes less than twenty (20) acres in size and wetlands associated with such small lakes.

"Shorelines" are all of the water areas of the state as defined in RCW 90.58.030, including reservoirs and their associated shorelands, together with the lands underlying them except:

1. Shorelines of statewide significance;
2. Shorelines on segments of streams upstream of a point where the mean annual flow is twenty (20) cubic feet per second or less and the wetlands associated with such upstream segments; and
3. Shorelines on lakes less than twenty (20) acres in size and wetlands associated with such small lakes.

"Shorelines of statewide significance" means those areas defined in RCW 90.58.030(2)(e).

"Shorelines of the state" means the total of all "shorelines," as defined in RCW 90.58.030(2)(d), and "shorelines of statewide significance" within the state, as defined in RCW 90.58.030(2)(c).

"Single-family development" means the development of a single-family residence permanently installed and served with utilities on a lot of record.

"Site" means any parcel or combination of contiguous parcels, or right-of-way or combination of contiguous rights-of-way under the applicant's ownership or control where the proposed project impacts an environmentally sensitive area.

"Slope" means:

1. Gradient;
2. The inclined surface of any part of the earth's surface, delineated by establishing its toe and top and measured by averaging the inclination over at least ten (10) feet of vertical relief.

"Soil" means all unconsolidated materials above bedrock described in the soil conservation service classification system or by the unified soils classification system.

"Sphagnum bog" means a type of wetland dominated by mosses of the genus Sphagnum that form peat. Sphagnum bogs are very acidic, nutrient poor systems, fed by precipitation rather than surface inflow, with specially adapted plant communities.

"Streams" are those areas where surface waters produce a defined channel or bed. A defined channel or bed is an area that demonstrates clear evidence of the annual passage of water and includes, but is not limited to, bedrock channels, gravel beds, sand and silt beds, and defined-channel swales. The channel or bed need not contain water year-round. This definition includes drainage ditches or other artificial water courses where natural streams existed prior to human alteration, and/or the waterway is used by anadromous or resident salmonid or other fish populations.

"Structure" means a permanent or temporary building or edifice of any kind, or any piece of work artificially built up or composed of parts joined together in some definite matter whether installed on, above, or below the surface of the ground or water, except for vessels.

"Toe" means the lowest part of a slope or cliff; the downslope end of an alluvial fan, landslide, etc.

"Top" means the top of a slope; or in this chapter it may be used as the highest point of contact above a landslide hazard area.

"Unavoidable" means adverse impacts that remain after all appropriate and practicable avoidance and minimization measures have been implemented.

"Utilities" means all lines and facilities used to distribute, collect, transmit, or control electrical power, natural gas, petroleum products, information (telecommunications), water, and sewage.

"Watershed" means a geographic region within which water drains into a particular river, stream or body of water.

"Well head protection area" means the area (surface and subsurface) managed to protect groundwater based public water supplies.

"Wet meadow" means palustrine emergent wetlands, typically having disturbed soils, vegetation, or hydrology.

"Wet season" means the period generally between November 1st and March 30th of most years when soils are wet and prone to instability. The specific beginning and end of the wet season can vary from year to year depending on weather conditions.

"Wetland" means areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, retention 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. However, wetlands include those artificial wetlands intentionally created to mitigate wetland impacts.

"Wetland buffer" means a designated area contiguous or adjacent to a wetland that is required for the continued maintenance, function, and ecological stability of the wetland.

"Wetland class" means the general appearance of the wetland based on the dominant vegetative life form or the physiography and composition of the substrate. The uppermost layer of vegetation that possesses an aerial coverage of thirty (30) percent or greater of the wetland constitutes a wetland class. Multiple classes can exist in a single wetland. Types of wetland classes include forest, scrub/shrub, emergent, and open water.

"Wetland delineation" means the precise determination of wetland boundaries in the field according to the application of specific methodology as described in the approved federal wetland delineation manual and applicable regional supplements~~1997 Washington State Wetland Delineation Manual or 1987 Edition, as amended, Corps of Engineers Wetlands Delineation Manual and the mapping thereof~~.

"Wetland edge" means the boundary of a wetland as delineated based on the definitions contained in this chapter.

Wetland Enhancement. See "Mitigation."

"Wetland mitigation bank" means a site where wetlands and buffers are restored, created, enhanced, or in exceptional circumstances, preserved expressly for the purpose of providing compensatory mitigation in advance of authorized impacts to similar resources.

Wetland Restoration. See "Mitigation" and "Reestablishment."

"Windthrow" means a natural process by which trees are uprooted or sustain severe trunk damage by the wind.

"Wood waste" means solid waste consisting of wood pieces or particles generated as a by-product or waste from the manufacturing of wood products, handling and storage of raw materials and trees and stumps. This includes but is not limited to, sawdust, chips, shavings, bark, pulp, hog fuel, and log sort yard waste, but does not include wood pieces or particles containing chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenate.

(Ord. 1056 § 1 Exh. A (part), 2007)

This comment / response tracking document includes three separate sections:

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Sensitive Areas Update – Advisory Group Feedback on Initial Draft (June 2017 Draft) – Comment and Response Matrix

Comment	Commenter	Response
TOPIC: Relationship to Other Regulations (DMC 14.42.XXX – New Section]		
Standard "B", Regarding adjacent / overlapping sensitive areas and how protections are determined: In an instance where a Cat IV wetland occurred adjacent to Cat III wetland, would both have associated CAT III buffer?	J. Walker (7/6)	This was not the intent of this proposed language; intent was to ensure that where various types of SAs are overlapping, the standards for the SA that provide the highest level of protection should apply. Revision made to clarify.
TOPIC: Exemptions		
Regarding existing exemption for ongoing agricultural activities: Ag remains in the City, and this exemption has been used. Should be maintained	Comment from multiple people	Exemption maintained – comment addressed.
TOPIC: Allowed Activities (DMC 14.42.050)		

Comment	Commenter	Response
Regarding allowance for trails within certain types of sensitive areas: I'm not sure I understand #E.2. It sounds like "E" says trails are not allowed in wetlands, habitat conservation areas and their buffers, yet #2 expects this activity to occur. If trails do go near sensitive areas, I would like to see a 2:1 ratio. Sensitive area and/or buffer widths shall be increased, where possible, or at your discretion, at twice the width of the trail corridor, including disturbed areas. Trails may be a low impact activity when the public who uses them do so in a legal and respectful manner. Some who use trails may veer off the path and disturb vegetation or litter in and near sensitive areas. Some use public trails as a place to dump tires/oil and other chemicals because it's easier than finding a designated disposal site. A trail that is used for educational purposes may be exempt from the 2:1 ratio.	A. Dillon Snoqualmie Tribe (7/10)	This general allowance for trails is really only applicable to Geologically Hazardous Areas – as you note, "E" does not apply to wetlands or FWHCAs (including streams). Allowance for trails adjacent to wetlands and FWHCAs are provided within specific sections for each of these sensitive areas types.
Regarding allowance for hazard tree removal within sensitive areas (F.2.d): Mature trees provide more benefits than newly planted trees. This ratio should be increased to accommodate for the loss of services as young trees grow.	A. Dillon Snoqualmie Tribe (7/10)	Existing DMC 14.42 requires 1:1 ratio of replacement. Revision made to further restrict hazard tree removal allowance, and to require a higher ratio of replacement, with additional criteria intended to be specific to sensitive area / buffer circumstances. Proposed ratio is 6:1, with preference for coniferous trees.
The tree replacement ratio for hazard trees should be at the higher ratios used for trees identified to be "retained" (within the Tree Protection Code).	J. Knaplund (7/10)	See response above
Regarding allowance for hazard tree removal within sensitive areas (F.2.d): Look at Lake Forest Park for an example of this.	B. Ledoux, King County (7/6)	See response above Approach of LFP (integrating ISA – Best Management Practices: Tree Risk Assessment method) added to the proposed updates.
TOPIC: Sensitive area studies (DMC 14.42.060)		

Comment	Commenter	Response
Regarding proposed new section C on Minimum Study Contents: Are downstream impacts included in this?	A. Dillon Snoqualmie Tribe (7/10)	This section does generally cover downstream impacts, as well as other off-site impacts to sensitive areas.
TOPIC: Sensitive Areas Review (DMC 14.42.100)		
Regarding inventory mapping of sensitive areas: Will the sensitive areas map be updated as new field investigation identifies the presence of a sensitive area, its boundaries, and buffers?	A. Dillon Snoqualmie Tribe (7/10)	The City works to keep Inventory maps up-to-date and consistent with information provided by site-specific investigation. Inventory mapping will likely occur consistent with future Comp Plan updates / GMA compliance schedules
TOPIC: Reasonable Use Exemption (DMC 14.42.070.B)		
The "reasonable use" definition should be allowed to change over time. If natural resources do not recover, or become more endangered over time, what is considered reasonable development now, should not be considered reasonable in 25 years	A. Dillon Snoqualmie Tribe (7/10)	Past decisions from the WA Growth Management Hearings Board have set precedent and direction on what can be considered "Reasonable Use" for various use types / site situations. Based on feedback from group, no specific criteria provided for what should be considered a "Reasonable Use"
The "reasonable use" definition should differ from single family homeowners and business owners to large corporations and housing developments. Operations where one company or individual accumulates wealth disproportionately, should be subject to stricter environmental regulations: larger buffers surrounding sensitive areas and higher ratios for tree replacement. This suggestion is based on the presumption that a company building a large housing development is creating more disturbance to the area or participating in activities that generate more pollution than a single homeowner.	A. Dillon Snoqualmie Tribe (7/10)	
TOPIC: Site Density Calculations for Subdivision		
The following comments are in response to specific Meeting #4 Follow-Up Questions: • *Should calculation of Net Site Density only be applied differently for Group 3?* ***or*** • *Should calculation of Net Site Density be applied differently (using a factor) for each different Subbasin Group?*		
I think net density should be applied different to each group based on calculation...	M. Hogg (7/10)	Comments from the Group vary widely.

Comment	Commenter	Response
Yes, I think the Group 3 parcels should be allowed to subtract only the sensitive areas on the parcel, not the buffer areas, to allow flexibility in providing needed housing in the City. There may be the instance when one builder may not want to maximize the density, instead wanting larger lots/homes, yet another builder may want to take advantage of the flexibility to provide homes that are smaller and better able to meet the market needs/wants.	C. Krueger (7/7)	Revisions to proposed Draft SAO include a new approach, where the Watershed Plan approach is integrated as follows: o Group 3 could subtract out Sensitive Areas + 50% of site buffers o Groups 2C subtract out Sensitive Areas + site buffers o Group 2B subtract out Sensitive Areas + 110% of site buffers (further reducing density, to provide more room for NGPA, Open Space, Tree Protection, and decent-sized lots) o Groups 2A and 3 subtract out Sensitive Areas + 125% of site buffers (further reducing density, to provide more room for NGPA, Open Space, Tree Protection, and decent-sized lots) Idea here is that the variable approach is going both ways – and in all circumstances still includes at least 50% of site buffers.
In regards to the other sub-basins, you may want to use a sliding scale system, where the percentage of buffer that can be included in determining the yield is a factor of the percentage of the site that is encumbered by buffers. In other words, if the buffer areas are 25% of the site area, then 75% of the buffer can be utilized in the net site area calculation. If the buffer areas are 30% of the site area, then 70% of the buffer area can be included, etc.	C. Krueger (7/7)	
I think we need to be most protective in 2A and 2B, that's where the pressure to the sensitive areas will be the greatest. I would subtract out all sensitive areas plus buffers in these two sites and leave 2C and 3 as you have written hear.	B. Ledoux, King County (7/6)	
Will net density mean less home yield on developable land? But not really affect square foot ratio to a lot? So a development might have less units however the units will still be built to the allowable Square feet to lot size. For future development, if we update the plan to move us towards net Density. How many lots approximately will that actually impact?	D. Brudnicki (7/7 email)	
The buildable area should be based on usable area, i.e. factoring out any areas that are deemed sensitive and in need of protection, plus standard buffer that has been determined.	B. Vijay (7/10)	
The number of residential lots a parcel yields should be directly related to the buildable area only. If there is area on the parcel that is not buildable, it should not be used in the lot yield calculation. It is already very tight to get the lot yield calculated to logistically fit onto a parcel, even if there are no areas that need protection. If we	J. Knaplund (7/10)	

Comment	Commenter	Response
include ANY portion of the buffer in the calculation we are basically concluding that the buffer is buildable area. If ANY portion of the buffer is used to calculate lot yield, there will be intense pressure to buffer reduce, buffer average, mitigate, locate storm water facilities in buffers etc. • A very expensive and time consuming outcome of our calculations generating unrealistic lot yields are lawsuits against the City. (See Coy vs City of Duvall: http://caselaw.findlaw.com/wa-court-of-appeals/1627220.html) • For streams and many wetlands, the buffer is likely proportionately much larger than the actual sensitive area (wetland or stream footprint). If lot yield is calculated using this buffer area, it will be very unlikely that the buffer will be maintained. For example, let's say you have a 100ft diameter, category 3 wetland with only 5 habitat points for a buffer width of 105ft. The wetland would be 7,854 sq. ft. and the buffer for that wetland would be 67,622 sq. ft. The buffer is almost TEN times more square footage than the wetland (and this buffer is on the lower end of width – the buffer could be as high as 225ft depending on habitat score). So, as you can see, if the buffer is used to calculate lot yield, there is going to be a huge problem. • When a lot has an off-site sensitive area that borders the property, there is no sensitive area to subtract, so the buffer is the significant portion of the lot to be protected, and if that area is considered buildable (lot yield based on all or a portion of the buffer area being included), the calculation will generate an unrealistic number of lots. • I feel like the graphic examples in the meeting notes are not realistic. For one, the buffer is often proportionately larger in relation to the sensitive area. Most developments also have storm water retention facilities and all have a 10% open space requirement. There are also perimeter landscaping standards that eat up the available land. All of these areas are included in the calculation of the lot yield and thus puts further pressure on the buildable land and make the example not a realistic representation. I am concerned these graphics will promote a certain direction and since they are not representative of a typical scenario they should be corrected or at		

Comment	Commenter	Response
least that the Advisory Group be made aware of the concern and given a chance to reconsider. The residents of Duvall are extremely frustrated by recent development that is crammed into the buildable areas of the site. This is one, very specific area that the City could respond to citizen concerns and make a meaningful difference. The new code should define **Net Density = Gross Area – Sensitive Areas AND Standard Buffer** (before any reduction or mitigation has occurred).		
Gross site area to Net site area———I've always voted for Net!	D. Winn (7/4)	See Topic response above
For this question, honestly I believe we need to just look at the best available science for the moment and pair that first with what our community wants. From everything I have heard and read, it seems to be that we should have Net Site Density equal the Gross Acre minus the Sensitive Areas and Standard Buffer (NSD = acres - WL(or SA) - buffer - internal roads/etc.).	A. McHenry (7/10)	See Topic response above
Buffers fall under BAS and are considered in ecological processes and services for sensitive areas; an impact to any buffer must require review under the sensitive areas code and therefore buffers as well as the protected resources are sensitive areas and shall qualify for protective standards based on ecological functions. The approach of addressing buffers as sensitive areas is common in city ordinances and is justified under numerous BAS sources to allow for buffer functions to be maintained for the protected resources. There is absolutely no justification under sensitive areas BAS to incur allowable losses of sensitive areas functions. If excluded and adopted, a code provision on this basis will be easily appealed upon code adoption due to lack of scientific justification and contrary goals to the sensitive areas protection goals of the chapter. Net density must exclude SAs, inclusive of buffers.	J. Walker (CC; 7/6)	See topic response above
TOPIC: Notice Requirements / Placement of Sensitive Areas within Tracts:		
The following comments are in response to specific Meeting #4 Follow-Up Questions:		

Comment	Commenter	Response
• *Should there be allowance for any types of sensitive areas (or sensitive areas on smaller development sites) to be protected through placement in a separate easement (as with current DMC 14.42.100.B.2) as opposed to through placement in a separate tract (as generally required by DMC 14.42.100.B.1)?* • *Noticing – Is any additional noticing necessary, besides what is already required by code?*		
Tract / Easement: It would seem best to place the sensitive areas in tracts rather than easements since the maintenance and protection would be the responsibility of all the owners rather than just the lot owner that includes the easement on their lot.	C. Krueger (7/7)	Based on all comments – code revised slightly to require protection within a separate tract for all plats and similar developments
Tract / Easement: Is there a benefit for doing it a certain way? Or is there a burden to City staff doing it one way or another? My limited knowledge leads me to believe the separate tract would be permanent protection (which is always good) vs. and easement which can allow a property owner an out (a difficult out, but an out nonetheless). My preference would be to have permanent protection.	B. Ledoux, King County (7/6)	
Tract / Easement: Not if the responsibility of maintenance automatically falls to the City. If there are changes, I would like to see 14.42.100.B.1 clarify that if an HOA dissolves or does not exist, who is in charge of protecting the sensitive area. We have issues with HOAs maintaining common areas in some neighborhoods, or areas where they are non-functional and we should have a higher level of surety that they will be maintained appropriately.	A. Ockerlander (7/11)	
Tract / Easement: If an area has been deemed sensitive then yes, there has to be a permanent protection in place. Climate and weather changes can change the topography of a certain place in the short term but in my little knowledge of how it works, land memory is not lost. For e.g. In the city I grew up, there were sensitive areas and wetlands that over a period of time due to political greed, environmental changes and other factors, dried up and eventually they were zoned for development. Several years later when rain pattern had returned to its normal levels and also exceeded the normal pattern, the wetlands which would have sponged the extra rainfall had now disappeared and could not absorb anything, thus causing the entire city to flood with several lives, livestock, buildings etc washed away.	B. Vijay (7/10)	

Comment	Commenter	Response
Tract / Easement: I strongly think that all types of sensitive areas should be permanently protected through placement in a separate tract as required in DMC 14.42.100.B.1.	A. McHenry (7/10)	
Permanent protection via Tracts/ Easements: – Yes, for all developments, it's the small ones that are the egregious violators, ala, the one at 3rd Ave and Taylor Park Rd!	D. Winn (7/4)	
If an area deserves protection, then it needs to be permanently protected, placed in a separate tract and noticed. Otherwise is will certainly be degraded and eventually destroyed. Most new developments do not have yards for children to play – so the logical place for them to play will be in the sensitive areas and buffers, especially if they are not protected by fencing or noticing.	J. Knaplund (7/10)	See response above
Tract / Easement: Tracts for plats and short plats is the standard practice in most all jurisdictions, except for single lot redevelopments. If a single lot that has a critical area redevelops, it would not make any sense to require the expense in creating a separate tract.	J. Walker (CC; 7/6)	
Additional Noticing: Not sure about this, it seems like the policies that are in place are sufficient to protect the sensitive areas. Education of the residents adjacent to the sensitive areas would encourage protection without additional code requirements.	C. Krueger (7/7)	Some additional research on options from other jurisdictions regarding this topic to be completed before next Advisory Group meeting. Any final recommended changes to be presented and discussed at that time.
Additional Noticing: Do you have examples of additional noticing? From other cities? Or is what we require currently in code a common standard?	A. McHenry (7/10)	
Additional Noticing: Possibly. Clear language should be included on the title of properties impacted, with reference to city code that outlines responsibility and consequences of not protecting the sensitive area.	A. Ockerlander (7/11)	
Additional Noticing: Notification to Ecology/WDFW and Corps should be required for any work in Waters of the State or Waters of the US, as applicable. The reality is that if other agency consolation is not done, Cities can approve impacts that are infeasible with these agencies and this sets unreasonable development expectation and wastes much public staff time and public resources to process development applications that	J. Walker (CC; 7/6)	

Comment	Commenter	Response
need to be modified (or withdrawn) due to other agency conditions. As a reviewing wetland scientist for 5 local cities, as a condition of plat approval I commonly require early-coordination and proof of Ecology and Corps of Engineers correspondence/approvals as part of the acceptance of any impact and mitigation plan.		
Earlier email on Noticing requirements: I have some questions about the bottom of page 12, and the top of page 13. This is regarding notice on Title. 1. Why is # 2 considered being removed? 2. D/E on paragraph 4 on page 13… It is the owners responsibility to disclose sensitive area upon selling, or it is a violation of that section. I read further in the code, that there is a fee of $1,000 a day for violations. How do you enforce a violation like that after the fact. After the property is closed. 3. How do you go about disclosing these hazardous areas on title? Recorded document of some sort.? On Camano Island they have a homeowner sign a notarized document that says that a hazardous area will be disclosed upon selling… to a prospective buyer. And that responsibility is also transferred to the heirs I am thinking that document is recorded in the county.	M. Hogg (6/13 Email to L. Thomas)	Response from A. Booy (6/20): Thank you for your questions on the Draft SAO, specifically regarding notice requirements for properties within sensitive areas. Below are responses to your questions, and some spots where additional input from you could be useful – 1. Consideration for removal of #2: Provision 14.42.100.B.2 allows for Landslide Hazard Areas (and only this type of sensitive area) to be placed in an easement on a property, as opposed to "placement within a separate tract". Placement in a separate tract is generally required (per B.1 of this same section) for most sensitive areas types. It appears that the thought on provision B.2 was to ease the Noticing requirements for smaller developments occurring adjacent to a landslide hazard area. It could be fine to keep B.1 and B.2 as they are now – it was flagged to make

Comment	Commenter	Response
		sure that we received input from Lara and Troy, and the Advisory Group on this provision, and to ensure that the Noticing approach included in the code was consistent with what will work best, both administratively (for the City and property owners) and for long-term protection of the sensitive areas. 2. My understanding of filing of notice of a dedicated Sensitive Areas tract or easement, is that this happens at the time of recording of a plat or site plan with King County, and then that notice stays with the property and is referenced in the Title and sale (deed) documents whenever the property is sold. For example, for the Fox Hollow development, one of the larger FWHCA Tracts (including stream, wetlands, and associated buffer) is recorded as Tract 999, and is owned by the Fox Hollow HOA (along with all other Common Areas within the development). Tract 999 is noticed as a "common area"" dedicated to the HOA within the recorded Declaration for the Fox Hollow Estates. This document spells out that basically nothing can be done within sensitive areas tracts (Tracts 994 and

Comment	Commenter	Response
		999) without prior approval from the City, and also clearly states that Ownership and Maintenance of common areas (including Tract 999) is the responsibility of the HOA. Then, when individual lots are sold within the Fox Hollow development, the Fox Hollow Declaration document linked above (KC record number 20080624001313) is listed on the Deed document for the sale as being part of the "easement and the terms and conditions" applicable to the purchased property. As far as violations of this noticing requirement – I don't think this has ever happened, at least in my time working with Duvall. Since it is a recording requirement that occurs during plat or site plan approval by the City, I think that the noticing is basically automatic. And then at the time of any future property sales, reference to the original recorded notice is automatically included in the purchase papers. 3. Your question 3 (about disclosing sensitive and/or hazardous areas on title) I think is covered by the answer above. Regarding the approach of Camano / Island County – I am curious if this is an

Comment	Commenter	Response
		additional disclosure that has to go into the Seller's Report (when a property is listed for sale)? Or, if it really is the same requirement that the notice will be provided as part of the Title documents, which in reality probably no one really reviews or only reviews right before closing on purchase? If it is an additional requirement that requires earlier notification as part of a seller's report, that might be something worth considering for Duvall – especially for geo hazard areas where there is potentially some risk associated with the property. If you have additional info on the Camano approach, please let us know?
TOPIC: Wetland Impact Allowances (DMC 14.42.220)		
Fill exemption for CAT IV isolated wetlands is contrary to BAS and GMA.	J. Walker (CC; 7/6)	Revision made to provide consistency with Ecology guidance (BAS) for wetlands
TOPIC: Buffer Reduction Allowances for Wetlands and/or Streams		
The following comments are in response to specific Meeting #4 Follow-Up Questions: *Should allowance for wetland (and stream) buffer reduction – with limits identified above – be maintained?*		
Yes, there needs to be a balance between protecting the sensitive areas and providing opportunities for providing housing to the future community. When one looks at the City of Duvall, the city is surrounded by large areas of open space, trees, agricultural land, floodplains, etc. It would seem best to allow buffers to be reduced in width as long as the remaining buffer is then enhanced and improved to provide the protection	C. Krueger (7/7)	Revisions provided to further limit application of buffer reduction, and to further limit where it could apply and the extent of reduction that could be

Comment	Commenter	Response
for the sensitive areas. This will encourage more beneficial buffer conditions while providing opportunities for more urban development to occur on the upland portions of the City.		allowed. See Staff / ESA recommended revisions within code.
Leave as is.	D. Winn (7/4)	This is planned as a topic of discussion for our next meeting.
Wetlands are vanishing at an alarming rate and key to the hydrologic health of our area. I'm generally not in favor in any activity that degrades them further. It's also known that mitigated/constructed wetlands don't function as well as existing/natural wetlands even when degraded. My preference would be that buffer reduction doesn't occur, but if necessary only in group 3, maybe group 2C. And if that's the case there needs to be significant, well defined enhancement.	B. Ledoux, King County (7/6)	
I do not have enough knowledge on working wetlands and buffers to comment on this. In a layman's understanding I would prefer a functioning adequate buffer than vast area of non performing wetlands and buffers	B. Vijay (7/10)	
I agree that buffer averaging should always be preferred over any permitted buffer reduction. If we make the needed change of subtracting the standard buffer and sensitive area from the gross acres to calculate and use net density to determine lot yield, this probably won't be much of an issue.	A. McHenry (7/10)	
The buffer sizes were created in order to protect the sensitive area and backed by BAS. Any reduction is not going to be beneficial or optimal. The only time a reduction could be warranted is if a low value wetland or stream was so severely degraded that the trade off a reduced buffer in exchange for significant enhancement (and continued maintenance) was validated by an ecologist to be of more value.	J. Knaplund (7/10)	Revisions to July 2017 Draft are provided to give the City additional criteria (teeth) to ensure that the only allowances for reduction would occur at highly degraded, Cat III and IV wetlands.
Still not clear on what BAS says here – that should be the standard.	A. Ockerlander (7/11)	Most recent BAS (Ecology wetland guidance) states that wetland buffer reduction should not be included in SAO.
I am not comfortable with challenging the DOE on the wetland buffer regulations that they have set. However in Duvall we are sure to run into situations where a developer may want to build an excellent community with wonderful enhancements but we are now limited due to the change in buffer averaging. So is it possible to come up with a	D. Brudnicki (7/12)	The intent of leaving the limited allowance is to encourage additional restoration of highly degraded Cat III

Comment	Commenter	Response
solution regarding buffers that will give us flexibility ? I would not want us to loose an opportunity that in the end could be beneficial to both preservation and community enhancement.		and IV wetlands when development occurs (as opposed to just fencing reed canarygrass and Himalayan blackberry fields off). The City could choose to hold a harder line on requiring enhancement of degraded buffers, just to maintain the standard width (as opposed to wider buffers). This would be a change for many developers / property owners, and eliminates an effective "incentive" approach that, from Staff perspective, has worked well.
The protection of full required standard buffers is already a balance of many competing interests and standard buffer dimensions must be maintained to their maximum functional extent pursuant to justifiable standards in BAS. Buffers should also be increased where they are disturbed since the existing functions are compromised, and BAS allows this. Buffers should not allow to be reduced because of existing disturbance, and disturbance characteristics should not be placed in code since they can incentivize landowner degradation of sensitive areas to gain more buildable lots. Buffers must be protected to the maximum extent that science can justify, and even at that many ecologists can cite evidence to show that full regulatory dimensions of buffers are significantly lacking in the Puget Sound region. If blanket reductions are stated in code, and not based upon current science, this component of code can be appealed. The sensitive areas code is a protection ordinance to secure a legacy for our last remaining natural systems in our community based upon scientific standards so they are protected from development, it is not an additional incentive tool to decimate more of our environment in the cause of development.	J. Walker (CC; 7/6)	See comment responses above.

Comment	Commenter	Response
TOPIC: Variable Allowances and Protections based on Subbasin Management Group (Watershed Plan)		
The following comments are in response to specific Meeting #4 Follow-Up Questions: *Does the new approach for sensitive areas / buffer alteration allowances, tied to the underlying subbasin management group, make sense? Are there apparent opportunities to simplify? Are adjustments needed to any of the specific allowances?*		
Again, preference is to see no reduction or averaging or altering in wetlands in subbasin group 1, 2A/2B. I like that there is a minimum buffer size, but I worry if 25% of a buffer can be reduced taking it from a functioning buffer width to a more compromised buffer width. Again, different buffer sizes do different things and it would be good to be aware of what is expected of these buffers (filtering storm water, providing shade, etc), because you can reduce beyond a certain threshold. I know that is cracking open a whole PhD study but I think it could be good to put some thought into it so that we are aware when we cross over a function threshold (ie: 75' provides X sweet of benefits and going below 60' means you only get Y benefits.) I'm thinking of this body of work (https://salishsearestoration.org/images/d/d1/May_2003_riparian_best_available_science_puget_lowland.pdf) regarding riparian buffers. I haven't stumbled across anything similar for wetlands but I do know WDFW priority species and habitats has document regarding reptiles/amphibians that use that type of habitat. http://wdfw.wa.gov/conservation/phs/mgmt_recommendations/ Again, not looking to lead you down the path of research but I am wary of making reductions without understanding what those consequences are.	B. Ledoux, King County (7/6)	Variable allowances (and protections) maintained in July 2017 Draft – however, are updated to further restrict the extent and/or mitigation expectations for any allowed alterations. See Tables 3 and 4 (Wetlands) and 5 and 6 (Streams) in updated Code for specifics on additional proposed revisions.

Comment	Commenter	Response
I think buffer reduction should be the very rare exception and only used when absolutely no other feasible alternative is available. Changing to Net Density, defined as removing the sensitive area AND 100% of the standard/unaltered buffer from the lot yield calculation will significantly reduce the frequency of averaging and reduction. Agree that averaging would be preferable over reduction as long as it is minimal. I don't feel comfortable with any alterations occurring to category I, II or III wetlands and only under extreme circumstances for category IV. BAS does not support alteration. If fill or other mitigation options exist, they will be requested and expected and become the norm. Conservation Groups 2B and 2C and even 3 still have areas that need to be protected. The more isolated sensitive areas in these groups are, the more critical it is to protect them since they will be an oasis in our urbanized city. Duvall residents are very concerned that the rural atmosphere that gives our City its identity is rapidly disappearing. The community doesn't want to sit in horrible traffic for hours, cross the beautiful valley and then enter our urbanized town, void of any natural areas. The wildlife in the area need these isolated areas protected and not "mitigated". I don't think the Watershed approach is applicable here – the lower conservation areas already have higher density zoning designations (which put stress on adjacent sensitive areas) and further compounding the environmental impact by mitigating the sensitive areas is irresponsible. This is not what our community wants and is not supported by BAS.	J. Knaplund (7/10)	Preference for averaging added to updated July 2017 draft Further restricted allowances, both based on Wetland category and underlying subbasin management group.
Makes sense to me.	A. Ockerlander (7/11)	
Again I am not a SME (subject matter expert) here but before changing the limits I would like the group to think of the homes and buildings already in place that were built prior to the protection of sensitive area. While we cannot go about destroying homes that have already been built I would prefer accommodating for that and more in future plans. Hence reiterating that buffer reduction should not be reduced but	B. Vijay (7/10)	

Comment	Commenter	Response
rather accommodate for developments already in place too. What the buffer should look like is something I would defer to a SME as I do not have an idea to working vs non working ones, 50 vs 100 feet, deciduous vs evergreen trees etc		
I think simplicity lies in not allowing reductions, incentives, etc. to detract from the goal here. The goal in my eyes is to use BAS tied in with community desires to revise the code. I feel like there is precious little space left in Duvall that this will apply to, so it is of the utmost importance to not leave enough wiggle room in the code to give away more of our sensitive area buffers, which in my view chips away at the rural character of our city.	A. McHenry (7/10)	
As a planner and wetland scientist working in this region for over 25 years, I have found the best protection is a strong and very clear and simple to administer code with brightline provisions that clearly cite Ecology [and] Corps standards and does not allow for sliding-scale buffers based on pre-existing impacts or other systems. The future of Duvall deserves a healthy environment – this is one way to protect what is left of it.	J. Walker (CC; 7/6)	
Regarding proposed Table 4. Subbasin Management Group Alteration Standards: This is very confusing. What are the impact to mitigation ratios? How are they justified under our BAS? Is this in addition to prescribed ratios?	J. Walker (CC; 7/10)	
TOPIC: Stream buffer widths (14.42.320)		
I was looking through the proposed buffers and noticed that some creeks have a proposed 50' buffer. I'm uncomfortable with this as, for example, Thayer is a coho stream and the Feds are recommending a minimum of 100' on all salmonid streams. The WDFW recommends buffers ranging from 100-200' for salmonid streams and NMFS compromised and released the table suggesting their minimum is 100' (which is why Ecology grants won't fund buffers smaller than that). I would like to entertain a minimum of 100' of buffer on all salmon bearing streams, including coho. I feel it will be critical to have the minimum buffer of 100' for salmonids, especially if there is potential for buffer averaging/reduction. I may be missing something but I feel the least that can be done is the minimum protection for	B. Ledoux, King County (7/6)	Standard Stream Buffers (section C) are as follows: 1. SMP for Snoqualmie River 2. Salmon bearing streams—one hundred (100) feet; 3. Other fish bearing streams—seventy-five (75) feet;

Comment	Commenter	Response
salmon. I know there are smaller buffers but those are for water quality benefits, not for habitat.		4. Nonfish-bearing streams—fifty (50) feet; Performance Based buffers (section E) allow reduction below this, but only with very specific enhancement measures (and this portion is is also being scrubbed based on changes in actual conditions – and new SMP)
TOPIC: Habitat Corridor protection and potential use of incentives		
Response to Meeting #4 notes/summary: I don't agree with the characterization of this section of meeting notes - that the "*group indicated that the following incentive approaches could be the most useful*:". I don't recall any enthusiasm for the incentive approach and more concerns expressed that the incentives would further put stress on the environment since they would all increase the intensity of the developed areas. "*INCENTIVES to encourage and reward implementation*" was not an idea that came about during any of our committee working groups. This idea was brought forth privately from a political viewpoint and there was not a consensus or even a discussion within the group whether incentives are necessary or desired. Specific incentives listed	J. Knaplund (7/10)	Incentives approach for habitat corridors eliminated from July 2017 Draft, based on Advisory Group input. See also comment / note within Draft SAO.
• *"flexibilities for narrower streets/ROWs (reduced infrastructure costs)"* Specifically, there was a strong concern raised about the safety of narrower streets/ROWs. I second that concern. With the reduced lot sizes in new developments, there will be many children using the road as their playgrounds and narrower widths reduce sight lines. Often in the new developments, there is less room on the driveway to park vehicles, so the vehicles are lining the streets, this makes it nearly impossible for emergency vehicle access and could result in a life threatening delay in response.		

Comment	Commenter	Response
• *"Reduction in minimum lot size (along with changes to how density is calculated across a site)".* The minimum lot size for our LEAST dense zone of R4, is at 6,000 square feet. The community is already very uncomfortable with these small lot sizes, especially since most developments build out utilizing the minimum sizes. A 6,000 square foot is typically pushing the limit of 60% lot coverage maximum. It does not seem feasible to reduce this lot size further. In addition, for the higher density zoning with even smaller minimum lot sizes it is unrealistic to incentivize via a lot size reduction. Note that I feel the same about incentivizing with reduced setbacks. It just isn't feasible with our current setbacks that area already uncomfortably small and leaving very little pervious surfaces. (note that I do not understand the statement inside the parenthesis "*along with changes to how density is calculated across a site*" is it being suggested that we alter the definition of net density as an incentive?)		
• *"Allowing for "cottage development" as an approach to minimize lot sizes".* I think it is too early to decide if cottage-type development is what our city feels comfortable with. I would discourage including any incentive related to "cottage development" until more study has been done on how these developments turn out.		See response on previous page.
The only feasible way an incentive of smaller lot size and/or setbacks could work, would be for the standard minimum lot sizes and setbacks be increased across the board. In that case, an incentive reduction capped at the current minimum lot sizes and setbacks could be implemented. I feel strongly that the community would only find this incentive provision palatable if the minimum lot sizes and setbacks were increased and the new incentivized minimums match what is current. I suggest increasing the minimum lot size by 1,000 square feet for R4 through R8. The setbacks (front, back, side) should be increased by 10 feet for R4/4.5 and increased by 5 feet for the remaining zoning districts. In addition, to balance this change, the minimum lot frontage width would need to increase as well by 10 feet. I think this would be a reasonable approach to incentivize the wildlife corridors.	J. Knaplund (7/10)	

Comment	Commenter	Response
Habitat Corridors & Incentives: In my opinion without providing incentives we are seeing quite a bit of growth in our community which is reflected in crowded roads, schools and other infrastructure. I may have missed a meeting which spoke about incentives • *"flexibilities for narrower streets/:* As it is in some of our neighborhoods even mine for that matter if there is a car parked on one side of the street it forces other traffic to become a one-way street and cars need to take turns in order to cross each other. In our neighborhood, we have known each other for years and given our rapport and common courtesy and also that the neighborhood is small, this isn't an issue. However, not knowing how large the newer developments may be and given that they are new, this only intensifies the worsening traffic and more room for accidents that can be avoided. Also, given the fact that there are younger families moving in, you would need wider roads for them to be able to move around and play in. Hence in my opinion I do not think it prudent to provide opportunity to build narrower street • *"Reduction in minimum lot size (along with changes to how density is calculated across a site)".* The biggest incentive to move to Duvall is the perceived vastness and open space and I do not think citizens would be in favor of this. From personal experience when we were looking for homes, we were in Mill Creek and were alarmed at the size of lots in comparison to homes available and as a result that city in my opinion is just a concrete jungle. I would not alter the minimum lot size we have defined • *"Allowing for "cottage development" as an approach to minimize lot sizes".* I am not sure what this is, if this is similar to the new development across from Taylor park, I am not for it. A whole development in that format would be nothing but an added burden on our infrastructure and honestly an eyesore While the discussion has primarily been in trying to increase our green space, open space, corridors, I am not sure how providing incentives to developers is going to benefit our community	B. Vijay (7/10)	

Comment	Commenter	Response
TOPIC: Habitat Corridors		
The concept of wild life corridor is not currently considered a sensitive areas designation. So when we plan for them in developments, how are they determined ? And would the trail behind my house cutting through the wetlands, be considered an example of a wildlife corridor ?	D. Brudnicki (7/12)	They would not be treated the same as NGPAs, except where a developer chooses to extend NGPAs between protected sensitive areas, establishing contiguous tracts. Habitat Corridors would not be excluded from calculation of Net Site Area (for density calculations) for example.
TOPIC: Use of Incentives within the SAO		
I am concerned about the amount of recap on incentives as I thought when we discussed it, it was more of a brainstorming for potential issues developers might have with these changes. But none of them seemed to be good options. I understand that developers (big and small) will take whatever incentives they can- and as they should, they run businesses, I have no problem with that. I, personally, would err on the side of conservatively offering incentives, rather than offer so much that all we have discussed and accomplished in our committee can be rendered next to null. That's not meant to be an exaggeration, but rather a reference to whether a true statistical improvement still exists on a lot after all of the "incentives" are used (because if they exist in the code, they will be used). I do like the opportunity to enhance a low functioning buffer and am open to seeing an incentive there, but would want an expert, ecologist, etc. to make the distinction of when this is needed and what kind of buffer reduction would be acceptable ...but on a case by case basis. If I recall correctly, a critical part of enhancement would be that it is maintained for five to ten years. So whatever that ideal maintenance number of years is, I'd like to see that in the code as well.	A. McHenry (7/10)	Incentives approach eliminated from Habitat Corridors section within July 2017 Draft. Allowances for development flexibility further eliminated and/or reduced – based on Advisory Group input.
TOPIC: Definitions (14.42.700)		

Comment	Commenter	Response
"Director" definition. Please describe "other responsible official". Who determines if a person is "responsible? I suggest removing this as it is too open ended.		Proposed updated definition: "Director" means the director of the City planning department ~~or other responsible official~~, or his or her designee. ~~other city staff granted the authority to act on behalf of the director~~.
"Reasonable Use" definition. The term "reasonable use" is being used to define reasonable use. I think there needs to be a better understanding of what reasonable use means, since it feels like a circular definition. Is there an outside agency document that we could refer to that describes what "reasonable use" is?		Proposed updated definition: "Reasonable use" means a mechanism by which a local jurisdiction may grant relief from code requirements where compliance would leave no minimum economic use to which a property owner is entitled under applicable state and federal constitutional provisions in order to avoid a taking and/or violation of substantive due process.
TOPIC: General comments (touching on multiple code provisions)		
As we pursue more detailed and perhaps tougher guidelines regarding sensitive areas and tree protection, we will be triggering development to alter their lot foot print. This could lead to small lots with larger houses, which then affects the look and feel of a development. The result being a more dense build out with less space between houses. Which is something we should always keep in mind as a result of our policy direction should we choose to have more regulation and tighter standards. It is important to be balanced in how we create these policies. Otherwise we will have unintended consequences.	D. Brudnicki (7/12)	Comment noted. New approach for site calculation (further reducing the expectation for maximum site density for most subbasin management groups) might be helping the City to get at this situation?

Comment	Commenter	Response
From 7/7 email from D. Brudnicki, related to Tree Protection: 2. Does, the new tree protection updates allow for more or less flexibility? 3. In regards to tree protection when developing in the city. I have always thought that it would be a better solution to have a policy that requires developers to work with home owners on installing a tree landscape plan as part of the house purchase. That way the home purchaser is able to select trees that they actually want. And developers could work with arborists to asses and get good recommendations on the appropriate trees and understory for successful plantings. This would save the home owner a lot of effort and money, while allowing the developer flexibility to create a development that has a nice plan that is not hindered select trees that homeowners either take down or they fall down. A lot of folks move in and they don't like the trees that are existing so they apply for a permit to remove them. And in my neighborhood most of the trees that were left, fell down. However the trees we planted are doing well and thriving in fact my 6' incense cedar is now over 20' tall. My neighbors evergreens and maples are thriving. So maybe we should rethink how we manage trees. So that developers have flexibility to build urban design that has good flow, nice storm water elements, and enhancements. The home owner gets trees that are healthy, are able to thrive and create a better canopy in consideration for design. The results would probably deliver even more than we want for canopy cover.	D. Brudnicki (7/7)	Comments appear to be focused on Tree Protection – tabled for re-initiation of that effort

Other Review Comments (provided by interested reviewer not part of the Advisory Group)

Comment	Commenter	Response
TOPIC: Relationship to Other Regulations (DMC 14.42.XXX – New Section]		

Comment	Commenter	Response
Standard "B", Regarding adjacent / overlapping sensitive areas and how protections are determined: In an instance where a Cat IV wetland occurred adjacent to Cat III wetland, would both have associated CAT III buffer?	J. Walker (7/6)	This was not the intent of this proposed language; intent was to ensure that where various types of SAs are overlapping, the standards for the SA that provide the highest level of protection should apply. Revision made to clarify.
TOPIC: Site Density Calculations for Subdivision		
The following comments are in response to specific Meeting #4 Follow-Up Questions: • *Should calculation of Net Site Density only be applied differently for Group 3?* ***or*** • *Should calculation of Net Site Density be applied differently (using a factor) for each different Subbasin Group?*		
Buffers fall under BAS and are considered in ecological processes and services for sensitive areas; an impact to any buffer must require review under the sensitive areas code and therefore buffers as well as the protected resources are sensitive areas and shall qualify for protective standards based on ecological functions. The approach of addressing buffers as sensitive areas is common in city ordinances and is justified under numerous BAS sources to allow for buffer functions to be maintained for the protected resources. There is absolutely no justification under sensitive areas BAS to incur allowable losses of sensitive areas functions. If excluded and adopted, a code provision on this basis will be easily appealed upon code adoption due to lack of scientific justification and contrary goals to the sensitive areas protection goals of the chapter. Net density must exclude SAs, inclusive of buffers.	J. Walker (CC; 7/6)	See topic response in main table (AG Comment table) above
TOPIC: Notice Requirements / Placement of Sensitive Areas within Tracts:		
The following comments are in response to specific Meeting #4 Follow-Up Questions: • *Should there be allowance for any types of sensitive areas (or sensitive areas on smaller development sites) to be protected through placement in a separate easement (as with current DMC 14.42.100.B.2) as opposed to through placement in a separate tract (as generally required by DMC 14.42.100.B.1)?* • *Noticing – Is any additional noticing necessary, besides what is already required by code?*		

Comment	Commenter	Response
Tract / Easement: Tracts for plats and short plats is the standard practice in most all jurisdictions, except for single lot redevelopments. If a single lot that has a critical area redevelops, it would not make any sense to require the expense in creating a separate tract.	J. Walker (CC; 7/6)	
Additional Noticing: Notification to Ecology/WDFW and Corps should be required for any work in Waters of the State or Waters of the US, as applicable. The reality is that if other agency consolation is not done, Cities can approve impacts that are infeasible with these agencies and this sets unreasonable development expectation and wastes much public staff time and public resources to process development applications that need to be modified (or withdrawn) due to other agency conditions. As a reviewing wetland scientist for 5 local cities, as a condition of plat approval I commonly require early-coordination and proof of Ecology and Corps of Engineers correspondence/approvals as part of the acceptance of any impact and mitigation plan.	J. Walker (CC; 7/6)	Comment noted Some additional research on options from other jurisdictions regarding this topic to be completed before next Advisory Group meeting. Any final recommended changes to be presented and discussed at that time.
TOPIC: Wetland Impact Allowances (DMC 14.42.220)		
Fill exemption for CAT IV isolated wetlands is contrary to BAS and GMA.	J. Walker (CC; 7/6)	Revision made to provide consistency with Ecology guidance (BAS) for wetlands
TOPIC: Buffer Reduction Allowances for Wetlands and/or Streams		
The following comments are in response to specific Meeting #4 Follow-Up Questions: *Should allowance for wetland (and stream) buffer reduction – with limits identified above – be maintained?*		
The protection of full required standard buffers is already a balance of many competing interests and standard buffer dimensions must be maintained to their maximum functional extent pursuant to justifiable standards in BAS. Buffers should also be increased where they are disturbed since the existing functions are compromised, and BAS allows this.	J. Walker (CC; 7/6)	See comment responses above.

Comment	Commenter	Response
Buffers should not allow to be reduced because of existing disturbance, and disturbance characteristics should not be placed in code since they can incentivize landowner degradation of sensitive areas to gain more buildable lots. Buffers must be protected to the maximum extent that science can justify, and even at that many ecologists can cite evidence to show that full regulatory dimensions of buffers are significantly lacking in the Puget Sound region. If blanket reductions are stated in code, and not based upon current science, this component of code can be appealed. The sensitive areas code is a protection ordinance to secure a legacy for our last remaining natural systems in our community based upon scientific standards so they are protected from development, it is not an additional incentive tool to decimate more of our environment in the cause of development.		
TOPIC: Variable Allowances and Protections based on Subbasin Management Group (Watershed Plan)		
The following comments are in response to specific Meeting #4 Follow-Up Questions: *Does the new approach for sensitive areas / buffer alteration allowances, tied to the underlying subbasin management group, make sense? Are there apparent opportunities to simplify? Are adjustments needed to any of the specific allowances?*		
As a planner and wetland scientist working in this region for over 25 years, I have found the best protection is a strong and very clear and simple to administer code with brightline provisions that clearly cite Ecology [and] Corps standards and does not allow for sliding-scale buffers based on pre-existing impacts or other systems. The future of Duvall deserves a healthy environment – this is one way to protect what is left of it.	J. Walker (CC; 7/6)	
Regarding proposed Table 4. Subbasin Management Group Alteration Standards: This is very confusing. What are the impact to mitigation ratios? How are they justified under our BAS? Is this in addition to prescribed ratios?	J. Walker (CC; 7/10)	
TOPIC: Habitat Corridor Protections		
We ran a preliminary assessment on the Quadrant Duvall Phase II site with the Wildlife Corridor Assessment. It is very rough and we made some assumptions for construction practice as well as other common practices which would likely be incorporated into project implementation. It appears as though the Duvall site would score at 19.5	Email from Jon Pickett, Soundview Consultants LLC, provided	Comments will be considered in additional review and updates to Habitat Corridor Management system

Comment	Commenter	Response
Wildlife Corridor score currently, and the development would receive above a 30 point credit depending on final site plans so it would appear the site plans would score above the needed score, granted this is very preliminary and we are making assumptions. Overall comments for the Wildlife Corridor are: 1.1 – The proximity to sensitive area does not take into consideration the rating or applicability of the nearby sensitive area. A small stream would receive the same points as a farm pond, Cat IV wetland would be the same as Cat I wetland, Type S stream same as Type N. 1.3 – The question does not take into consideration vegetation type or use. It does not specify agricultural vegetation cover, invasive species vegetation cover, sites with heavily used anthropological impacts below the canopy (trails, play areas, etc.). 2.1 – This question could be subject to open-ended interoperation. There needs to be a reference manual to avoid overcounting habitat types. 2.1-2.8 – (except 2.7) No basis on quantity per acres. A 20-acre site could score higher than a 1-acres site which may have higher value, consequently a 1-acre site could be under scored. Density of features and how it would play our need to be considered in the context	in consideration of implications on Quadrant Homes development proposals (forwarded to L. Thomas on 6/16/2017)	
• While the area is not a buffer there should be a clear zone (fences, etc.) • Allowances for reduced sidewalk/landscape strip and no parking on either side (we talked about that at the meeting last night). • We do need to update the map to refer to it as a Habitat Corridor Management Area	B. Benson (Duvall Public Works, 6/14)	Comments noted and will be incorporated into updated Habitat Corridor Management form (and potentially code – as far as ROW allowances and/or fencing requirements)
ADDITIONAL COMMENTS ON PROPOSED CODE UPDATES		

Comment	Commenter	Response
I reviewed the suggested changes for the code and provided minor comments throughout. The biggest and most impacted change has to do with wetland and stream buffers and allowable buffer reduction Code 14.42.210. In the current code you are allowed to reduce a Cat IV and Cat III buffer up to 50 percent. With the recommended changes to the code, depending on the Subbasin Management Group, a buffer may not be allowed to be reduced/averaged or up to a maximum of 25 percent. Category IV wetland fills under 2,500 square feet. They added the term isolated meaning if there are surrounding wetlands then it will be considered an associated wetland to a mosaic and harder to get approval to fill.	Email from Jon Pickett, Soundview Consultants LLC, provided in consideration of implications on Quadrant Homes development proposals (forwarded to L. Thomas on 6/16/2017)	Comments reviewed
Comments within June 2017 initial working draft code	Code comments provided by J. Pickett (Soundview) and J. Walker, Duvall CC)	Comments considered during code updates.

Previous Comments / Emails (before Initial Draft provided in early June 2017)

J. Knaupland, 5/8 email to Aaron and Lara: Good afternoon, Aaron. Please see my comments below:

BAS Memo:
Page 6 (bottom): ES 16.6 For significantly altered or isolated wetlands with limited ecological functions, consider allowances for land development provided that adequate compensatory mitigation is provided
Is this consistent with BAS? Is it possible that isolated or altered wetlands could be even more important to the environment? Could it be that altered wetlands, if rehabilitated would be of very significant ecological function. In addition, it seems likely that isolated wetlands might be an oasis due to the distance to other wetlands.
Page 6 (bottom) - 7 (top): "For example, within Watershed Management Groups 1 and 2A, very limited buffer modifications (e.g.buffer reduction or buffer averaging, an/or allowances for certain uses within buffer areas) **should be allowed**, except through a variance process."
*I believe you intended this to say "**should NOT be allowed**, except through a variance process."*
Page 11 (last paragraph): Frequently Flooded Areas - Relationship to SMP - designates these areas to Passive Recreation and Conservancy" and "Public Recreation".
How does this affect current and future use of Taylor Landing and McCormick Park?
Page 13 (bottom): For example, it may be more appropriate to apply fill and grade, land clearing and stormwater management standards to areas that are susceptible to surface soil erosion.
Need clarification on what this implies and why BAS suggests this approach.
Page 14 (bottom): Watershed Plan Consistency for Erosion Hazard Areas.
How would these strategies have impacted the development on North Hill?
Need an additional section in the BAS overview that relates to density and impervious surface limits in areas surrounding Sensitive Area and in higher priority Management Groups. Include related Comprehensive Plan and Watershed Plan goals.
From the Comprehensive Plan
LU 3.8 consider net density to be the density of residential development excluding such items as; environmentally sensitive areas, right of way, and or stormwater facilities.
H3.6 Evaluate alternatives to gross density when calculating the allowed residential density for each zoning district. Alternatives should consider approaches that ensure compatibility in housing type and scale with existing neighboring developments.
ES 20.5 Minimize impervious surfaces associated with off-street parking lots, driveways and subdivision designs.

From the Watershed Plan
W 1.5 (same as ES 20.5 above)
Page 5-2 The impervious surfaces limits should be reduced for specific zoning designations within Management Groups 1 and 2

*Many of these goals can only be reached if sensitive areas and their standard buffers (prior to any mitigation or alterations) be excluded from the density calculation. Specifically, much of the UGA and UGAR are in Management Groups 1 and 2 and have significant sensitive areas that need protections. If these sensitive areas are not excluded from the calculation of density, the actual density on the buildable land will be much higher than intended/optimal based on BAS. For example, if a 10 acre lot that is zoned R4-4.5, current regulations would allow 10*4.5 =*

45 residential homes to be built. Lets assume that 10 acres contains 4 acres of sensitive areas and buffers, then currently, those 45 homes would be allowed to be built on the remaining 6 acres of land. The resultant true density on the remaining 6 acres would be much closer to 45/6 = 7.5 which is almost double the density than intended. This will result in much higher impervious surface coverage (in Management Groups 1 and 2 especially) than recommended by the Watershed Plan.

Addition of regulations that mentions impervious surface limits as it relates to sensitive areas would be appropriate.
GAP Analysis Matrix*:*

14.42.020 - Applicability
D: Exceptions - *are these all appropriate and typical?*
E: Land that is located wholly or partially within a sensitive area. *Would be helpful to add net density reference since this is very relevant.*

14.42.030 - Sensitive area review.
Who is "The Director" and "The Decision Maker"?

14.42.050 Allowed Activities (F.2.e)
Replace hazard trees 1:1 - *is this consistent with Tree protection standards?*

14.42.070 - Reasonable Use
seems to contradict 14.42.020 E.

14.42.090 Density Credits
Sensitive Areas and their associated buffers, prior to any mitigation or alteration should be excluded from the density calculation. Revise section A to say "may NOT be used in the calculation" and specify that this calculation should be done before any mitigation or alteration occurs to the sensitive areas. See comments above in the BAS overview.

14.42.110 Temporary marking, permanent survey marking fencing and signs.
Ensure placement in inspection of sensitive area markings PRIOR to any clearing and/or grading. I believe North Hill grading intruded on sensitive areas/open space, could this have been avoided?

14.42.120 Building Setbacks
Section mentions both 10' and 15' setbacks. Which one are we going to go with. I prefer 15'...
C.4 - should we allow impervious surfaces to abut sensitive area buffers? Note impervious surfaces guidance in BAS, Comprehensive Plan and Watershed Plan.

14.42.130 - Mitigation
Require that mitigation occurs within Duvall and close surrounding area.

ADD SECTION for IMPERVIOUS SURFACE LIMITS!

14.42.220 -Wetland Alterations
(B) & (G) Do we want to allow surface water discharge, roof runoff and stormwater discharge into wetlands and buffers? Is this consistent with BAS? Add note about discharge needing to "meet freshwater state quality standards" (see language used in 14.42.330 (E.4)).
(H) I think we should allow raised platforms and walkways in buffers.
(I) and (K) What does BAS have to say about filling category III and IV wetlands?

14.42.230 - Wetland review and reporting requirements
(B.4) How to ensure identification of off-site sensitive areas and buffers within 300 feet?

14.42.240 - Wetland mitigation
(E) Why are mitigation banks not subject to replacement ratios?

14.42.330 - Streams allowed uses
(E) Should we allow stormwater discharge into buffer? What does BAS say about this?
(H) Why no trails in stream buffers? Maybe allow trails with similar rules to Redmond Watershed Area? such as no dogs allowed? allows for closures if need to restoration.

14.42.340 - Habitat Conservation Areas - Ponds and Lakes
Is a 50' buffer adequate. Could you add limitations so that only a % of shoreline can have 50' buffer and leave a larger buffer for remaining shoreline so that entire lake is not surrounded by development. How will this impact Lake Loutsis.

14.42.620 - Critical aquifer recharge areas review
Consider adding density and impervious surface limits in these areas.

Definitions
Possibly add definitions for "Director", "Decision Maker" and "Density Credits"

Thank you,
Jennifer Knaplund

Beth Ledoux 5/25 email - to Aaron and Lara:

Hi Lara and Aaron,

Thanks for the opportunity to comment. I made comments within the google document as suggested. I didn't see a place to comment on the Habitat Corridor scoring sheets/ project choice so I am providing feedback here.

1.1 – be clear about aerial photographs – maybe mention google maps or something by name. I'm worried folks might use aerials that don't have appropriate scale or something.
1.2 - it's pretty wordy and a little confusing. I think using words like "ornamental" might be tricky as well. What does that mean? If they plant maples does that not count? I think this needs to be simpler and more clarified. It may be more important to clarify noxious weeds – would hate to see someone clarify a reed canary patch as "scrub shrub"

2.1 – again, asking a citizen to define "mature" may not get the results you are after. Maybe have some height requirements?
2.5 – I would also have a note about noxious weeds on this – reed canary grass, blackberries etc could get counted unintentionally

- I worry that areas that have low habitat corridor scores will not be encouraged to make good choices for the landscape – some of the management actions seem like they would be good for all property owners
- I believe staff will double check these scores? Could see folks trying to "get away" with some things.
- I know this is wildlife corridor but I'm thinking about how to manage "nuisance wildlife" like deer (no real natural predators in these parts), raccoons, even coyotes. Are there management recommendations for those? I just know people wage war against these animals and could be a "flash point". Just a thought.

Thanks again – see you on the 13th.

Beth

Comments from A. Ockerlander (Advisory Group) provided to L. Thomas on May 25 – review of BAS Memo and Gap Analysis matrix:

DRAFT Comments: SAO UPDATE
14.42.010 Purpose

I would like to see this section with language consistent with the 2015 Comprehensive Plan, as well as the introduction of buffer protection associated with sensitive areas. Common sense alteration to begin to implement consistencies and consistent language across city policies.

14.42.020 Applicability
Consistent with BAS and GMA – no suggested changes.
14.42.030 Sensitive Area Review
Consistent with BAS and GMA – no suggested changes. While some are concerned about the director having say, the director is obligated under professional standards and the law to uphold regulations are enacted.
14.42.040 General Exemptions
I concur with the language change recommendation from the consultant, the challenge with existing language is that it does not provide specification as to who is responsible if the requirement is not met and what the mitigation should be. This is a step in the right direction to create personal/developer accountability.
14.42.040 (B) General exemptions
Support changes to make city code consistent with state law.
14.42.040 (D)
Exemptions
This does need clarification, it is one of those areas that currently creates confusion and may be resulting in unintentional, inconsistent reduction in sensitive area buffers on existing developed properties.
14.42.050(F) Allowed Activities

I would like to see this language revised to be in line with BAS
14.42.060 (D) Sensitive Area Studies
I would like to see this section be more consistent with state law, and potentially see the City utilize the lists provided by Commerce as a baseline for what should be included.
14.42.070 Reasonable Use
No changes, consistent with BAS/GMA
14.42.080 Appeals
No changes, consistent with BAS/GMA
14.42.090 Density Credits
No changes, consistent with BAS/GMA
14.42.100 Notice on Title
This appears to be a good suggested change to clean up existing code

14.42.110 Temporary marking, permanent survey
I like the recommended change, with appears to bring it in line with BAS
14.42.120 Building Setbacks
I would like to see the languages changed to be consistent, and the revision of DMC Chapters 14.42 and 14.38 to provide the corresponding building setback/landscape area requirements
14.42.140 Enforcement
Would like to see enforce provisions and the ability to issue a stop work order in this section, consistent with the consultants recommendation
14.42.200(A) Designation, Rating, and Mapping
Support updated to become consistent with state law and Ecology guidance
14.42.210 Wetland Buffer Standards
Would like to see revisions to include provisions for specific wetland buffer modifications
14.42.210(A) Wetland Buffer Standards
Support this change to make the city standards consistent with state guidance
14.42.210(A) Wetland Buffer Standards
Support this change to make the city standards consistent with state guidance
14.42.220 Wetland Alterations
Agree with suggested revision to be in line with BAS and state and federal guidance
14.42.220(F) Wetland Alterations
Revise for consistency with BAS
14.42.220(H) Wetland Alterations
Tend to concur with the consultant's recommendation
14.42.240(I) Wetland Mitigation
Concur with revising section 1 to include site protection mechanism
14.42.250(A) Wetland Mitigation Plan
Support revision to be more consistent with BAS
14.42.260 Wetland Mitigation Monitoring

No suggested changes as it is consistent with BAS
14.42.300(C) Designation, Mapping and Classification
Update to be compliant with GMA
14.42.310(A)
Support changes to stream classifications
14.42.320 Stream Buffers

Support revisions for specific stream buffer modifications as outlined in the Watershed Plan – to the extent it brings the section into consistency with BAS
14.42.320(C) Stream Buffers
Support the changes as they are feasible, to be consistent with current BAS
14.42.320(E) Stream Buffers
Move forward with updating performance-based stream buffer standards
14.42.320(F) Stream Buffers
Support updating the standards to align with BAS
14.42.330 Streams Allowed Uses
Update to make more consistent
14.42.330(C)
Streams Allowed Uses

Revise to be consistent with WDFW guidelines
14.42.330(D) Streams Allowed Uses
Support the change to ensure internal consistency
14.42.330(H) Streams Allowed Uses
Support changing to ensure internal consistency
14.42.340 Habitat Conservation Areas – Ponds and Lakes
No suggested changes as it is consistent with BAS
14.42.360(C) Review and Reporting Requirements
Revise with suggested wetland reporting requirements
14.42.370 Management Standards
Support adding a new section for contingency plans and revising to address specific habitats and species
14.42.3XX (NEW) Habitat Corridors
Support developing habitat corridors and standards, want to ensure clarity that this is a city policy, not one mandated by the state.
14.42.500 Designation and Mapping
Support consultant recommended changes for internal consistency
Floodplain Regulations are provided in DMC Chapter 14.84
I support changes to bring policy more in line with FEMA guidelines. Primarily as it can help the city if we are ever in a position to need assistance related to flooding.
14.42.600 Designation and Mapping
Concur with changes to provide internal consistency
14.42.610 Standards

14.42.620 Review
Support changes for internal consistency
14.42.620 Review (B
Support changing to be more in line with BAS – need more information on the impact
14.42.6XX (NEW) Activities Allowed
Support addition of section, and using Ecology guidance
14.42.6XX (NEW) Performance standards, specific uses
I like the concept, if it is consistent with BAS and Ecology guidelines

Memo:
Wetlands:
I suggest moving forward with DOE recommendations and guidance to bring the SAO into consistency with both the Watershed Plan and the 2012 Ecology guidance for protection of wetlands. Additionally, allowing a buffer average to 25% appears to be within BAS and would allow some flexibility to ensure reasonable protection of sensitive areas, based on newer guidance.
We should allow small isolated wetland fills only in areas where the Watershed Plan identifies an increase in the intensity of development, with mitigation.
On buffer reduction, wondering if we should develop criteria to allow limited reductions outside of the most critical watershed areas and within certain areas if the criteria developed on BAS supports it.