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**PLANNING COMMISSION
MEETING AGENDA**
Duvall Visitor Center, 15619 Main Street, Duvall
Wednesday, January 11, 2017, at 7:00 p.m.

1. **Call to Order – Flag Salute**
2. **Roll Call**
3. **Announcements**
4. **Approval of Minutes**
 - A. Amended minutes from the September 25, 2015, joint City Council and Planning Commission meeting.
 - B. Notes from the October 19, 2016, City Council and Planning Commission joint workshop.
5. **Citizens' Comments and Requests – Items Not on the Agenda**
6. **Public Hearing(s)**

None
7. **Old Business**

None
8. **New Business**
 - A. Election of 2017 Planning Commission Chair and Vice Chair
 - B. 2017 Comprehensive Plan Amendment Docket – Discussion
 - C. Stormwater Regulation Update – Introduction
 - D. North Urban Growth Area Proposed Annexation – Review
 - E. Sensitive Areas and Tree Protection Regulations Update – Introduction
9. **Presentation**

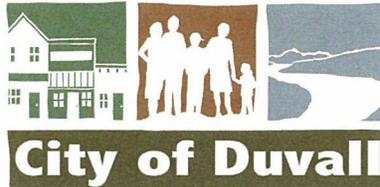
None
10. **Adjournment**

Materials List

- *Agenda*
- *Amended minutes from 9/25/15 meeting and notes from 10/19/16 workshop*
- *Stormwater Regulation update staff report and draft ordinance*
- *North UGA Annexation draft resolution*
- *Sensitive Areas and Tree Protection Regulations: staff memo, RFP, copies of current Tree Protection and Sensitive Areas Regulations*

(Please call Anne Wright-Cunniff [425] 788-2779 if you have any questions or if you cannot attend the meeting.)

Meeting Room is Wheelchair Accessible. Americans With Disabilities Act - Reasonable Accommodations Provided Upon Request - (425) 788-2779



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**2016 Budget Special Meeting and Joint Workshop Minutes
City of Duvall Planning Commission and City Council
September 29, 2015
5:30 P.M. - Duvall Visitor Center
15619 Main Street NE, Duvall**

2016 BUDGET SPECIAL MEETING

The Special Budget Meeting was called to order by Acting Mayor Pro Tem Ockerlander at 5:35 P.M.

Roll Call: Amy Ockerlander, Scott Thomas, Gary Gill, Becky Nixon, Jason Walker, Leroy Collinwood (absent: Dianne Brudnicki)

Staff Present: Dean Rohla, Lara Thomas, Jodi Wycoff, Anne Wright-Cunniff

a. Budget Presentation – Estimates & Projections

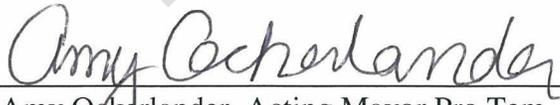
Dean Rohla, Finance Director, gave a presentation which outlined projected revenues, budget assumptions, factors that affect the 2016 budget and key projects for 2016. Mr. Rohla also reviewed the tough decisions that have already been made while preparing the 2016 budget including items that were not included in the proposed budget. Lastly, Mr. Rohla reviewed the next steps in the budget process including public hearings and departmental presentations.

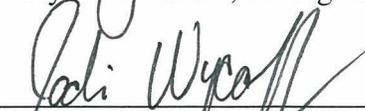
b. Public Hearing: Revenue sources for the 2016 Budget, including consideration of possible increases in Property Tax Revenue

5:55 PM: The Public Hearing was opened.

There were no public comments.

Public Hearing will be continued to the October 20, 2015 regular City Council Meeting.

Signed 
Amy Ockerlander, Acting Mayor Pro Tem

Attest 
Jodi Wycoff, City Clerk

JOINT WORKSHOP MINUTES BEGIN ON FOLLOWING PAGE

PLANNING COMMISSION/CITY COUNCIL JOINT WORKSHOP

Date: September 29, 2015

Time: 6:00 pm

Place: Duvall Visitor Center, 15619 Main Street NE, Duvall WA 98019

Commissioners Present: Ronn Mercer (Chair), Margie Coy, Jim Deal, and Veronika Williams

Commissioners Absent: Ryan Deason, Eric Preston, and Dick Winn

Councilmembers Present: Will Ibershof (Mayor), Leroy Collinwood, Gary Gill, Becky Nixon, Amy Ockerlander, Scott Thomas, and Jason Walker

Councilmembers Absent: Dianne Brudnicki

Others Present: Lara Thomas, Planning Director; Boyd Benson, City Engineer; Matthew Morton, City Administrator; Reema Shakra, Planning Associate, ESA; and Anne Wright-Cunniff, Administrative Assistant

1. Call to Order – Flag Salute

The Planning Commission/City Council workshop was called to order by Commissioner Mercer at 6:09 p.m.

2. Announcements

Staff had no announcements to share.

3. Approval of Minutes

Approval of the minutes from September 2 and September 16, 2015, will be held over until the next meeting.

4. Citizens' Comments and Requests – Items not on the Agenda

None

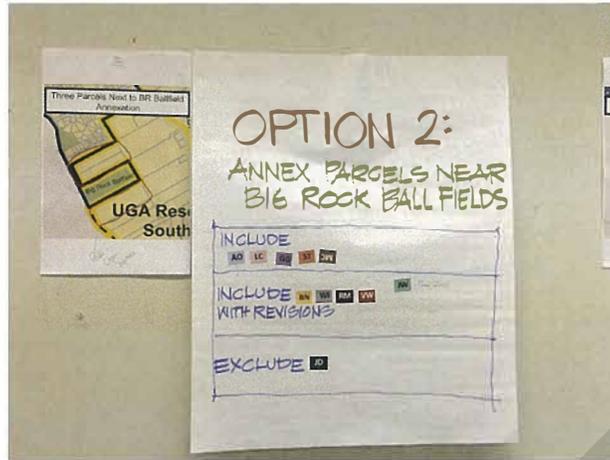
5. Public Hearing

None

6. New Business

Discussion and Vote for New Comprehensive Plan Preferred Future Land Use Map (FLUM)
Ms. Thomas and Ms. Shakra gave a presentation of the Land Use Map Alternatives, briefly shared public feedback (all public comments were included in a packet to the participants), and asked the group to choose a consensus. (The commissioners and councilmembers agreed on a simple majority [six or more].)

Following the overview and discussion, the commissioners and councilmembers voted on eight different FLUM revisions. Voting was conducted by placing personalized stickers on one of three options under each revision: include, include with revisions, and exclude.



The results of the voting are as follows:

	Include	Include w/ Revisions	Exclude	Comments
Annexation of Riverview				
1 School District (RSD) property	10			
Annexation of three parcels				
2 next to ballfield	4	6	1	Revision: park zoning designation
Annexation of Southwest Urban Growth Area (SW UGA)				
3 UGA)	11			
Annexation of North Urban Growth Area (NUGA)				
4 Growth Area (NUGA)	7	4		Revision: review net versus gross density
Annexation of Urban Growth Area Reserve (UGAR) - North				
5 Area Reserve (UGAR) - North		2	9	Revision: keep usable west portion
6 Annexation of UGAR - South	3		8	
Annexation of "South Urban Growth Area" (SUGA)				
7 Growth Area" (SUGA)	8	3		Revisions: possibly extend Commercial designation up Big Rock Road and balance total area with Option 5
Create new land use designations (Residential [R20] and Parks and Open Space [PO]) - update other designations within the city				
8 designations within the city	6	5		Revision: flexible R20 zoning to include 14-20 units per acre

7. Unfinished Business

None

8. Presentation

None

9. Adjournment

Commissioner Mercer adjourned the workshop at 9:11 p.m.



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Joint Workshop Notes City of Duvall Planning Commission and City Council

Date: October 19, 2016

Time: 7:00 PM

Place: Duvall Visitor Center, 15619 Main Street NE, Duvall WA 98019

Commissioners Present: Ronn Mercer (Chair), Margie Coy, James Deal, Eric Preston, and Dick Winn

Commissioners Absent: Mark Weiss; Position 7 is vacant.

Councilmembers Present: Will Ibershof (Mayor), Leroy Collinwood, Becky Nixon, Amy Ockerlander (arrived 7:33 pm), Scott Thomas, Jason Walker, and Veronika Williams

Councilmembers Absent: Dianne Brudnicki

Others Present: Lara Thomas, Planning Director; Anne Wright-Cunniff, Administrative Assistant; Pete Nichols and Bonnie Geers with Quadrant Homes

1. Call to Order – Flag Salute

The Planning Commission meeting was called to order by Commissioner Mercer at 7:06 PM.

2. Announcements

No announcements were given.

3. Approval of Minutes

The minutes from September 28, 2016, were held over until the next meeting.

4. Citizens' Comments and Requests – Items Not on the Agenda

There were no citizens' comments.

5. Public Hearing

None

6. New Business

None

7. Old Business

None

8. Presentation

North Urban Growth Area – Quadrant Homes

Planning Director Thomas gave a brief introduction to and history of the North Urban Growth Area (UGA) Annexation.

Pete Nichols, Vice President of Acquisition for Quadrant Homes, gave a PowerPoint presentation on the proposed development of the North UGA. The presentation included conceptual site plans, architectural examples, and a high-level analysis of the project's cost benefit to the city. Bonnie Geers, Vice President of Community Development and Public Affairs for Quadrant Homes, was also present.

Mr. Nichols and Ms. Geers took questions from the councilmembers and commissioners.

Commissioner Deal asked what consideration would be given to the wetlands in the proposed development area. Mr. Nichols responded that a survey was completed on a portion of the site. No wetlands were found on that site; however, a full, peer-reviewed wetland analysis will be completed before application submittal. Mr. Deal followed up with a question regarding tree protection in the dark green areas of the Conceptual Site Plan. Mr. Nichols responded that the trees in those areas will remain.

Councilmember Nixon asked what the reasoning was behind the reduced width of the streets and lack of planter strips. Mr. Nichols responded that the reduction in street width and planter strips would allow for an additional 12-13 feet in the wildlife corridor. Ms. Geers added that narrower street sections would also mean less impervious area, thereby minimizing stormwater discharge.

Commissioner Mercer asked about lot size and what the anticipated setbacks would be in comparison with the elevation drawings. Mr. Nichols responded that the houses shown in the elevation drawings would be 40 feet wide, set on a 55-foot wide lot, which will provide 15 feet of separation from neighbors' houses, 7.5 feet on each side. Ms. Thomas added that the City requires a 20-foot setback for the garage and 15-foot setback for the front façade. Commissioner Mercer added that it looks like the narrower street will allow for more parking in driveways. Mr. Nichols added that the 110-foot lot depth will also allow for more staggering of homes from the street.

Commissioner Deal asked if, on the lots that adjacent to the greenbelt, the whole yard would be cleared. Mr. Nichols replied yes, the whole 55' x 110' would be usable by the owner.

Councilmember Collinwood asked what the total square footage of the houses would be. Mr. Nichols replied they could be roughly 2400 to 3200 square feet. Ms. Geers added that they like to offer a range of square footage in their neighborhoods to break up conformity and accommodate buyers' needs. Councilmember Collinwood asked how much of the 50% petition does Quadrant have approval from so far. Mr. Nichols replied that they have support from 58% of the assessed value of the parcels, which comes out to eight of the 14 parcels.

Commissioner Winn commented that he was concerned about the street width and the deviation from the City's standards. Mr. Nichols replied that it's narrower than Duvall city

standards but closer to the regional average and added that the lost width can be dedicated to pervious surfaces and larger tree tracts and wildlife corridor.

Commissioner Mercer asked if the 2013 project (Hawthorne) would be a similar street width. City Engineer and Acting Public Works Director Boyd Benson responded that it is very similar.

Councilmember Walker commented in support of the plan to bring in the NUGA as one development instead of creating several neighborhoods piecemeal. Referencing the Comprehensive and Watershed Plans, Mr. Walker commented in support of the reduction of impervious surface. He also spoke in support of the traffic-calming effect of the proposed street plan. He expressed concern that the positioning of the sidewalks does not provide opportunity for street trees in planter strips. He added that he did not see treatment of stormwater aside from traditional methods. Ms. Geers responded that consideration of Low Impact Development (LID) standards and the City's stormwater requirements will be integrated into the project.

Mr. Walker commented that, in anticipation of updates to the City's code, it would be hard to estimate what the net density of this project would be unless we apply existing code. He also commented that the tree retention ordinance is in process of being updated and noted that Quadrant has done a good job of conceptualizing this. He added that the landscape and parks plan are also in the process of being updated. He added that the Council needs to take a look at the city's parks plan to better serve the residents.

Mr. Walker referenced the cost benefit slide and asked what the net benefit would be, compared to the gross benefit stated in the presentation. Mr. Nichols replied that would be available once the Formal Impact Analysis has been completed.

Mr. Nichols replied to Councilmember Walker's comments and questions regarding tree retention and net density that the pre-annexation agreement will bind Quadrant to those standards and regulations. He also replied to the stormwater question and commented that he forecasts an increase in the stormwater fee to address lifecycle issues with the vaults. He also forecasts an increase in the park fee (not shown in the analysis).

Councilmember Thomas asked about impact to neighboring properties, including traffic impacts and traffic flows. Mr. Nichols responded that there would be an improvement to the 275th corridor, as well as buffers. He added that the homes will be similar in product to the existing adjacent neighborhoods. Ms. Geers added the buffers will include fencing and landscaping to help soften the transition.

Mr. Thomas asked who the adjacent landowners' Quadrant liaison would be, and Mr. Nichols and Ms. Geers replied they would be the contacts.

Mr. Thomas asked what the timeline for the project would be. Mr. Nichols responded that he anticipates the annexation process will be complete by end of the first quarter of next year; preliminary plat approval by the end of 2017 or early 2018; and start of construction in the late spring or early summer of 2018. Councilmember Collinwood asked if construction was clearing and grading, and Mrs. Geers added that home construction would take place in late fall or early winter, and home sales would commence in 2019.

Following City Council and Planning Commission questions and comments, Commissioner Mercer opened the floor to audience comments and questions.

Resident John Medina asked where the development accessed State Route 203. Mr. Nichols responded that 275th would, and Planning Director Thomas added that Stephens Street (which ultimately becomes Bruett) would be the main access and would not punch out to Cherry Valley Road. Mr. Medina expressed concern about the limit for parking, adequate pipelines, water treatment, impact fees, the impact to traffic, and the need for improvements to the Woodinville-Duvall and Cherry Valley Road intersection.

Resident Mike Remington commented that he lives in Heron Cove, adjacent to the proposed development, and he would like to see Quadrant maintain the trees and buffer, particularly the old growth trees. He also added that, having worked in fire service, he has concerns that the narrow streets would pose a challenge for ladder truck rescues. Mr. Nichols responded that Quadrant has not yet consulted with the City regarding tree retention. Mr. Remington asked how the vaults would look, and Mr. Nichols responded they would be underground with landscaped open space (e.g., park or green space) on the top.

Resident Joe [?] commented that the narrow streets would encourage more homes and more cars on the streets, and would cheapen the area.

Resident Nichole Michaud asked if the map (in the presentation) would be denser than proposed. Mr. Nichols responded that the map is to scale.

Resident Mary Watkins inquired as to the missing houses (white space) on the conceptual plan. Mr. Nichols responded that the lot lines were not drawn in the white areas (areas not yet acquired). Ms. Watkins asked how Quadrant would be managing the increased traffic. Mr. Nichols responded that a Traffic Impact Analysis (TIA) has not yet been completed, but will address figures. He added that a building permit would require traffic impact figures and mitigation measures.

Resident David [Calligan] expressed his concerns regarding the potential for standing water, and that the land in the proposed area may be too soft.

Resident Lance Weekes asked if Quadrant will be taking all the trees out of the larger lots and/or putting in new trees. He also asked about the terrain. Mr. Nichols responded that they will not cut down all the trees. He responded that he does not know if the terrain will stay the same as they have not yet done a grading plan. The goal is to not bring in much dirt.

Resident Andy Glover commented that the traffic on 275th would quadruple.

Resident Ben Phillips asked if Manion way [was smaller]. Mr. Nichols responded there would be a half-road improvement. Mr. Phillips expressed concern about increased traffic into Taylor's Ridge, and Mr. Nichols responded that the Traffic Impact Analysis will guide Quadrant's decisions.

Resident Justin Maloney expressed concern that the new development would increase density and quintuple traffic. He also mentioned the complexities of "Duvall Island" (the state of

Duvall's ingress and egress when there's substantial flooding) and asked if Quadrant would mitigate traffic costs. Councilmember Ockerlander responded that the increase in traffic is not due to incoming Duvall residents but to the number of commuters who travel through Duvall between Snohomish County and the larger cities of King County. Ms. Ockerlander urged the residents to ask their elected officials to advocate for traffic improvements in the Snoqualmie Valley area.

Property owner Barry Margolese asked if there would be improvements to 275th Avenue NE. Mr. Nichols responded they would be specific to the stretch of 275th in the development.

Property owner Richard Wieneke commented that the road is substantially wide up to the proposed development boundary and added that the North Island is the most logical annexation parcel due to its surroundings.

Resident Joe [?] asked what the annexation timeline would be. Planning Director Thomas responded that the 50% Petition should be in by the end of 2016, and then it could take an additional six to eight months to process the preliminary plat application. Home construction could take place in 2019.

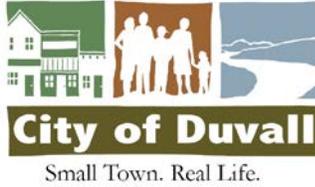
Resident Norman Heath asked about the impact to existing schools. Mr. Nichols responded that no specific analysis has been completed; however, there will be a school impact fee. Ms. Thomas added that the Riverview School District has just purchased property for a K through 5 school. She added that the state's level of service requirements do not allow overcrowding. Mr. Heath commented that he supports growth that matches the lifestyle and culture but feels Duvall is becoming too dense and wondered if it would lower the quality of life here.

Resident Laurie Baldwin expressed that growth brings opportunity for more business and vibrancy and that she trusts the city council and planning commission to make good choices.

Planning Director Thomas concluded the presentation by stating the next steps, which include going back to the commission and council with feedback.

9. Adjournment

Commissioner Mercer adjourned the meeting at 8:42 pm.



Department of Public Works Staff Report

To: Duvall City Council

From: Boyd E. Benson, Public Works

Date: ~~October 13, 2016~~ Updated October 27, 2016 (*updated information underlined in italics*)

Subject: 2016 Stormwater Code Chapter 9.06 Updates

INTRODUCTION

This Staff Report summarizes proposed Duvall Municipal Code (DMC) Chapter 9.06 Stormwater Code revisions. These revisions are required by December 31, 2016 to provide continued compliance with the City's Western Washington Phase II Municipal Stormwater Permit for the National Pollutant Discharge and Elimination System (Phase II NPDES Permit).

The Permit first became effective in 2007 and was modified on January 16, 2015. The City completed DMC revisions in 2011 to address NPDES permit requirements that promote Low Impact Development (LID), incentivize maintenance at privately-owned commercial facilities, and other measures to improve stormwater quality.

NEW PERMIT REQUIREMENTS

The City has an active Stormwater Management Program (SWMP) administered by the Public Works Department. The SWMP is documented within the annual SWMP report. The SWMP complies with all aspects of the NPDES permit. New requirements by December 31, 2016 include:

1. Update stormwater code to revised NPDES Permit Technical Appendix Standards; review, revise, make effective development codes to make LID the preferred approach (NPDES Permit Section C.4.a-f, Control Runoff from New Development):
 - a. City Staff commenced compliance with the NPDES Permit Technical Appendix Standards in 2014, prior to the 2016 compliance date.
 - b. Technical Appendix Standards include requiring LID measures OR meeting detention requirements and outlet flow control that are greater than basic requirements and significantly increase stormwater facility volume.
 - c. City Staff have adding text to codify standards to make LID the preferred approach (see Draft Revisions, Attachment A). This approach includes formal adoption of the 2016 King County Surface Water Design Manual (2016 KCSWDM) and NPDES Technical Appendices.

- d. Other cities in the Puget Sound Region are in the process of completing similar updates. Based on review of other draft updates, several cities are completing extensive revisions of development standards, landscape standards, and tree protection standards. The City had previously completed similar revisions and plans in the past including:
 - i. Reduced road widths, clustering of driveways, reduced pollution-generating impervious surface within the Public Works Development Design Standards.
 - ii. Stormwater and Environmental goals and policies within the Comprehensive Plan Update adopted in 2016.
 - iii. Stormwater goals, policies, and approaches within the Watershed Plan adopted in 2015.
2. Revise Operation and Maintenance standards to comply with revised manual/ code standards (NPDES Permit Section C.5, Municipal Pollution Prevention, Operation and Maintenance):
 - a. Operations and Maintenance standards have previously been updated as part of the City's Stormwater Management Plan (SWMP) Update as documented within the 2014 and 2015 SWMP reports.
 - b. City Staff are in the process of adding proposed text to DMC 9.06 to codify standards that include adoption of the Operation and Maintenance Standards of the 2016 KCSWDM and applicable and NPDES Technical Appendices requirements.

Future considerations and revisions to the City's stormwater regulations and the 2016-2017 Storm and Surface Water Plan update are planned. In addition, staff have discussed possible additional stormwater and/or development consideration that could include:

1. Density credit to incentivize clustering of homes and reduce overall site disturbance. *This means tightly clustering lots to decrease the amount of disturbance and maximize soil and vegetation retention.*
2. Evaluation/update of development regulations that could include Floor Area Ratios (FARs) and impervious surface allowances.
3. Net density as opposed to gross density.
4. Open space credit for "naturalized ponds" provided that the facility *includes amenities such as appropriate landscaping, visual corridors, habitat, paths, or other amenities.*
5. Restricting or de-incentivizing the use of detention vaults/filters to promote LID options. This could include facility evaluation and selection requirements and restrictions developed as part of the 2016-2017 Storm and Surface Water Plan update and/or disallowing open space credit above City-owned vault facilities. *This would require future codification of revisions to DMC Chapter 9 (Stormwater) and DMC 14 (Unified Development Regulations).*
6. Increased allowances for LID measures within sensitive area, habitat corridors, and other areas to remain otherwise undisturbed ~~provided that values and functions are maintained or improved and appropriate tree/plant mitigation is completed.~~ *In certain circumstances*

7. Increased direct discharge exemption allowances: direct discharge (water quality only, removes detention requirement) is allowed under certain circumstances within ¼ mile of the floodplain. Increase this exemption to ½ mile provided that all stormwater is treated with LID such as bioretention without the use of vaults or filters.

PROPOSED DMC 9.06 REVISIONS (all information below updated October 27, 2016)

Proposed DMC Chapter 9.06 revisions, as provided within a written report to City Council on October 18, 2016, are presented in Attachment A. City Council comment since that time include:

9.06.010.1: Utilize Low Impact Development (LID), where feasible, to approximate pre-developed (forested) hydrologic conditions including discharge quality, amount, rate, and location.

- Comment/discussion/possible revision: “LID shall be the primary and priority method of stormwater management with conventional technologies allowed only as warranted (and as required to be shown as necessary) to protect public health, safety, and welfare without any other alternative.”
- Staff recommended revisions “LID shall be the preferred and commonly-used approach for site development and stormwater management. Non-LID measures, such as vaults and filters, shall be allowed only with an administrative engineering departure or variance demonstrating that full use of LID is not possible with respect to site constraints or development regulation considerations.”

9.06.060.C: City assumption of maintenance. Currently, the City assumes maintenance of residential only (non-commercial) stormwater facilities.

- Comment/discussion/possible revision: City should only take responsibility if feasible under rate structure.
- Staff agrees with the intent of comment and rate structure and facility charges will be updated as part of the 2016-2017 Storm and Surface Water Plan update. Staff recommends that language be revised to state that “City will only take responsibility for residential, stand-alone facilities upon approval. Maintenance of LID measures including, but not limited to, bioretention and other facilities located outside of the roadway shall be the responsibility of the owner or owner association”.

9.06.125.B: Rate Policy.

- Comment/discussion/possible revision: should rate be variable per plat to cover plat-specific demands/costs?

Additional future DMC revisions are planned in 2017 as part of the 2016-2017 Storm and Surface Water Plan Update

EXHIBIT A, DRAFT CHAPTER 9.06 STORM DRAINAGE UTILITY REVISIONS

Chapter 9.06 - STORM DRAINAGE UTILITY*

[Chapter 9.06](#) was revised in Ord. No. 1098, [§ 1](#), adopted Aug. 26, 2010. [Chapter 9.06](#) was adopted in Ord. No. 730, adopted in 1994; Ord. No. 739, adopted in 1994; Ord. No. 751, adopted in 1995; Ord. No. 837, adopted in 1997; Ord. No. 852, [§ 1](#) adopted in 1997; Ord. No. 853, [§ 1](#), adopted in 1997; Ord. No. 1044, [§ 2](#), adopted in 2007; and Ord. No. 1090, [§ 1](#), adopted Aug. 13, 2009, unless otherwise noted, and replaced the prior [9.06](#) which was adopted in Ord. No. 298, adopted in 1981.

Sections:

9.06.010 - Purpose.

The City Council finds that this Chapter is necessary to promote sound development policies and construction procedures which respect and preserve the City's watercourses; to minimize water quality degradation and control of sedimentation of creeks, streams, ponds, lakes, and other water bodies; to protect the life, health, and property of the general public; to preserve and enhance the suitability of waters for contact recreation and fish habitat; to preserve and enhance the aesthetic quality of the waters; to maintain and protect valuable groundwater quantities, locations, and flow patterns; to ensure the safety of City roads and rights-of-way; to comply with federal and state requirements; and to decrease drainage-related ages to public and private property. It is the purpose of this chapter to achieve the following:

1. Utilize Low Impact Development (LID), where feasible, to approximate pre-developed (forested) hydrologic conditions including discharge quality, amount, rate, and location.
2. Minimize degradation of stormwater quality.
3. Minimize impacts associated with increased runoff including erosion, sedimentation, and downstream impacts to property, facilities, and sensitive areas.
4. Limit impacts associated with development and redevelopment by retaining trees, native vegetation, and soil while limiting overall site disturbance as possible.
- ±5. Design, construct, and maintain stormwater infrastructure using efficient, cost-effective and sustainable approaches.

(Ord. No. 1098, § 1, 8-26-2010)

9.06.020 - Definitions.

"Best Management Practices (BMP)" means those physical, structural and/or managerial practices that, when used individually or in combination, prevent or reduce pollution of water.

"AKART" means All Known, Available, and Reasonable methods of prevention, control, and Treatment. See also the State Water Pollution Control Act, sections 90.48.010 RCW and 90.48.520 RCW.

~~"Best Management Practices (BMPs)" means schedules of activities, prohibitions of practices, general good house keeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.~~

~~"Biofiltration Facility" means the simultaneous processes of filtration, infiltration, absorption, and biological uptake of pollutants in stormwater that take place when runoff flows over and through vegetated treatment facilities.~~

~~"City Engineer" means the city engineer, public works director, or a designee of the city engineer or public works director, who shall administer this chapter and shall be referred to as the city engineer.~~

~~"Clean Water Act" means the federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.~~

~~"Computations" means calculations, including coefficients and other pertinent data, made to determine the rates of flow for stormwater plans, with units given in cubic feet per second.~~

~~"Current conditions" means the state, status, or conditions (land use, impervious surfaces, topography, soils, and surface water flows) present on the subject property at the time the analysis is conducted.~~

~~"Design storm" means a rainfall (or other precipitation) event or pattern of events for use in analyzing and designing drainage facilities, specifying both the return period in years and the duration in hours.~~

~~"Detention Facilities" means facilities designed to hold runoff while gradually releasing it at a predetermined maximum rate.~~

~~"Developed Conditions" means the state, status, or condition of the subject property at the time the proposed project has been completed, which may include existing buildings, impervious areas, and topography as is.~~

"Developer" means the individual(s), firm, government agency, or corporation applying for the permits or approvals of projects subject to this chapter.

"Development" means any artificial change to property, including but not limited to, building of structures, mining, dredging, filling, all land-disturbing activities, clearing, grading, landscaping, paving, excavation, or drilling operations, and any activity that requires a permit or approval, including but not limited to a building permit, clearing and grading permit, shoreline substantial development permit, conditional use permit, unclassified use permit, zoning variance or reclassification, planned unit development, subdivision, master plan development, building site plan, or right-of-way use permit.

~~"Developmental Coverage" means all developed surface areas within the subject property including but not limited to rooftops, driveways, carports, accessory buildings, parking areas, and any other~~

~~impervious surfaces. During construction, "developmental coverage" includes the above in addition to the full extent of any alteration of previously occurring soils, slopes, or vegetation due to grading, temporary storage, or other short-term causes.~~

"Drainage Area" means area draining to a location not bounded by property lines.

~~"Drainage Facility" means the system of collecting, conveying, and storing surface and stormwater runoff. Drainage facilities shall include, but not be limited to, all surface and stormwater runoff conveyance and containment facilities, including streams, pipelines, channels, ditches, swamps, lakes, wetlands, closed depressions, infiltration facilities, retention/detention facilities, erosion/sedimentation control facilities, and other drainage structures and appurtenances, both natural and man-made.~~

~~"Drainage site" means a geographical area that serves a common or combined use including but not limited to shopping malls and strips, condominiums, apartment complexes, office parks, and housing tracts. A site may include one or more parcels and/or include one or more buildings. See also "Development."~~

~~"Drainage system" see "Drainage Facility."~~

"Engineer" means the City of Duvall Engineer.

"Environmentally Sensitive Areas" means those areas defined as environmentally sensitive in DMC Chapters ~~12.20~~14.42 ~~through 12.22~~ as now existing or hereafter amended.

~~"Equivalent Area" means the tributary area tributary to the receiving water body equal to or less than the shortest straight line distance from the receiving water body (or regional facility) to the furthest point of the proposed project.~~

~~"Groundwater" means water in a saturated zone or stratum beneath the surface of the land or below a surface water body.~~

~~"Hazardous Materials" means any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.~~

~~"Hyperchlorinated" means water that contains more than 10 mg/Liter chlorine.~~

"Illicit Discharge" means any direct or indirect non-stormwater discharge to the stormwater drainage system, except as exempted in section of the chapter titled "Allowed Discharges" and "Conditional Discharges".

"Illicit Connections" means any manmade conveyance that is connected to a stormwater drainage system without a permit excluding roof drains or other similar type connections. Examples include sanitary sewer connections, floor drains, channels, pipelines, conduits, inlets, or outlets that are connected directly to the stormwater drainage system.

~~"Impervious Areas" means that hard surface area which either prevents or retards the entry of water into the soil mantle and/or causes water to run off the surface in greater quantities or at an increased rate of flow from that present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of surface and stormwater runoff. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for the purposes of this Chapter. (See also "New Impervious Surface.")~~

~~"Industrial Activity" means activities subject to NPDES Industrial Permits as defined in 40 CFR, Section 122.26 (b)(14).~~

"King County Manual" refers to King County Surface Water Design Manual.

"Land-disturbing Activities" means any activity that disturbs or alters land surface including clearing and grading.

~~"Large Parcel Stormwater Plan (LPSP)" means a plan to implement BMPs to control pollution generated during land-disturbing activity pursuant to § 9.06.050.~~

~~"Lowest Floor" means the lowest enclosed area (including basement) of a structure. An area used solely for parking of vehicles, building access, or storage, in an area other than a basement area, is not considered a building's lowest floor, provided that the enclosed area meets all of the structural requirements of the flood hazard standards.~~

"Low Impact Development" or "LID" shall be the preferred and commonly-used approach for site development and stormwater management. Non-LID measures, such as vaults and filters, shall be allowed only with an administrative engineering departure or variance demonstrating that full use of LID is not possible with respect to site constraints or development regulation considerations

"National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit" means a permit issued by Washington Department of Ecology under authority delegated pursuant to 33 USC § 1342(b) (Clean Water Act) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

~~"Natural Location" of drainage systems refers to the location of those channels, swales, and other natural conveyance systems as defined by the first documented topographic contours existing for the subject property, either from maps, or photographs, or such other means as appropriate.~~

~~"New Development" means the following activities: land-disturbing activities; structural development, including construction, installation, or expansion of building or other structures; installation of impervious surfaces, and subdivisions.~~

~~"New Impervious Surface" means any impervious surface proposed by a project that will increase the runoff curve number of that surface for existing site conditions (e.g. gravel to asphalt). See "Impervious Areas."~~

~~"Non-Stormwater Discharge" means any discharge to the stormwater drainage system that is not composed entirely of stormwater.~~

~~"Permanent Stormwater Quality Control Plan (PSQCP)" means a plan which includes permanent BMPs for the control of pollution from stormwater runoff after construction and/or land disturbing activity has been completed.~~

~~"Person" means any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.~~

~~"Planned Unit Development" refers to residential developments which are planned and/or developed in several stages but submitted together for approvals, and which typically consist of clusters of structures interspersed with areas of common open spaces.~~

"Planner" means City of Duvall Planning Director or designee.

"Pollutant" means anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

~~"Predeveloped" means the land cover or land use existing as of the effective date of this ordinance.~~

~~"Premises" means any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.~~

"Private Drainage System" means drainage systems located on private property and designed to discharge directly as through pipes, channels, etc., or indirectly as sheet flow, subsurface flow, etc., into the City's drainage system.

"Public Drainage System" means that portion of the drainage system of the City located on public right-of-way or other property owned by the City, and those portion of private drainage systems assumed by the City.

"Receiving Waters" means bodies of water or surface water systems receiving water from upstream manmade (or natural) systems. For the purpose of this document "receiving waters" are the Snoqualmie River.

~~"Redevelopment" means the creation and/or addition of impervious surfaces, structural development including construction, installation, or expansion of a building or other structure, and/or replacement of impervious surface that is not part of a routine maintenance activity, and land disturbing activities associated with structural or impervious redevelopment on an already developed site.~~

~~"Retention/detention facility (R/D)" means a type of drainage facility designed either to hold water for a considerable length of time and then release it by evaporation, plant transpiration and/or infiltration into the ground; or to hold surface and stormwater runoff for short periods of time and then release it to the surface and stormwater management system.~~

~~"Small Parcel Stormwater Plan (SPSP)" means a plan to implement BMPs to control pollution generated during land clearing activity pursuant to § 9.06.040.~~

"Stormwater" means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, channels or pipes into a defined surface water channel, or a constructed infiltration facility.

~~"Stormwater Drainage System" means constructed and natural features which function together as a system to collect, convey, channel, hold, inhibit, retain, detain, divert, treat or filter stormwater.~~

~~"Stormwater Plan" means a plan approved by the City of Duvall for the purpose of controlling the quantity and quality of stormwater from the subject property, consisting of a TIR and site improvement plans.~~

"Stormwater Pollution Prevention Plan" or "SWPPP" means a document which describes the best management practices and activities to be implemented by a person to identify sources of pollution or contamination at premises and the actions to eliminate or reduce pollutant discharges to stormwater, stormwater conveyance systems, and/or receiving waters to the maximum extent practicable.

~~"Subject Property" means the tract of land which is the subject of the permit and/or approved action, as defined by the full legal description of all parcels involved in the proposed development.~~

"Technical Information Report (TIR)" means a comprehensive supplemental report containing all technical information and analysis necessary to develop a stormwater plan. This report should contain all calculations, conceptual design analysis, LID reports and studies required and used to construct a complete stormwater plan based on sound engineering practices and careful geotechnical and hydrological design.

~~"Undeveloped Conditions" means the state, status, or condition of the subject property prior to any development of the property that has occurred, which may include trees, pastures, meadows, or native features.~~

~~"Uncontaminated" means water that has not come into contact with illicit discharges.~~

9.06.030 - Incorporation of King County Surface Water Design -manual and NPDES Permit Requirements.

The ~~current-2016~~ edition of the King County Surface Water Design Manual, including any subsequent amendments thereto, and as amended by Sections 1 through 6 of Appendix 1 of the NPDES Permit, is hereby adopted by reference and is hereinafter referred to as the "Manual." All new development and redevelopment activities shall be subject to the applicable thresholds and requirements within the Manual and Sections 1 through 6 of Appendix 1 of the NPDES Permit.

(Ord. No. 1098, § 1, 8-26-2010)

9.06.035 - Illicit discharge detection and elimination.

A. Purpose. The purpose of this chapter is to provide for the health, safety, and general welfare of the citizens of Duvall, Washington through the regulation of non-stormwater discharges to the stormwater drainage system to the maximum extent practicable as required by federal and state law. This chapter establishes guidelines for Illicit Discharge Detection and Elimination (IDDE) and methods for controlling the introduction of pollutants into the stormwater drainage system in order to comply with requirements of the ~~National Pollutant Discharge Elimination System (NPDES) Phase II~~ Permit ~~process~~. The objectives of this chapter are:

1. To regulate the contribution of pollutants to the stormwater drainage system by stormwater discharges by any person.
2. To prohibit illicit connections and illicit discharges to the stormwater drainage systems.
3. To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this chapter.

B. Applicability. This chapter shall apply to all water entering the stormwater drainage system generated on any developed and undeveloped lands lying within the city of Duvall. The city engineer is authorized to adopt written procedures for the purpose of carrying out the provisions of this chapter.

C. Responsibility for Administration.

1. The city engineer is directed and authorized to develop an inspection program for illicit discharge and illicit connection investigation in the city of Duvall.
2. Inspection Authority. The city engineer is authorized to implement the inspection program for the investigation of suspected illicit discharges and illicit connections.
3. Enforcement Authority. The city engineer shall enforce the requirements of this chapter.

D. Discharge Prohibitions.

1. Prohibition of illicit discharges.
 - a. No person shall throw, drain, or otherwise discharge, cause or allow others under its control to throw, drain or otherwise discharge directly or indirectly into the stormwater drainage system and/or surface and groundwaters any materials other than stormwater.
 - b. Examples of prohibited contaminants include but are not limited to the following:
 - trash or debris;
 - construction materials;
 - petroleum products including but not limited to oil, gasoline, grease, fuel oil and heating oil;

- antifreeze and other automotive products;
- metals in either particulate or dissolved form;
- flammable or explosive materials;
- radioactive material;
- batteries;
- acids, alkalis, or bases;
- paints, stains, resins, lacquers, or varnishes;
- degreasers and/or solvents; drain cleaners;
- pesticides, herbicides, or fertilizers;
- steam cleaning wastes;
- soaps, detergents, or ammonia;
- swimming pool or spa filter backwash;
- chlorine, bromine, or other disinfectants;
- heated water;
- domestic animal wastes;
- sewage;
- recreational vehicle waste;
- animal carcasses;
- food wastes;
- bark and other fibrous materials;
- lawn clippings, leaves, or branches;
- silt, sediment, concrete, cement or gravel;
- dyes;
- chemicals not normally found in uncontaminated water;
- any other process-associated discharge except as otherwise allowed in this section;
- and any hazardous material or waste not listed above.

2. Prohibition of illicit discharges.

- a. The construction, use, maintenance, or continued existence of illicit connections to the stormwater drainage system is prohibited.
- b. This prohibition expressly includes, without limitation, illicit connections made in the past.
- c. A person is considered to be in violation of this chapter if the person connects a line conveying sewage to the stormwater drainage system, or allows such a connection to continue.

E. Allowable Discharges. The following types of discharges shall not be considered illicit discharges for the purposes of this chapter unless the city engineer determines that the type of discharge, whether singly or in combination with others, is causing or is likely to cause pollution of surface water or groundwater:

1. Diverted stream flows.
2. Rising groundwaters.
3. Uncontaminated groundwater infiltration - as defined in 40 CFR 35.2005(20).
4. Uncontaminated pumped groundwater.
5. Foundation drains.
6. Air conditioning condensation.
7. Irrigation water from agricultural sources that is commingled with urban stormwater.
8. Springs.
9. Water from crawl space pumps.
10. Footing drains.
11. Flows from riparian habitats and wetlands.
12. Discharges from emergency ~~fire fighting~~ ~~firefighting~~ activities.

F. Conditional Discharges. The following types of discharges shall not be considered illicit discharges for the purposes of this chapter if they meet the stated conditions, or unless the city engineer determines that the type of discharge, whether singly or in combination with others, is causing or is likely to cause pollution of surface water or groundwater:

1. Potable water, including water from water line flushing, hyperchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be de-chlorinated to a concentration of 0.1 ppm or less, pH-adjusted to a level within the range of 6.5 and 8.5, if necessary and in volumes and velocities controlled to prevent re-suspension of sediments in the stormwater system;
2. Lawn watering and other irrigation runoff are permitted but shall be minimized;
3. De-chlorinated swimming pool discharges. These discharges shall be de-chlorinated to a concentration of 0.1 ppm or less, pH-adjusted to a level within the range of 6.5 and 8.5, if necessary and in volumes and velocities controlled to prevent re-suspension of sediments in the stormwater system;
4. ~~Street and sidewalk wash water, W~~water used to control dust, and routine external building wash down that does not use detergents are permitted if the amount of ~~street~~ wash and dust control water used is minimized. ~~At active construction sites, street sweeping must be performed prior to washing the street;~~
5. Non-stormwater discharges covered by another NPDES permit, provided, that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations; and provided, that written approval has been granted from the city engineer for any discharge to the stormwater drainage system;

6. Other non-stormwater discharges. The discharges shall be in compliance with the requirements of a stormwater pollution prevention plan (SWPPP) reviewed and approved by the city, ~~which addresses control of such discharges by applying AKART to prevent contaminants from entering surface or groundwater.~~

G. Enforcement. Compliance with the requirements of this code shall be mandatory under the authority of the city engineer as established in [Chapter 9.06.070](#) of the DMC. The general penalties and remedies established in [Chapter 9.06.130](#) of the DMC for such violations shall apply to any violation of this code.

H. Severability. If any provision of this chapter or its application to any person, entity, or circumstance is held invalid, the remainder of this chapter or the application of the provision to other persons, entities, or circumstances shall not be affected.

(Ord. No. 1098, § 1, 8-26-2010)

~~9.06.040 – Requirements for small parcels.~~

~~A. Applicability. The requirements of this section shall apply to new development as follows:~~

~~1) individual, detached, single family residences and duplexes; 2) creation or addition of less than 2,000 square feet of impervious area; or 3) grading, clearing, or land disturbing activities of less than 7,000 square feet. Provided, however, that small parcel development not requiring machinery for construction or excavation and that are not subject to SEPA, shall be exempt from this section and that Drainage Review is not required by the criteria in the King County Surface Water Design manual~~

~~B. Compliance. Compliance shall be demonstrated through the implementation of an approved Stormwater Plan prepared by a registered professional engineer. The City Engineer may waive the requirement for preparation by an engineer if he determines that the expertise of a professional engineer is not required for preparation of the plan.~~

~~C. Minimum Requirements for Small Parcels.~~

~~1. Construction vehicle access shall be limited to one route. The access point shall be stabilized with quarry rock and/or crushed rock to minimize the tracking of sediment onto public roads. Any sediment tracked onto public roads shall be removed by the end of the day.~~

~~2. All exposed soils shall be prevented from moving offsite or into natural or artificial drainage systems through suitable application of BMPs, including, but not limited to, sod or other vegetation, plastic covering, mulching, or application of ground base on areas to be paved. All BMPs shall be selected, designed and maintained in accordance with the Manual.~~

~~3. Adjacent properties shall be protected from sediment deposition by appropriate use of vegetative buffer strips, sediment barrier or filters, dikes, berms, or mulching, or by a combination of these measures and other appropriate BMPs.~~

~~4. All erosion and sediment control BMPs shall be inspected and maintained regularly, to ensure continued performance of their intended function.~~

~~5. As required by the Engineer, other appropriate BMPs to mitigate the effects of increased runoff shall be applied.~~

(Ord. No. 1098, § 1, 8-26-2010)

~~9.06.050 – Requirements for large parcels.~~

~~A. Applicability. The requirements of this section shall apply to new development as follows:~~

~~1) creation or addition of more than 2,000 square feet of impervious area; and/or 2) land disturbing activity of 7,000 square feet or greater; and/or as required or exempted by criteria in the King County Surface Water Design manual. Provided, however, that new development falling under this section only because it includes the creation or addition of less than 2,000 square feet of new impervious surface area, and land disturbing activity of less than 7,000 square feet, shall comply with the requirements of § 9.06.040 and requirements [subsections] 2. through 11. of subsection (c) herein. Where redevelopment greater than 2,000 square feet occurs, the requirements of this section shall apply to that portion of the site that is being redeveloped, and source control BMPs shall be applied to the entire site, including adjoining parcels if they are part of the project. Provided, however, that at the discretion of the City Engineer, redevelopment activities which have physical site constraints that significantly hamper retrofitting of the site and that are judged to have no significant impact to stormwater quality, may be exempted in whole or part from the provisions of this section. For sites where the need for additional stormwater control measures have been identified through a basin plan, the watershed ranking process under Chapter 400-12 WAC, or through Growth Management Act Planning, additional stormwater control measures shall be required unless a variance is granted.~~

~~B. Compliance. Compliance shall be demonstrated through the implementation of an approved Stormwater Plan prepared by a registered professional engineer. The Plan shall consist of a Technical Information Report (TIR) and a Site Improvement Plan, as appropriate.~~

~~C. Minimum Requirements for Large Parcels.~~

~~1. A Large Parcel Stormwater Plan shall be prepared showing how the following requirements will be accomplished:~~

- ~~a. Stabilization and sediment trapping. All exposed and unworked soils shall be stabilized according to a timetable established by the Engineer using suitable application to BMPs. Prior to leaving the site, stormwater runoff shall pass through a sediment pond or sediment trap, or other appropriate BMPs.~~
- ~~b. Delineate clearing and easement limits. In the field, mark clearing limits, and/or any easements, setbacks, sensitive/critical areas and their buffers, trees, and drainage courses.~~
- ~~c. Protect adjacent properties. Properties adjacent to the project site shall be protected from sediment deposition.~~
- ~~d. Timing and stabilization of sediment trapping measures. Sediment ponds and traps, perimeter dikes, sediment barriers, and other BMPs intended to trap sediment onsite shall be constructed as a first step in grading. These BMPs shall be functional before land disturbing activities take place. Earthen structures such as dams, dikes, and diversions shall be seeded and mulched in accordance with the Erosion and Sediment Control Requirements in this section.~~
- ~~e. Cut and fill slopes. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. In addition, slopes shall be stabilized in accordance with Erosion and Sediment Control requirements in this section.~~
- ~~f. Controlling offsite erosion. Properties and waterways downstream from development sites shall be protected from erosion due to increases in the volumes, velocity, and peak flow rate of stormwater runoff from the project site.~~
- ~~g. Stabilization of temporary conveyance systems. All temporary onsite conveyance channels shall be designed, constructed, and stabilized to prevent erosion from the expected velocity of flow from a two year, 24 hour frequency storm for the developed condition. Stabilization~~

- ~~adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream reaches shall be provided at the outlets of conveyance systems.~~
- ~~h. Storm drain inlet protection. All storm drain inlets made operable during construction shall be protected so that stormwater runoff shall not enter the conveyance system without first being filtered or otherwise treated to remove sediment.~~
- ~~i. Underground utility construction. The construction of underground utilities shall be subject to the following:~~
- ~~i. No more than five hundred (500) feet of trench shall be opened at one time. The trenches shall be closed up at the end of the day.~~
 - ~~ii. Where consistent with safety and space considerations, excavated material shall be placed on the uphill side of trenches.~~
 - ~~iii. Trench and foundation dewatering devices shall discharge into a sediment trap or sediment pond, where practicable. For dewatering from well points producing non-sediment laden water, sediment ponds or traps are not required.~~
- ~~j. Construction access routes. Wherever construction vehicle access routes intersect paved roads, provisions must be made to minimize the transport of sediment (mud and dirt) on the paved road. If sediment is transported onto a road surface, the roads shall be cleaned thoroughly at the end of the day. Sediment shall be removed from roads by shoveling or sweeping and be transported to a controlled sediment disposal area. Street washing shall be allowed only after sediment is removed in this manner.~~
- ~~k. Removal of temporary BMPs. All temporary erosion and sediment control BMPs shall be removed within thirty (30) days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on site. Disturbed soil areas resulting from removal shall be permanently stabilized.~~
- ~~l. Dewatering construction sites. Dewatering devices shall discharge into a sediment trap or sediment pond. For dewatering from well points producing non-sediment laden water, sediment ponds or traps are not required.~~
- ~~m. Control of pollutants. Illicit discharges other than sediment that occur on site during construction shall be handled and disposed of in a manner that does not cause contact with stormwater or surface waters.~~
- ~~n. Maintenance. All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed to assure continued performance of their intended function. All maintenance and repair shall be conducted in accordance with the Manual.~~
- ~~o. Financial liability. Performance bonding, or other appropriate instrument, may be required for all projects to ensure compliance with the approved erosion and sediment control plan.~~
2. Unless otherwise directed by the Engineer, natural drainage patterns shall be maintained, and discharged from the site shall occur at the natural location, to the maximum extent practicable.
3. Source control BMPs shall be applied to all projects to the maximum extent practicable. Source control BMPs shall be selected, designed, and maintained according to the Manual.
4. All projects shall provide treatment of stormwater. Treatment BMPs shall be sized to capture and treat the water quality design storm, defined as the two-year 24-hour return period storm. For Duvall, this is 2.1 inches of rain in a 24-hour period. The first priority for treatment shall be to infiltrate as much as possible of the water quality design storm, only if site conditions are appropriate and groundwater quality will not be impaired. Direct discharge of untreated stormwater

~~to groundwater is prohibited except for roof drains. All treatment BMPs shall be selected, designed and maintained according to the Manual. Stormwater treatment BMPs shall not be built within sensitive area buffers, except for necessary conveyance to systems to transport runoff to receiving waters as approved by the Engineer.~~

~~5. Stream Bank Erosion Control—Detention.~~

~~a. This subsection applies only to situations where stormwater runoff is discharged directly or indirectly to a stream, and must be met in addition to meeting the requirements of subsection (4).~~

~~b. Stormwater discharges leaving a site shall be detained by designing a pond that will limit the peak rate of runoff from individual development sites to the predeveloped condition peak runoff rate for the two year, 24 hour, and ten year 24 hour design storms. Upon sizing the pond according to this criteria, a 30 percent increase in storage volume must be added at each depth. The post developed runoff for the 100 year, 24 hour storm event shall be routed through the conveyance system and the runoff control facilities to evaluate any significant adverse impacts downstream. For Duvall, the ten year and 100 year, 24 hour design storms are 3.0 and 3.9 inches of rain in 24 hours, respectively. As the first priority, stream bank erosion control BMPs shall utilize infiltration to the fullest extent practicable, only if site conditions are appropriate and groundwater quality is protected. These control BMPs shall be selected, designed, and maintained in accordance with the Manual.~~

~~c. Stormwater systems that discharge directly or indirectly to a stream may also be subject to Hydraulic Project Approval and the requirements of the State Department of Fish and Wildlife. If a Department of Fish and Wildlife HPA is required then the stricter of the runoff control design standards (those of the Manual or the Dept. of Fish and Wildlife) will apply.~~

~~d. Stormwater treatment BMPs shall not be built within vegetated buffers, except for necessary conveyance systems as approved by the Engineer.~~

~~e. A future adopted City Stormwater Management Plan may establish additional detention requirements that supersede the requirements contained within this section.~~

~~6. Wetlands.~~

~~a. Where stormwater discharges to a wetland, in addition to the requirements of subsection (4), the following apply:~~

~~i. Prior to discharge to wetlands, stormwater will be treated with all reasonable best management practices for water quality protection.~~

~~ii. Discharges to wetlands shall maintain water level fluctuations similar to those which would be present under natural conditions.~~

~~iii. The developer shall obtain all necessary state and federal wetlands permits prior to commencing any work on the site.~~

~~iv. Stormwater treatment BMPs shall not be built within natural vegetated sensitive area buffers, except for necessary conveyance systems as approved by the Engineer.~~

~~v. In order for constructed wetlands to be considered treatment systems, they must be constructed on sites that are not wetlands and they must be managed for stormwater treatment. If these systems are not managed and maintained in accordance with an approved manual for a period exceeding three years these systems may no longer be considered constructed wetlands. Discharges from constructed wetlands to waters of the state (including discharged to natural wetlands) are regulated under Chapter 90.48 RCW, Chapter 173-201 WAC, Chapter 173-200 WAC, and DMC Chapters 12.20—12.22.~~

~~7. Where the Engineer determines that the minimum requirements do not provide adequate protection for water quality sensitive area, whether on site or within the drainage basin, more stringent controls shall be required to protect water quality. Stormwater treatment BMPs shall not be built within natural vegetated sensitive area buffers except for necessary conveyance systems as approved by the Engineer.~~

~~8. All development projects shall conduct a Level 1 analysis of offsite water quantity impacts resulting from the project and shall mitigate these impacts. The analysis shall extend a minimum of one-fourth of a mile downstream from the project, or to the extent that is required by the Engineer. The existing or potential impacts to be evaluated and mitigated shall include, but not be limited to:~~

- ~~a. excessive sedimentation and deposition;~~
- ~~b. stream bank and stream bed erosion;~~
- ~~c. discharges to groundwater contributing to recharge zone;~~
- ~~d. violations of water quality standards;~~
- ~~e. spills and discharges of illicit discharges;~~
- ~~f. inadequate stormwater conveyance system capacities;~~
- ~~g. excessive stormwater velocities;~~
- ~~h. existing problems;~~
- ~~i. fish habitat and fish passage.~~

~~9. An operation and maintenance schedule shall be provided for all proposed stormwater facilities and BMPs, and the party (or parties) responsible for maintenance and operation shall be identified.~~

~~10. Performance bonding and/or other appropriate corporate financial instruments may be required for all projects to ensure compliance with these standards.~~

~~11. Adopted and implemented watershed-based plans may be used to modify any or all of the minimum requirements of this section 9.06.050(c), provided that the level of protection for surface or ground water achieved by the basin plan will equal or exceed that which would be achieved by the minimum requirements in the absence of a basin plan. Basin plans shall evaluate and include, as necessary, retrofitting of BMPs for existing development and/or redevelopment in order to achieve watershed-wide pollutant reduction goals. Standards developed from basin plans shall not modify any of the requirements until the basin plan is formally adopted and fully implemented by local government. Basin plans shall be developed according to an approved manual.~~

~~(Ord. No. 1098, § 1, 8-26-2010)~~

9.06.060 - Operation and maintenance requirements.

A. Maintenance Required. All stormwater facilities shall be maintained in accordance with this Chapter, ~~and the Manual as amended with s-~~Systematic, routine preventative maintenance ~~is preferred~~.

B. Minimum Standards. The following are the minimum standards for the maintenance of stormwater facilities:

1. It shall be the duty of the owner to maintain, repair and restore, at the owner's expense, all private stormwater systems located on the owner's property. Maintenance shall be performed in accordance with the minimum requirements of this Chapter and in accordance with any maintenance schedule adopted during the plan review process for constructing the facilities.
2. No person shall cause or permit any drainage system located on the owner's property to be obstructed, filled, graded, or used for disposal of debris.

3. Minimum requirements for the maintenance of stormwater facilities shall include, but not be limited to, the following:
 - a. annual inspection, maintenance, and reporting in accordance with city, state, and federal standards;
 - b. removing brush, vegetation, debris and other blockage;
 - c. removing sediment, silts, sands and gravels;
 - d. removing oils, grease, tars and other pollutants;
 - e. repairing and replacing damaged facilities as required; and
 - f. all other activities necessary to ensure the facilities are operating as designed.
4. Vegetated stormwater facilities, such as grassed swales and biofilters, shall be inspected semi-annually and mowed or replanted as necessary.
5. Disposal of waste from maintenance activities shall be conducted in accordance with the Minimum Functional Standards for Solid Waste Handling, Chapter 173-304 WAC; guidelines published by the Washington State Department of Ecology for disposal of waste materials from storm water maintenance activities; and where appropriate, the Dangerous Waste Regulations, Chapter 173-303 WAC.

C. City Maintenance. The City may assume responsibility for residential, stand-alone facilities upon approval. Maintenance of LID measures including, but not limited to, bioretention and other facilities located outside of the roadway shall be the responsibility of the owner or owner association. The City may assume ownership, -the operation, and maintenance responsibility of retention/detention or other drainage treatment/abatement stormwater facilities according to City policy and/or development permit Conditions of Approval after the expiration of the two-year operation and maintenance period if:

1. All of the requirements of this chapter have been fully complied with;
2. The facilities have been inspected and approved by the Engineer after two years of operation;
3. All necessary easements entitling the City to properly operate and maintain the facility have been conveyed to the City and recorded with the King County Department of Records.

(Ord. No. 1098, § 1, 8-26-2010)

9.06.070 - Authority of the city engineer.

The City Engineer shall have the authority to enforce this Chapter. The City Engineer is directed and authorized to develop an inspection program for stormwater facilities in the City of Duvall. Persons or occupants of the site shall allow the Engineer or his designee access at all reasonable times to all parts of the premises for the purpose of inspection, sampling, and record examinations. The Engineer shall have the authority to issue a developer and/or property owner an order to maintain or repair a component of the stormwater facility or BMP to bring it in compliance with this chapter, and/or other applicable City regulations. The order shall include: 1) A description of the specific nature, extent and time of the violation and the damage or potential damage that reasonably might occur; 2) a notice that the violations or potential violations cease and desist and, in appropriate cases, the specific corrective actions to be take; 3) a reasonable time to comply, as determined by the City Engineer depending upon the circumstances; and 4) a penalty for non-compliance as outlined in [section 9.06.130](#).

(Ord. No. 1098, § 1, 8-26-2010)

9.06.080 - Inspections.

A. Construction Inspections. The holder of any permit that requires a drainage plan shall arrange with the Engineer or Utilities Superintendent for scheduling the following inspections:

- (1) Initial Inspection—Whenever work on the grading, excavations, or fill is ready to commence.
- (2) Rough Grading—Whenever all rough grading has been completed.
- (3) Bury Inspection—Prior to burial of any underground drainage structure.
- (4) Finish Grading—When all work including installation of all drainage structures and other protective devices has been completed.
- (5) Planting—When erosion control planting shows active growth.
- (6) The site may be inspected for compliance with requirements upon receiving such notice, the Engineer or Utilities Superintendent shall inspect the work and shall either approve the same or notify the applicant in what respects there has been failure to comply with the requirements of this ordinance. Any portion of the work which does not comply shall be promptly corrected by the applicant. In addition, the City may make unscheduled site inspections to ensure compliance with any permit, approval, or bond reduction or release.

B. Maintenance and Investigatory Inspections.

1. Authority and Procedure. Whenever implementing the provisions of the inspection program or whenever there is cause to believe that a violation of this chapter has been or is being committed, the City, City Engineer, or City inspector (Inspector)~~inspector~~ is authorized to inspect during regular working hours and at other reasonable times all stormwater drainage systems within the City to determine compliance with the terms of this chapter. Prior to making any inspections, the Inspector shall present identification credentials, state the reason for the inspection, and request entry. If the property or any building or structure on the property is unoccupied, the Inspector shall first make a reasonable effort to locate the owner or other person(s) having charge or control of the property or portions of the property and request entry. If after reasonable effort, the Inspector is unable to locate the owner or other person(s) having charge or control of the property, and has reason to believe the condition of the stormwater drainage system creates an imminent hazard to persons or property, the Inspector may enter. Unless entry is consented to by the owner, person or persons in control of the property, by some person authorized by the owner, or unless conditions are reasonably believed to exist which create an imminent hazard to persons or property, the Inspector shall obtain a search warrant prior to the entry, as authorized by the laws of the State of Washington. Provided, however, that the Inspector may inspect the stormwater drainage system without obtaining a search warrant if the inspection can be conducted while remaining on public property or other property when permission to enter said property has been obtained.

2. Inspection Schedule. The Engineer shall establish a master inspection and maintenance schedule to inspect appropriate stormwater facilities ~~that are not owned by the City~~. Inspections and inspection reports shall be annual. Critical stormwater facilities may require a more frequent inspection schedule.

3. Inspection and Maintenance Records. Existing stormwater facilities shall be added to the master inspection and maintenance schedule. Records of new stormwater facilities shall include the following:

- a. As-built plans and locations.
- b. Findings of fact from any exemption granted by local government.

c. Operation and maintenance requirements and records of inspection, maintenance actions, and frequencies.

d. Engineering reports, as appropriate.

(Ord. No. 1098, § 1, 8-26-2010)

9.06.090 - Exemptions.

A. Stormwater facilities owned and maintained by the Washington State Department of Transportation in state highway rights-of-way which are regulated by and meet the requirements of Chapter 173-270 WAS, the Puget Sound Highway Runoff Program, are exempted from the requirements of this chapter.

~~B. Stormwater facilities located in City of Duvall rights-of-way shall be maintained by the city and are exempted from the requirements of this chapter.~~

(Ord. No. 1098, § 1, 8-26-2010)

~~9.06.100 - Variances.~~

~~A. A person requesting a variance from the standards of this chapter shall file an application with the City Engineer setting forth the location of the development, the owner of the property, the nature of the variance request, and the reason for the variance. A filing fee of \$300.00, unless otherwise established by resolution of the City Council, shall accompany the application. The filing fee shall be applied to all the costs and expenses incurred by the City in processing the application. In the event the filing fee is inadequate the City shall bill any additional costs to the applicant which shall be paid within 30 days and prior to the granting of any variance herein.~~

~~B. In considering an application for variance, the City Engineer shall consider the following factors:~~

- ~~1. Whether or not the variance would have an adverse effect upon the goals and policies of the City as outlined in this chapter.~~
- ~~2. Whether or not the proposed variance is consistent with the City's Comprehensive Plan.~~
- ~~3. Whether or not there would be adverse effects upon adjoining properties or neighboring properties.~~
- ~~4. Any positive benefits to the City resulting from the proposed variance.~~
- ~~5. That such variance is necessary because of special circumstances relating to the subject property to provide it with the use, rights, and privileges permitted other properties in the vicinity and in the zone in which the subject property is located.~~
- ~~6. The capacity of downstream facilities, the acceptability of receiving bodies of water; possibility or adverse effects or retention, utilization of regional retention facilities, and capability of maintaining the system.~~

~~C. The City Engineer may place any conditions on the variance denied necessary to achieve the goals of this chapter.~~

~~D. Upon reaching a decision, the City Engineer shall notify the applicant, the City Council, and the Mayor. The notice shall be in writing.~~

~~E. The applicant, any aggrieved party, any member of the City Council, or the Mayor, may appeal a decision of the City Engineer to grant or deny a variance to the full City Council. A notice of appeal must be filed with the City Clerk within 10 days of the issuance of the City Engineer's decision. The City Council shall consider the appeal within 30 days and may affirm, reverse, or modify the decision of the City Engineer in accordance with the standards set forth herein.~~

~~(Ord. No. 1098, § 1, 8-26-2010)~~

9.06.110 – Bonds and liability insurance.

~~The City is authorized to require persons constructing retention/detention facilities to post with the City surety and cash bonds as determined necessary by the Engineer. Where such persons have previously posted or are required to post, other such bonds with the City, either on the facility itself or on other construction related to the facility, such person may with the permission of the Engineer and to the extent allowable by law, combine all such bonds into a single bond provided that at no time shall the amount thus bonded be less than the total amount which would have been required in the form of separate bonds and provided further that such a bond shall on its face clearly delineate those separate bonds which it is intended to replace.~~

- ~~(a) Construction Bond. Prior to commencing construction the person constructing the facility shall post a construction bond in an amount sufficient to cover the cost of conforming said construction with the approved drainage plans. After determination by the Engineer that all facilities are constructed in compliance with the approved plan, the construction bond may be released.~~
- ~~(b) Maintenance Bond. After satisfactory completion of the facilities and release of the construction bond by the City, the person constructing the facility shall commence a two-year period of satisfactory maintenance of the facility. A cash bond to be used at the discretion of the City to correct deficiencies in said maintenance affecting stormwater facility performance, public health, safety and welfare must be posted and maintained throughout the two-year maintenance period. The amount of the cash bond shall be determined by the City. In addition to the cash maintenance bond a surety bond to cover the cost of defects or failures of the facilities may be required by the City to be posted and maintained through the two-year maintenance period.~~
- ~~(c) Liability Bond. At the discretion of the Engineer the person constructing the facility shall maintain a liability policy in an amount as determined by the City but in no instance less than three hundred thousand dollars per individual, five hundred thousand dollars per occurrence and three hundred thousand property damage, which shall name the City of Duvall from any liability up to those amounts for any accident, negligence, failure of the facility, or any other liability whatsoever relating to the construction or maintenance of the facility. Said liability policy shall be maintained for the duration of the maintenance by the owner of the facility, provided that in the case of facilities assumed by the City of Duvall for maintenance said liability policy shall be terminated when said City maintenance responsibility commences.~~
- ~~(d) City Assumption of Maintenance. The City may assume the maintenance of retention/detention facilities after the expiration of the two-year maintenance period in connection with the subdivision of land if:
 - ~~(1) All of the requirements of this chapter have been fully complied with;~~
 - ~~(2) The facilities have been inspected and approved by the City after their second year of operation; and~~
 - ~~(3) All necessary easements entitling the City to properly maintain the facility have been conveyed to the City.~~~~

~~(Ord. No. 1098, § 1, 8-26-2010)~~

9.06.120 - Fees.

~~A. Plan Checking Fees.~~ The application shall be accompanied by a filing fee of two hundred fifty dollars (\$250.00). The total fee for field and office checking by city personnel shall be the actual cost of the work at prevailing wage rates for personnel under the supervision of a registered professional engineer and any other cost that the city may incur in checking the drainage plan. Wage rates shall be made available to the developer upon request prior to submission of the application. The balance of the application fee, if any shall be paid prior to its approval by the city. If the city's costs do not equal or exceed the application fee, the remainder of the fee will be returned to the applicant following approval by the city.

~~B. Field Inspection Fees.~~ Before construction starts on any approved plans an inspection fee of two hundred fifty dollars (\$250.00) shall be filed with the city. The total fee for field inspection by city personnel shall be the actual cost of the work at prevailing wage rates for personnel under the supervision of a registered professional engineer and any other cost that the city may incur in inspecting for drainage improvements. Wage rates shall be made available to the developer upon request prior to submission of the application. The balance of the inspection fee, if any shall be paid to the project's final acceptance by the city. If the city's costs do not equal or exceed the inspection fee paid, the remainder of the fee will be returned to the applicant following acceptance by the city.

AC. Storm Drainage Construction Fund. There is established a storm drainage construction fund into which shall be paid all acreage charges collected under this chapter, together with contributions made by the city from other sources. This fund shall be used to pay the cost and expense of constructing and installing general facilities for storm drainage and flood control.

BD. Acreage Charge.

1. No building permit shall be issued on any property within the city unless the owner pays to the city an acreage charge ~~of one thousand dollars (\$1,000.00) per acre or fraction thereof. The acreage charge shall increase to one thousand one hundred dollars (\$1,100.00) beginning with applications received on or after January 1, 1998; to one thousand two hundred dollars (\$1,200.00) beginning with applications received on or after January 1, 1999; to one thousand three hundred dollars (\$1,300.00) beginning with applications received on or after January 1, 2000; and to one thousand four hundred dollars (\$1,400.00) beginning with applications received on or after January 1, 2001.~~ Minor construction of accessory buildings, fences, and the like, and remodeling of existing structures shall not trigger payment of this charge. This charge shall constitute a proportionate share of the property's contribution to the capital costs of storm drainage and flood control throughout the city. This capital improvement charge for storm drainage and flood control shall be collected only once for any property; provided, however, that this limitation shall not affect any other charges the city may assess relative to storm drainage, flood control, or other matters. All properties assessed at the time of subdivision approval shall not be required to pay a second charge for each individual lot at the time a building permit is requested.

2. No short or long subdivision shall receive final approval by the planning commission or city council until the owner pays to the city an acreage charge ~~of one thousand dollars (\$1,000.00) per acre or fraction thereof. The acreage charge shall increase to one thousand one hundred dollars (\$1,100.00) beginning with applications received on or after January 1, 1998; to one thousand two hundred dollars (\$1,200.00) beginning with applications received on or after January 1, 1999; to one thousand three hundred dollars (\$1,300.00) beginning with applications received on or after January 1, 2000; and to one thousand four hundred dollars (\$1,400.00) beginning with applications received on or after January 1, 2001.~~ This charge shall constitute a proportionate share of the property's contribution to the capital costs of storm drainage and flood control throughout the city. Such fee shall only be collected once from any property; provided, however, that this limitation shall not

affect any other charges the city may assess relative to storm drainage, flood control, or other matters.

3. ~~Subsequent~~ storm drainage utility acreage charges shall be set by resolution of the city council. (Ord. No. 1152, § 1, 6-27-2013; Ord. No. 1098, § 1, 8-26-2010)

9.06.125 - Service charges.

A. Definitions. The following words when used herein shall have the following meanings unless the context clearly indicates otherwise:

1. "City" means the City of Duvall, Washington.
2. "Developed" means the state, status, or condition of the subject property at the time the proposed project has been completed, which may include existing buildings, impervious areas, and topography as is affected.
3. "Equivalent residential unit" means and is equal to three thousand (3,000) square feet of impervious area and is the measure of impervious area to be used by the utility in assessing service charges against each parcel of property.
4. "Impervious area" means that hard surface area which either prevents or retards the entry of water into the soil mantle and/or causes water to run off the surface in greater quantities or at an increased rate of flow from that present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled or compacted earthen materials or other surfaces which similarly impede the natural infiltration of surface and stormwater runoff. Open retention/detention facilities shall not be considered as impervious surfaces for the purposes of this section.
5. "Plan" means the storm drainage utility plan created by Ordinance No. 730 and codified in DMC Chapter 9.06.6.
6. "Service charge" means the monthly fee levied by the utility upon all developed real property within the boundary of the utility as authorized herein.
7. "System" means the entire system of storm drainage facilities within the utility, for the movement and retention of storm and surface waters, including both naturally occurring and manmade facilities.
8. "Undeveloped conditions" means the state, status, or condition of the subject property prior to any development of the property that has occurred, which may include trees, pastures, or native features.
9. "Utility" means the City of Duvall storm drainage utility created by Ordinance No. 730, which includes all properties within the entire existing City limits and all future additions thereto.

B. Rate Policy. It shall be the policy of the city that the rate structure to be applied in establishing the amount of service charges assessed against each parcel of developed real property within the boundaries of the utility shall be based upon the amount of impervious area contained within each parcel of property as measured by subsection C herein, except for those properties set forth in subsection F herein, and unless otherwise required by development permit Conditions of Approval.

C. Classification of Property. The utility shall measure the impervious area of each parcel of developed real property within the boundaries of the utility to determine the number of equivalent residential units contained therein; three thousand (3,000) square feet of impervious area shall equal one equivalent residential unit. All detached single-family residences are deemed to contain one equivalent residential

unit. For all other developed real properties, including mobile home parks, the utility shall determine the number of equivalent residential units contained thereon by dividing the number of square feet of impervious area on each property by three thousand (3,000); the total thus obtained will be rounded to the nearest whole number representing the equivalent residential units contained on such property. The equivalent residential unit measurement shall adhere to the following:

1. For non-single-family residential facilities constructed using Low Impact Development Components, each square foot of permeable surfacing shall be considered as half ($\frac{1}{2}$) of a square foot of impervious area. Areas eligible for this reduction include permeable pavement, green roofs, and other permeable surfaces as described in [Chapter 5](#) of the King County Surface Water Design Manual.
2. Each developed parcel of property shall be deemed to contain a minimum of one equivalent residential unit.

D. Undeveloped Real Property. In accordance with the policy established in subsection B of this section, the service charge shall be determined by the amount of impervious area contained on each parcel of real property. Those properties remaining in an undeveloped condition are deemed not to make use of the services of the utility or of the facilities of the system beyond that use by such property in the natural state. Therefore, no service charge shall be imposed upon that real property within the boundaries of the utility which is undeveloped.

E. Service Charge Rates. In accordance with the rate structure established herein, there is levied upon all developed real property within the boundaries of the utility the following service charges which shall be collected as provided in subsection G of this section:

1. For all detached single-family residences (one equivalent residential unit) the monthly service charge shall be sixteen dollars ninety-two cents (\$16.92) in 2011. The rate shall be adjusted each January based on the 12-month average (July—June) percent change of the preceding two years of Seattle-Tacoma-Bremerton CPI-U.
2. For all other developed property and mobile home parks within the boundaries of the utility, except as set forth in subsection F of this section, the monthly service charge shall be multiplied by the number of equivalent residential units determined by the utility to be contained in such parcel pursuant to subsection C of this section.
3. The charges and fees established by this section shall be reviewed annually in conjunction with the adoption of the City budget. Fees shall be set by the city council to enable the utility to meet all costs incurred. Subsequent Service Charge Rates shall be set by the city council by resolution.
4. Stormwater Facility Discount: For privately owned, non-single-family residential water quality and detention facilities owned and maintained at the expense of the property owner the Service Charge Rate will be reduced by twenty-five-percent (25%) provided all of the following conditions are met:
 - a. The facility was installed as part of a City of Duvall Development Permit.
 - b. All components of the flow control and/or water quality facility are maintained in accordance with the approved operations and maintenance plan submitted as part of the development process, City of Duvall standards, and Appendix A of the King County Surface Water Design Manual.
 - c. The property owner must complete annual required facility maintenance and reporting as verified by a City inspection. Reporting shall be completed by the property owner using City of Duvall reporting forms and shall be submitted to the City for review and approval by September 1 of each year.

- d. The twenty-five-percent (25%) Service Charge Rate reduction will be valid for one year following City-approved maintenance and review of annual report. The twenty-five-percent (25%) Service Charge Rate reduction will be discontinued if the property owner does not correct stormwater facility deficiencies within 30 days of written notice from the City.
 - e. The Service Charge Rate reduction will be valid for one year following City-approved maintenance and review of annual report. The Service Charge Rate reduction will be discontinued if the property owner does not correct dispersion system deficiencies within 30 days of written notice from the City.
 - f. A "Declaration of Covenant and grant of Access Easement" is provided to grant the City of Duvall right of access to the property and facility for inspection purposes. The Declaration of Covenant must be recorded at the King County Office of Records.
 - g. This discount may not be combined with any other discount described in this chapter.
5. On-site Discharge Discount: For privately owned, non-single-family residential water quality and detention facilities owned and maintained at the expense of the property owner, the Service Charge Rate will be reduced provided all of the following conditions are met:
- a. The dispersion system includes splash blocks, rock pads, dispersion trenches, infiltration, rainwater harvesting, or sheet flow in accordance with the King County Surface Water Design Manual.
 - b. All flow from the dispersion system is completely dispersed, absorbed, or discharged on-site or directly to an adjacent floodplain.
 - c. Flow from the facility does not enter into any off-site conveyance, water quality, flow control, or outfall components at any time.
 - d. The dispersion system was installed as part of a City of Duvall Development Permit.
 - e. All components of the dispersion system are maintained in accordance with the approved operations and maintenance plan submitted as part of the development process, City of Duvall standards, and Appendix A of the King County Surface Water Design Manual.
 - f. The property owner must complete annual required facility maintenance and reporting as verified by a City inspection. Reporting shall be completed by the property owner using City of Duvall reporting forms and shall be submitted to the City for review and approval by September 1 of each year.
 - g. The Service Charge Rate reduction will be valid for one year following City-approved maintenance and review of annual report. The Service Charge Rate reduction will be discontinued if the property owner does not correct dispersion system deficiencies within 30 days of written notice from the City.
 - h. A "Declaration of Covenant and grant of Access Easement" is provided to grant the City of Duvall right of access to the property and dispersion system for inspection purposes. The Declaration of Covenant must be recorded at the King County Office of Records.
 - i. Reductions shall be as follows:

Percentage of Total Impervious Area served by On-site Discharge System	Rate Discount
≥ 90%	50%
≥ 70% and <90%	40%

Percentage of Total Impervious Area served by On-site Discharge System	Rate Discount
≥ 50% and <70%	30%
≥ 30% and >50%	20%
≥ 10% and <30%	10%
< 10%	0%

j. The On-site Discharge Discount will be based on a calculation completed by the City of Duvall based on information included in the stormwater report submitted for the project as part of a City of Duvall Development Permit. A new stormwater evaluation and development permit will be required for any alteration to a previously permitted stormwater facility that results in a change to the percentage of Total Impervious Area served by On-Site Discharge System.

k. This discount may not be combined with any other discount described in this chapter.

F. Property Exempt from Service Charges. The following special categories of property are exempt from service charges:

1. City street rights-of-way, all of which are a part of the system pursuant to the plan;
2. State of Washington highway rights-of-way and King County road rights-of-way so long as the state of Washington and King County shall agree to maintain, construct and improve all drainage facilities contained within such rights-of-way as required by the utility in conformance with all utility standards for maintenance, construction and improvement hereafter established by the utility and so far as such maintenance, construction and improvements shall be achieved at no cost to the utility or to the City;
3. Municipal facilities.

G. Billing.

1. All properties within the Utility burden the System either directly from discharge of on-site stormwater to the utility or indirectly from overland flow or system impacts associated with vehicles accessing the property. The charges imposed by this chapter shall be billed against all properties within the utility in conjunction with the property's customary water, garbage, and sanitary sewer bill issued by the City. Such charges shall be due and payable as provided in [DMC Section 9.04.100](#).
2. Charges for storm drainage services remaining unpaid at the close of business on the twentieth day of the month in which billed (or the close of the next regular business day if the twentieth should fall on a Saturday, Sunday, or a legal holiday) shall be considered delinquent and shall call for a delinquent charge of ten (10) percent of the total combined utility amount due. Any checks returned due to insufficient funds shall incur a penalty in an amount to be fixed from time to time by resolution of the city council. Said delinquent charges and penalties shall become a lien upon the real property so furnished as provided by Washington state law, and shall be enforced as a real property lien and shall be superior to all other liens and encumbrances whatsoever, except those for general taxes and local and special assessments, and concurrently enforced by discontinuing and shutting off City water services as provided herein and as provided by Washington state law. If the delinquent charges and penalties remain unpaid at the close of business on the fourteenth day of the

succeeding month (or the close of the next regular business day if the fourteenth day of the month should fall on a Saturday, Sunday, or a legal holiday), a notice shall be mailed to the property owner setting forth the lien described-above and further informing the property owner ~~that water service will be discontinued and shut off following five working days from the date of the notice unless all delinquent charges and penalties are paid prior to the discontinuance of water service as provided herein. Water service will not be resumed until all delinquencies and penalties, together with a water turn on fee of thirty five dollars (\$35.00), have been paid.~~

3. It shall be the obligation of the owner of a building, property, or premises within the storm drainage utility service to provide to the City of Duvall a mailing address for the purpose of billing for storm drainage utility charges and for the notice above-described. No water service shall be provided to any premises unless such a billing address is provided.

4. Billings may be made in the name of a tenant or other occupants of the premises which are provided storm drainage utility services at the mailing address provided above, but such billings shall not relieve the owner of the property from liability for the payment of the charges for furnishing of such storm drainage services nor in any way affect the lien rights of the City against the premises to which said storm drainage services are furnished. Failure to receive mail properly addressed to the mailing address provided above shall not be a valid defense for failure to pay the delinquent charges and penalties. Any change in the mailing address provided above must be properly filed in writing with the office of the city clerk before it will become effective.

5. In the event the City must bring legal action to collect storm drainage service charges and/or penalties, the City shall, in addition to such charges and penalties, recover its attorney's fees and other costs incurred in connection with such collection.

(Ord. No. 1118, § 1(Exh. A), 10-13-2011; Ord. No. 1098, § 1, 8-26-2010)

9.06.130 - Enforcement and penalty.

A. Criminal Penalty. Any person, firm, corporation or other entity who violates any of the provisions of this chapter, any lawful order issued by the City Engineer under this chapter, or any permit conditions established by this chapter, shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not to exceed Five Hundred Dollars (\$500.00) or by imprisonment in the county jail for a term not to exceed ninety (90) days or by both fine and imprisonment. Each separate day of violation shall be a separate crime. Any person, firm, corporation or other entity who violates any of the provisions of this chapter, any lawful order issued by the City Engineer under this chapter, or any permit conditions established by this chapter, shall repair, mitigate, or replace the violation at their cost. The individual, firm, corporation and/or other entity responsible for the violations shall be required to pay the entire City's repair, mitigation, or replacement cost incurred as a result of the violation.

B. Infraction. Any person, firm or corporation or other entity that violates any of the provisions of this chapter, any lawful order issued by the City Engineer under this chapter, or any permit conditions established by this chapter, shall also commit a civil infraction. Civil infractions under this section shall be processed as set forth in [Chapter 2.24](#). It shall not be necessary for the code enforcement officer to issue a notice of violation prior to issuing a notice of civil infraction for violations of [Chapter 9.06](#).

C. Civil Relief. The City shall also have the right to abate any violations of this chapter, or orders or conditions set forth pursuant to this chapter, by seeking injunctive relief in the King County Superior Court. The individual, firm, corporation and/or other entity responsible for the violations shall be required to pay all the City's legal costs including reasonable attorney's fees.

(Ord. No. 1098, § 1, 8-26-2010)

9.06.140 - Adoption of comprehensive plan.

The 1997 Duvall stormwater management plan prepared by Gardner Consultants, Public Works Division of ESM, Inc., as amended by the 2015 City of Duvall Comprehensive Plan, is adopted as the official Duvall stormwater management plan ~~and is incorporated into the Duvall comprehensive plan~~. A copy of the plan has been filed with the office of the city clerk for examination by the public prior to adoption. A copy of the plan, as adopted in this section, shall be filed with the city clerk for use and examination by the public. The 1997 Duvall stormwater management plan shall be considered under DMC Section 14.30.070 in application of the State Environmental Policy Act. In the event of inconsistencies between the Plan, the City's adopted storm drainage manual, and the storm drainage ordinance, the more restrictive provision shall apply.

(Ord. No. 1098, § 1, 8-26-2010)

**CITY OF DUVALL
WASHINGTON**

RESOLUTION NO. 17-XX

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY
OF DUVALL RELATED TO THE PROPOSED NORTH
URBAN GROWTH AREA ANNEXATION**

WHEREAS, the City of Duvall's North Urban Growth Area ("NUGA") is an approximately 88-acre area located within the City's potential annexation area;

WHEREAS, in 2013 the City received and processed a 10% Intent to Annex Petition for the NUGA and passed two Resolutions (Resolutions 13-06 and 13-07) that provided a timeframe for the 50% petition submittal and the parcels to be included annexation;

WHEREAS, Quadrant Homes has contracted to purchase approximately 26 acres of the NUGA area for a proposed residential development ("Property"), and it intends to submit a 50% Petition and Pre-Annexation Agreement to Annex the NUGA area to the City in January of 2017 pursuant to the Direct Petition Method of annexation, as authorized in RCW 35A.14;

WHEREAS, the properties within the proposed NUGA annexation area are currently designated Residential, 4-4.5 units per acre, in the City's 2015 Comprehensive Plan and Future Land Use Map;

WHEREAS, Quadrant is considering a residential subdivision with an early estimate of approximately 90 lots on approximately X acres of Property;

WHEREAS, the City is anticipating updates to its Unified Development Regulations in 2017, and possibly continuing into 2018, for code consistency with the 2015 Comprehensive Plan, including: Sensitive Areas regulations, tree protection regulations, residential density calculation formulas, and possible updates associated with limited modifications to Landscaping Standards ("Code Updates");

WHEREAS, the City is also anticipating updates to policies for consistency with the 2015 Comprehensive Plan update, including: the Stormwater Plan, Stormwater Regulations, Transportation Plan and Element, and updates to the City's park impact fee to align with the 2009 Parks Trails and Open Space Capital Improvement Plan ("Policy Updates");

WHEREAS, the City will require Quadrant to enter into a Pre-Annexation Agreement that will outline specific development conditions that will apply to the annexation and development of the Property, and this Pre-Annexation Agreement could be approved before the Code and Policy Updates are complete; and

WHEREAS, the City and Quadrant (the "Parties") desire to memorialize their agreement concerning the future annexation of the NUGA area and future development of the Property.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF DUVALL, WASHINGTON, DO RESOLVE AS FOLLOWS:

Section 1. The City of Duvall will accept a 50% Petition to Annex the NUGA area from Quadrant, and Quadrant will work with City staff on a Pre-Annexation Agreement that will set forth conditions of annexation and outline development standards that will apply to future development of the Property.

Section 2. If the annexation is completed, the Pre-Annexation Agreement will require the newly-annexed NUGA area to assume its fair share of the existing indebtedness of the City of Duvall.

Section 3. If the annexation process moves forward, the council directs the negotiation of the Pre-Annexation Agreement to include provisions that the development of the NUGA area be consistent with the 2015 Comprehensive Plan, including but not limited to the 2014 Watershed Plan but allow flexibility for the developer, with community input, to exceed standards

Section 4. If the annexation process moves forward, the Pre-Annexation Agreement will be consistent with the 2015 Comprehensive Plan, with the option of developing a mutually agreed upon demonstration project to include the concept of placemaking. Residential density will be calculated using the “net density” method, which deducts critical areas and their buffers from the acreage calculation.

Section 5. If the annexation process moves forward, the Pre-Annexation Agreement should include provisions for the Project to comply with all adopted City Codes, as well as Code Updates and Policy Updates as defined by and budgeted for by the City Council. If adoption of the Pre-Annexation Agreement precedes adoption of the Code and Policy Updates, the Pre-Annexation Agreement should ensure that the Project comply with or exceed standards within the Council defined pending Code and Policy Updates before any plat or short plat applications may be approved by the City. The City will endeavor to complete Code Updates and Policy Updates by the end of 2018, and as resources and procedural requirements allow.

Section 7. If the annexation process moves forward the Pre-Annexation Agreement should allow an option for the developer, city and community to work together on developing a demonstration type project that not only meets the City’s goals, but allows for flexibility that meet or exceed the intent of the 2015 Comprehensive Plan with the intent of developing a first of its kind, community and council driven development. The Hearing Examiner will have authority for final approval of such a project.

Section 8. Adoption of a Pre-Annexation Agreement consistent with this Resolution shall be a condition precedent to any annexation of the NUGA area.

PASSED BY THE CITY COUNCIL AT A REGULAR MEETING THEREOF ON THE
____ DAY OF _____, 2017.

CITY OF DUVALL

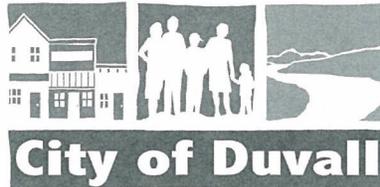
Mayor Will Ibershof

Approved as to form:

ATTEST/AUTHENTICATED:

Rachel Turpin, City Attorney

Jodi Wycoff, City Clerk



Small Town. Real Life.

TO: Planning Commission

FROM: Lara Thomas, Planning Department

DATE: January 11, 2017

SUBJECT: North Island Annexation Discussion and Update

In 2013, the City received a complete Notice of Intent to Annex from two property owners of the North Island Urban Growth Area (NUGA). Ty Waude was the applicant's representative at that time for an 87.93-acre annexation into the City. The proposed annexation encompasses 14 parcels including one parcel by Puget Sound Energy. All the parcels are designated as Residential, R4 to R4.5, in the Duvall Comprehensive Plan. The applicant proposes the annexation of the entire NUGA. The City adopted two resolutions moving the annexation petition forward to the next step in the annexation process. The two resolutions (13-06 and 13-07) set out parameters of the 50% petition, including the area shall be annexed in whole (14 parcels) and set out a timeline of when the city will accept and consider the 50% petition.

In 2016, Quadrant contacted the city as the representative for several of the parcels in the NUGA. Staff has met with Quadrant on several occasions to review and respond to annexation questions (50% petition and process). Staff recommend Quadrant host a community meeting at a joint Planning Commission and City Council workshop. That workshop was completed in October and was well attended by the community.

Quadrant has requested Council consideration and consensus on moving the annexation forward to the 50% petition. Prior to Quadrant making a final decision on moving the NUGA forward, the submittal of application materials, and the public process, Quadrant and staff requested review of a jointly drafted resolution that summarizes key considerations for development of the annexation submittal including the pre-annexation agreement of the NUGA. The Council discussed the draft resolution on December 6, 2016. At the meeting, there was further discussion of further refinements to the resolution. Council created an ad-hoc committee to work on the resolution. The committee worked on a draft resolution for the January 3, 2016, Council meeting. A final draft of the resolution will go to Council on January 17 for consideration and possible final action.

Council's general concern related to moving the NUGA forward is staff workload in 2017. Jointly the Planning and Public Works Departments have several policies that are top priorities and funded in 2017. They include: the Transportation Plan (which requires PSRC certification and Department of Commerce 60-day review), Stormwater Plan (Department of Ecology and Department of Commerce 60-day review), 2017 Comprehensive Plan Update (which requires PSRC certification and Department of Commerce 60-day review), Sensitive Areas Update (state mandated to be completed in 2017; Department of Ecology and Department of Commerce 60-day review), Tree Protection Policy Update (Department of Commerce 60-day review), and other minor code amendments to implement the 2015 Comprehensive Plan and Watershed Plan. Staff

agrees there is a significant emphasis on policy work this year that may possibly limit the amount of work time for other projects including annexations.

Attachments:

December Draft NUGA Resolution

January Draft NUGA Resolution

CITY OF DUVALL
WASHINGTON
RESOLUTION NO.

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY
OF DUVALL RELATED TO THE PROPOSED NORTH
URBAN GROWTH AREA ANNEXATION**

WHEREAS, the City of Duvall's North Urban Growth Area ("NUGA") is an approximately 88-acre area located within the City's potential annexation area;

WHEREAS, in 2013 the City received and processed an Intent to Annex Petition for the NUGA and passed two Resolutions (Resolutions 13-06 and 13-07) that provided a timeframe for the 50% petition submittal and the parcels to be included annexation;

WHEREAS, Quadrant Homes has contracted to purchase approximately 26 acres of the NUGA area for a proposed residential development ("Property"), and it intends to submit a 50% Petition and Pre-Annexation Agreement to Annex the NUGA area to the City in January of 2017 pursuant to the Direct Petition Method of annexation, as authorized in RCW 35A.14;

WHEREAS, the properties within the proposed NUGA annexation area are designated Residential, 4-4.5 units per acre, in the City's 2015 Comprehensive Plan and Future Land Use Map;

WHEREAS, Quadrant is proposing a residential subdivision of approximately 90 lots on the Property, consistent with the residential density approved in the 2015 Comprehensive Plan;

WHEREAS, the City is anticipating updates to several City Code provisions in 2017, including its sensitive areas, stormwater regulations, tree retention policies, and residential density calculation formulas ("2017 Code Updates");

WHEREAS, the City will require Quadrant to enter into a Pre-Annexation Agreement that will outline specific development conditions that will apply to the annexation and development of the Property, and this Pre-Annexation Agreement could be approved before the 2017 Code Updates; and

WHEREAS, the City and Quadrant (the "Parties") desire to memorialize their agreement concerning the future annexation of the NUGA area and future development of the Property.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF DUVALL,
WASHINGTON, DO RESOLVE AS FOLLOWS:

Section 1. The City of Duvall will accept the 50% Petition to Annex the NUGA area from Quadrant, and Quadrant will work with City staff on a Pre-Annexation Agreement that will outline development standards that will apply to future development of the Property.

Section 2. If the annexation is completed, the Pre-Annexation Agreement will require the newly-annexed NUGA area to assume its fair share of the existing indebtedness of the City of Duvall.

Section 3. If the annexation is completed, the Pre-Annexation Agreement will require the development of the NUGA area to be consistent with the 2015 Comprehensive Plan, including the 2014 Watershed Plan.

Section 4. If the annexation is completed, the Pre-Annexation Agreement will require a residential density of 4 units per acre, consistent with the 2015 Comprehensive Plan. Residential density will be calculated using the “net density” method, which deducts only critical areas and their buffers from the acreage calculation.

Section 5. If the annexation is completed, the Pre-Annexation Agreement will require the Project to comply with all adopted City Codes. If adoption of the Pre-Annexation Agreement precedes adoption of the 2017 Code Updates, the Pre-Annexation Agreement will require the Project to comply with the intent behind the 2017 Code Updates, as expressed by the City Council in public meetings, and as further clarified by City staff.

Section 5. Adoption of a Pre-Annexation Agreement consistent with this Resolution shall be a condition precedent to any annexation of the NUGA area.

PASSED BY THE CITY COUNCIL AT A REGULAR MEETING THEREOF ON THE
____ DAY OF _____, 2017.

CITY OF DUVALL

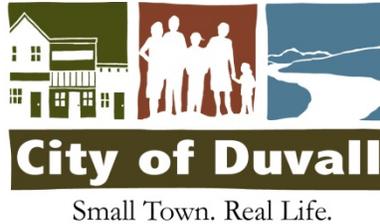
Mayor Will Ibershof

Approved as to form:

ATTEST/AUTHENTICATED:

Rachel Turpin, City Attorney

Jodi Wycoff, City Clerk



To: Planning Commission

From: Lara Thomas, Planning Director

Date: January 4, 2017

Re: Request for Proposals (RFP) – Consulting Services Contract for Sensitive Area and Tree Protection Policy Update

HISTORY

The City of Duvall is required to update the Sensitive Area Code (DMC 14.38) in 2017 as part of Growth Management Act (GMA) compliance. The City recently completed the 2015 Watershed Plan and the 2015 Comprehensive Plan Update (CP). The Comprehensive Plan is updated every 8-10 years as part of GMA compliance.

The City adopted the 2015 Comprehensive Plan. The Comprehensive Plan included a new Element, Sustainability and the Environment. The new Element included policy from the Watershed Plan and the Shoreline Master Program. A Final Environmental Impact Statement was completed and issued as part of the Comprehensive Plan.

The Watershed Plan has been developed to meet multiple objectives for protecting the natural environment and community resources as development occurs, including innovative approaches to encourage protection, management, and restoration of Sensitive Areas and the inclusion of Fish and Wildlife Habitat Corridors.

The City's current Sensitive Area policies were established approximately ten years ago in concert with the previous periodic update of the City's Comprehensive Plan in 2004, and were updated as part of the 2015 Comprehensive Plan. Current Sensitive Area Regulations were adopted by Ordinance 1056 in 2007 consistent with 2004 Comprehensive Plan, and are codified under Chapter 14.42 of the Duvall Municipal Code (DMC).

The primary purpose of updating the City's Sensitive Area policies is to ensure the City's regulations are consistent with updated comprehensive plan policies, state law, and Best Available Science (BAS).

The City's current tree protection policies were established approximately ten years ago in concert with the last periodic update of the City's Comprehensive Plan in 2004. Tree protection policies were subsequently adopted by Ordinance 1056 in 2007 and are codified under Chapter 14.40 of the Duvall Municipal Code. Trees within the City are also protected through open space requirements for new development (see DMC 14.46), landscaping standards (see DMC 14.38), and sensitive areas regulations (see DMC 14.42).

The primary purpose of updating the City's tree protection policies is to integrate the City's development standards in order to better ensure the protection of existing trees and forest canopy within the City through implementation of innovative techniques, incentives, and other approaches.

The Council funded the Sensitive Area and Tree Protection policy update as part of the 2017 budget process. The Planning Department issued a Request for Proposals for consultant services to assist staff, Planning Commission, and City Council draft the updated policies. The City issued the RFP in December and received one response.

ESA provided a timely and thorough proposal on December 28, 2016. Staff has reviewed the proposal and will begin the process of contract negotiation this month. Staff expects approval of a contract for services to be approved by Council in February.

BACKGROUND

The policy work will include an advisory committee (AC) that will include (2) two planning commissioners, (2) two council members, (3) three staff members, (3) three technical members, and (2-3) two to three community members. The AC will meet monthly for 2-3 hours through September. The Planning Commission and City Council will host a joint and separate workshop during the process and the Advisory Committee, Planning Commission, and Council will hold one community meeting. The AC will include a Chair and Vice Chair, likely a planning commissioner and council member. The Chairs and Planning Director will be responsible for reporting monthly to the Planning Commission and Council a summary of the previous meeting.

REQUEST

The Planning Department requests Planning Commission (PC) recommend two members from the Commission serve on the Sensitive Area and Tree Protection Policy Update Advisory

Committee. Two PC members have responded to the solicitation of interest, Michelle Hogg and Dick Winn.

Attachments:

Request for Proposals

ESA Letter of Interest – City of Duvall Sensitive Areas and Tree Protection

DMC 14.40 Tree Protection

DMC 14.42 Sensitive Area Regulations



Small Town. Real Life.

Request for Proposal
City of Duvall Sensitive Areas and Tree Protection Update

INTRODUCTION

The City of Duvall Planning Department seeks qualified proposals from multidisciplinary consulting firms in the update of its Sensitive Areas (more commonly referred to as Critical Area) Regulations and tree Protection Standards consistent with the City's Comprehensive Plan, Watershed Plan, and Shoreline Master Program, and state law. A copy of the Comprehensive Plan and Watershed Plan may be downloaded in PDF format from the City's website: www.duvallwa.gov. **The City invites you to submit a Proposal and Statement of Qualifications no later than December 28th, 2016.**

BACKGROUND

The City adopted the 2015 Comprehensive Plan. The Comprehensive Plan included a new Element, Sustainability and the Environment. The new Element included policy from the Watershed Plan and the Shoreline Master Program. A Final Environmental Impact Statement was completed and issued as part of the Comprehensive Plan.

The Watershed Plan has been developed to meet multiple objectives for protecting the natural environment and community resources as development occurs, including innovative approaches to encourage protection, management, and restoration of Sensitive Areas and the inclusion of Fish and Wildlife Habitat Corridors.

The City's current Sensitive Area policies were established approximately ten years ago in concert with the previous periodic update of the City's Comprehensive Plan in 2004, and were updated as part of the 2015 Comprehensive Plan. Current Sensitive Area Regulations were adopted by Ordinance 1056 in 2007 consistent with 2004 Comprehensive Plan, and are codified under Chapter 14.42 of the Duvall Municipal Code (DMC).

The primary purpose of updating the City’s Sensitive Area policies is to ensure the City’s regulations are consistent with updated comprehensive plan policies, state law, and Best Available Science (BAS).

The City’s current tree protection policies were established approximately ten years ago in concert with the last periodic update of the City’s Comprehensive Plan in 2004. Tree protection policies were subsequently adopted by Ordinance 1056 in 2007 and are codified under Chapter 14.40 of the Duvall Municipal Code. Trees within the City are also protected through open space requirements for new development (see DMC 14.46), landscaping standards (see DMC 14.38), and sensitive areas regulations (see DMC 14.42).

The primary purpose of updating the City’s tree protection policies is to integrate the City’s development standards in order to better ensure the protection of existing trees and forest canopy within the City through implementation of innovative techniques, incentives, and other approaches.

CONSULTANT QUALIFICATIONS

Qualified consultants will have an extensive knowledge and understanding of state Critical Area rules and policies and knowledge of BAS as it pertains to Sensitive Area protection and enhancement; experience in writing regulations that protect, enhance, and mitigate for Sensitive Areas (including enforcement); experience with public outreach; ability to compile information from varying sources including GIS; and ability to prepare and revise planning documents. The Consultant will have familiarity with the Washington State Growth Management Act, the Shoreline Management Act, the Washington State Environmental Protection Act, and their implementation.

SCOPE OF WORK

A detailed scope of work and associated documents are available online at www.duvallwa.gov. An outline of the expectations and anticipated work necessary for updating the City’s Sensitive Areas regulations and tree protection standards is listed below. The updated Sensitive Area regulations will need to be consistent with the policies contained in the Environmental Element of the 2015 Comprehensive Plan, consider BAS that has become available since 2005 / 2006, and implement recommendations from the Watershed Plan. The updated tree protection standards will need to be consistent with the policies contained in the Environmental Element of the 2015 Comprehensive Plan and implement recommendations from the Watershed Plan.

Specific tasks will include:

1. **Review and update Duvall’s BAS** – Review will be completed consistent with RCW 36.70.172, which requires that Duvall “include the best available science in developing

policies and development regulations to protect the functions and values of critical [sensitive] areas.” The review and update will consider BAS available since Duvall’s *Landscape Analysis for Critical Areas Ordinance Update* (Parametrix, May 2005), including consideration of technical information within the Shoreline Inventory and Characterization Report (ESA Adolfson, 2012), Watershed Plan (ESA, 2015), and Shoreline Master Program (ESA, 2015).

2. **Review existing SAO regulations and identify update strategies** – Strategies will be developed to ensure consistency with changes in BAS, updated Comprehensive Plan Environmental Element policies, and Watershed Plan recommendations.
3. **Develop SAO code revisions** – Recommended code revisions will be developed consistent with reviewed and agreed upon strategies. Revisions will be provided in underline / strikethrough format for City staff, Planning Commission, City Council, and public review.
4. **Review existing tree protection standards and identify update strategies** – Strategies will be developed to ensure consistency with policies contained in the Environmental Element of the 2015 Comprehensive Plan and recommendations from the City’s Watershed Plan. Strategies will be primarily focused on updates to DMC 14.40; however, will also review other relevant portions of DMC Title 14 to integrate and improve tree protections. Tree protection approaches from other Puget Sound jurisdictions will be considered, and evaluation will be provided to consider implications for future development activities.
5. **Develop tree protection code revisions** – Recommended code revisions will be developed for DMC 14.40, with minor revisions to other chapters of DMC Title 14, consistent with reviewed and agreed upon strategies. Revisions will be provided in underline / strikethrough format for City staff, Planning Commission, City Council, and public review.
6. **City review and adoption support** – Technical staff attendance and lead support for an Advisory Committee at up to four meetings. Technical staff attendance and support at up to three Planning Commission and/or City Council meetings during review and update adoption process.

PROJECT BUDGET

The dollar amount is approximate and dependent on the extent of tasks identified in the final scope of work of an executed contract. The City of Duvall estimates the project will cost around \$65,000 in consulting costs.

SUBMITTAL CONTENT REQUIREMENTS

Consultants are encouraged to submit concise and clear responses to the RFP. Proposal lengths exceeding maximum page limits will result in disqualification of proposals. All pages shall be 8.5

x 11-inch format, double sided, and on recycled paper. Four bound copies and one loose copy shall be provided.

1. **Letter of Interest (1 page maximum):** Indicate interest and availability to address plan/scope elements, and current levels of general and professional liability insurance carried by the consultant.
2. **Project Approach and Scope Consideration (3 pages maximum): Project Approach and Scope Considerations (3 pages maximum):** Include a brief description of the consultant's philosophy, approach to the project, and value to the City. Include key scope considerations to accomplish the scope elements stated in the RFP. The consultant is encouraged to include suggestions or supplemental tasks which may enhance the project or streamline the scope of work and improve cost effectiveness. Please note that the two updates do not have to be completed at the same time and the highest priority is to complete the SAO update in approximately five months.
3. **Schedule (1 page maximum):** Include a timeline showing the estimated length of time required for completion of the phases (sensitive areas update and tree protection update) as described in the scope of work. Text may be provided to describe the schedule.
4. **Cost Summary (1 page maximum):** Provide a preliminary cost summary of the work to be completed.
5. **Project Team (2 pages maximum):** Identify the proposed team, including sub-consultants, qualifications, experiences, and references. Identify the project manager and principal contact who will be permanently assigned to the project (it is strongly preferred that they are one and the same person).
6. **Relevant Experience (2 pages Maximum):** Describe the consultant's experience in preparing plan/scope elements. Include at least three projects the consultant has completed that are similar to the project described in the request. For each project, provide the following information:
 - Name and location of each project;
 - Year completed;
 - Name and contact information of each client;
 - Name and contact information of the client project manager; and
 - Elements of the project that are common to the plan/scope elements described in this request.
7. **Project Team Résumés (provide in appendix at end of proposal, one page résumé per team member, no page limit):** Include a paragraph for each key team member, years of experience, education, certifications, company affiliation, workplace location, and a brief bulleted list of individual project experience.

EVALUATION OF PROPOSALS

Each proposal will be evaluated and given a score based upon the quality of response to each of the following criteria. The maximum number of points that can be awarded is 100.

7. Project Approach, Scope Considerations and Cost Estimate – 20 points maximum
Consultants will be rated based upon the thoroughness of the detailed scope and cost estimate.
8. Project Timeline/Schedule – 10 points maximum
Consultants will be rated on their ability to meet the project timeline while meeting project goals.
9. Project Team Expertise – 25 points maximum
Consultants will be rated on: 1) the qualifications of the members of the proposed team, including the responsibilities and skills of each team member and the makeup of the team relative to the scope of the project, 2) demonstration that the project team clearly understands the project's objectives and technical requirements, and 3) familiarity with watershed planning and the Comprehensive Plan and process.
10. Relevant Experience – 25 points maximum
Consultants will be rated on their experience and demonstrated success in performing work similar to that described in this request.
11. Thoroughness/Clarity of Proposal – 20 points maximum
Consultants will be rated based on the thoroughness and clarity of the proposal.
The City's selection committee will review all proposals based upon the above-stated criteria.

SUBMISSION OF PROPOSAL

Consultants are encouraged to submit concise and clear responses to the RFP. Responses of excessive length or complexity are discouraged. The documents shall have a minimum font size of 11 or greater.

Submit five (5) copies of the proposal to the City of Duvall Planning Department, PO Box 1300, Duvall, WA 98019, no later than **4:30 p.m. on December 28, 2016**. Postmarks will not be accepted. Faxed or electronic copies will not be accepted.

The City of Duvall will not pay any cost incurred by any consultant resulting from preparation or submittal of a proposal in response to this RFP. The City reserves the right to modify or cancel in part, or in its entirety, this RFP.

The selection of consultant shall be made without regard to race, color, sex, age, religion, national origin, or political affiliation. The City of Duvall is an Equal Opportunity Employer.

ANTICIPATED TIMELINE FOR CONSULTANT SELECTION

It is the City's desire to select a consultant and complete contract negotiations by [January 26, 2017].

December 28, 2016 – Proposals Due

January 16 – Evaluation Team Selects Finalist*

January 26 – Final Scope and Contract Negotiations Completed

February 7 – Council Authorizes Mayor to Sign Contract

*Consultant Interviews are not anticipated and the City reserves the right to select a consultant from submitted proposals alone. The City may choose to complete consultant interviews at their discretion.

QUESTIONS

For more information or questions regarding this RFP, please contact Lara Thomas, Planning Director, 425-788-2779, ext. 2, or lara.thomas@duvallwa.gov. You can also contact Troy Davis, Senior Planner, at 425-788-2779, ext. 1, or troy.davis@duvallwa.gov.



5309 Shilshole Avenue NW
Suite 200
Seattle, WA 98107
206.789.9658 phone
206.789.9684 fax

www.esassoc.com

December 28, 2016

Lara Thomas, Planning Director & Troy Davis, Senior Planner
City of Duvall Planning Department
15535 Main Street NE
PO Box 1300
Duvall, WA 98019

RECEIVED
DEC 28 2016
CITY OF DUVALL

Subject: Letter of Interest - City of Duvall Sensitive Areas & Tree Protection Update

Dear Lara & Troy:

Like many communities on the urban fringe, Duvall is striving to accommodate economic growth and development without sacrificing the rural character and environmental qualities that are at the heart of its "small town real life" identity. As highlighted by your recent adoption of the 2015 Comprehensive Plan and Watershed Plan, it is apparent that Duvall sees environmental resource management as an effective way to achieve these goals. Policies and priority actions identified in these Plans provide a roadmap for updates to sensitive area regulations and tree protection standards. To ensure ongoing consistency with Growth Management Act (GMA) guidelines and implement integrated approaches for protection of environmental resources as development continues, the City needs a consulting partner that knows Best Available Science (BAS) and how to integrate science-based policy into practical land development standards, and who truly understands Duvall. We believe we are that partner.

Over the past several years, Environmental Science Associates (ESA) has supported Duvall's efforts to administer the municipal code, update the Comp Plan and SMP, develop the Watershed Plan, and implement various public infrastructure projects. Through this work, we have developed a deep appreciation and understanding of your values and standards for doing business. In addition, we are leaders in sensitive areas and urban open space management across the Puget Sound region. Recently, we completed all aspects of the sensitive areas update process in the Cities of Lynnwood, Edmonds, Federal Way, and Renton and supported Jefferson and Island Counties. We are also currently working on updates to additional cities, including Olympia, Port Orchard, and Kent. We have supported the Cities of Seattle, Tacoma, and Bainbridge Island in managing urban forests and trees. For Duvall, we will apply the lessons learned from these projects by streamlining scientific analysis and efficiently developing policy recommendations and update regulations.

As your project manager, I bring my experience leading resource management projects in Duvall, Lynnwood, and elsewhere, ensuring successful sensitive areas and tree protection updates within budget and on schedule. I will be supported by a team of planners, wetland and stream scientists, arborists, geotechnical, and GIS experts featured in our proposal. Included on our team is Dan McShane, from the Stratum Group. Dan is an engineering geologist with experience across the Puget Sound region. We have also included Jim Barborinas with Urban Forestry Services, Inc. Jim will ensure that tree management and protection standards provide for lasting conservation and enhancement of forest and tree resources within the City.

ESA can comply with all terms of the grant agreement and has automobile liability and general and professional liability insurance coverage of \$1,000,000 per occurrence.

Our attached proposal is provided for your consideration. ESA commits to the project schedule and budget, and we look forward to talking with you about this project soon. In the meantime, if you have any questions, please do not hesitate to contact me at 206.789.9658 or abooy@esassoc.com.

Sincerely,
ESA

Aaron Booy, Project Manager

Project Approach & Scope Consideration

Our approach to meeting the City of Duvall's objectives will capitalize on our combined knowledge of the City's natural resources, recently developed City goals and policies, BAS for sensitive areas protection, and integrated management approaches for urban forests and trees. We know that you desire to review sensitive areas and tree conditions concurrently, informing integrated management approaches that will meet Duvall's vision for both future development and protection of important natural resources. At the same time, we understand that the City needs a targeted assessment of its current sensitive areas regulations in order to achieve GMA compliance required by the Department of Commerce in the first half of 2017.

To do this and meet all tasks specified in your RFP, the ESA team's approach to the Sensitive Areas and Tree Protection updates will involve three primary phases:

- **Phase I – Existing Conditions Assessment & Consistency Review:** We propose that initial activities occur concurrently for both the Sensitive Areas Update and the Tree Protection Update. For each update, review will include:
 - Documentation of existing conditions, relying on existing City inventories and plans;
 - Consideration of BAS (for sensitive areas) and best practices (for tree protection);
 - Development of consistency review matrices, examination of existing natural resource protection standards and compliance with City's recently adopted policies, BAS, and best practices, and presentation of options for updates.

- **Phase II – Development & Adoption of Revised Sensitive Areas Code:** With the review completed in Phase 1, ESA's team will work with City staff and an Advisory Committee selected by the City to develop recommended draft Sensitive Areas Code revisions. We will then support focused local adoption with efforts including an open house and presentations to City Council.
- **Phase III – Development & Adoption of Revised Tree Protection Code:** With completion of the Sensitive Areas Update, ESA will shift our focus to developing recommended draft Tree Protection Code revisions. We recommend the same approach, relying on City staff and advisory group input, and culminating in local adoption through focused public and City Council review.

The Scope of Work in the RFP describes six separate tasks for the project. Through the phased approach described above, we recommend including Task 1 (BAS), Task 2 (Sensitive Areas Update Strategies), and Task 4 (Tree Protection Update Strategies) under Phase I. Task 3 (Sensitive Areas Code Revisions) and Task 5 (Tree Protection Code Revisions) would be paired with staggered adoption of the revised natural resource standards through Phases II and III, respectively. The tasks we intend to conduct in each phase are depicted on the project schedule on page 5 of this proposal.

The following discussion provides several key considerations for successful updates to Sensitive Areas and Tree Protection standards.

Existing Conditions Assessment

From our recent work with the City supporting development of your Shoreline, Watershed, and Comprehensive Plans (and our ongoing work supporting Public Works with the updated Surface and Stormwater Comprehensive Plan), we are familiar with the range of available natural resource data sets. This will allow us to efficiently document existing conditions for both sensitive areas and forested areas across Duvall, including use of reference to existing inventory reports. We see opportunity to complete targeted additional analysis focused on urban forest and tree canopy conditions, with the focus on furthering information available to inform updates to management standards.

ESA’s geospatial experts are leaders in establishing web-based interactive project maps to disseminate information to key stakeholders. As one example for this project, web-based maps depicting inventoried wetland, erosion hazard area, and habitat corridor extents could be used by City-staff and the Advisory Committee to understand the relationship between sensitive areas and forest canopy cover. We would work with you during scoping to gauge potential application of web-based tools.

BAS Review for Sensitive Areas & Compliance Consistency

The scientific knowledge regarding management of critical areas has increased incrementally over the past ten years since the last SAO update. In addition, some regulatory thinking has changed regarding critical areas since the last update – particularly regarding mitigation/restoration ratios and off-site mitigation options. ESA has established an in-house team of seasoned technical experts, and partnered with Northwest leaders in geologic hazard assessment (Stratum Group) and tree and forest management (Urban Forest Solutions, Inc.) to provide efficient review of the latest scientific literature, inventory data sources, review regulatory guidance, and develop an updated BAS report. The report will include a discussion of each of the four critical areas: frequently flooded areas, wetlands, geologically hazardous areas, and fish and wildlife conservation areas.

Below: Example BAS Review Matrix for the City of Port Orchard

Existing CAO Provision POMC Chapter / Section	Degree of Consistency with BAS, GMA, & Guidance	Reason For Lack of Consistency	Suggested Change	Rationale/ Basis for Suggested Change
Wetlands (Chapter 18.04)				
18.04.010 Purpose	Consistent with BAS			
18.04.020 Wetland categories	N/A Inconsistent with BAS	Subsections 1 and 2 reference outdated wetland delineation and rating manuals.	For clarity, consider changing the name of the section to “Wetland Identification and Rating.” Revise Subsections 1 and 2 to refer to the approved federal wetland delineation manual and applicable regional supplements, and the 2014 version of the Washington State Rating System for Western Washington.	Clarity and ease-of-use. The federal wetland delineation manual and regional supplements, and the updated 2014 wetland rating manual constitute BAS for wetland identification, delineation, and rating (WAC 173-22-035, WAC 365-190-090).
18.04.030 Regulated and nonregulated wetlands classification	Could be revised to be more consistent with BAS	The section exempts small Category III and IV wetlands without requiring mitigation.	Limit exemption to isolated Category III and IV wetlands less than 1,000 square feet in area that are not associated with riparian areas or buffers, are not part of a wetland mosaic, and do not contain habitat for priority species.	Scientific literature does not support exempting wetlands based on size or category alone, since small wetlands may perform important functions. However, Ecology has developed a strategy for exempting small wetlands when additional criteria are considered (Bunten et al., 2012).
18.04.040 Development standards Subsection 1	Inconsistent with GMA	If recommended changes to 17.04.050 are made (as detailed below), then this subsection	Remove subsection.	<i>Wetlands and CAO Updates: Guidance for Small Cities</i> (Bunten et al., 2012)

Integration with Comprehensive Plan & Watershed Plan

We understand that a primary marker of success for Sensitive Areas and Tree Protection updates will be implementation of City policies and recommended actions from your recently adopted Comprehensive Plan and Watershed Plan. ESA supported Duvall through these planning efforts, and is aware that policy implementation will require an integrated approach. Tree protection standards will support sensitive areas and open space requirements to incentivise conservation of existing canopy adjacent to sensitive areas. Sensitive areas and tree protection code updates will work in tandem to establish new protections for wildlife habitat corridors. ESA will work with the City to ensure that prioritized Comprehensive Plan and Watershed Plan policies are implemented through this project in ways that balance development and resource protection.



Above: ESA supported the City through development of the Watershed Plan, where we illustrated implications of adopted policies through alternative development scenarios. We will partner with the City to implement adopted policies through updates to SAO and Tree Protection standards, resulting in integrated protection of natural resources while providing opportunity for future development.

Advisory Group Review

Working with the City, ESA's project manager, Aaron Booy, and key technical experts will prepare for and facilitate advisory group meetings throughout the project (see proposed meetings within the schedule on page 5). We recommend convening an Advisory Committee comprised of local interests, including 1-3 interested citizens at large, City staff from other departments, representatives from diverse interest groups, and representation from the Duvall Planning Commission and City Council. The Committee will ensure that proposed updates are consistent with existing conditions and adopted policies in Duvall, and will help identify the most useful resource protection and management updates.

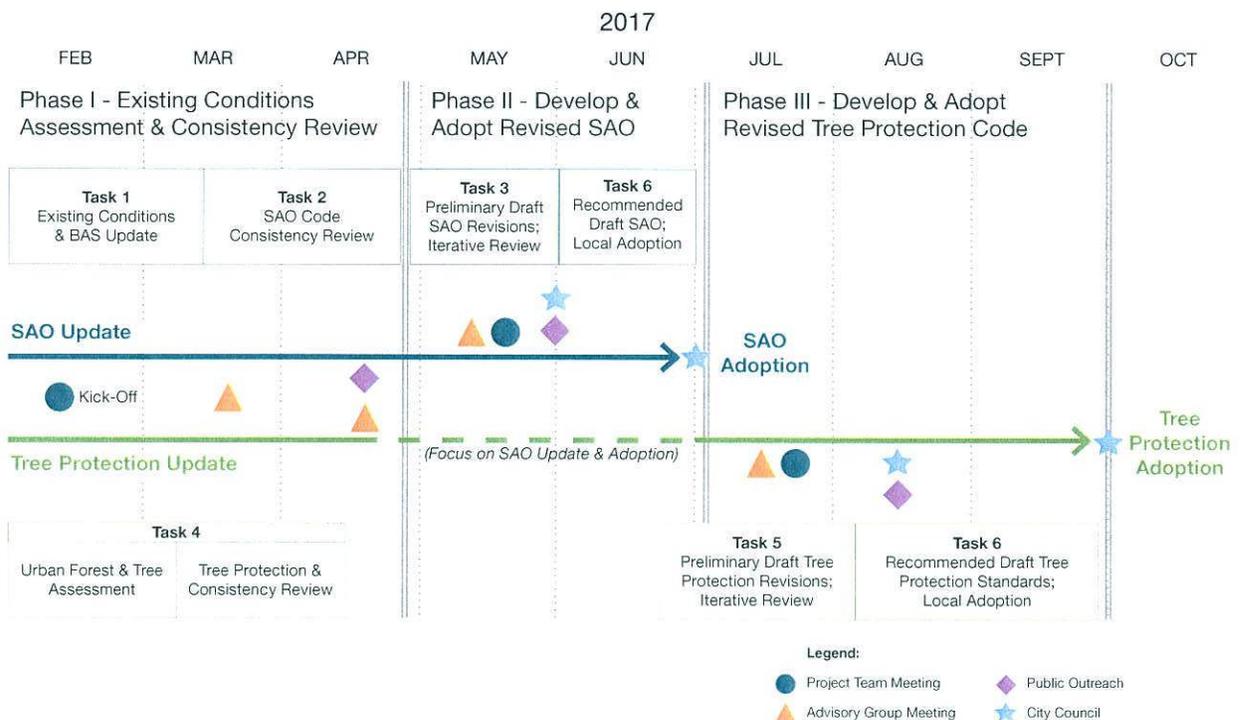
Local Adoption

The ESA team will support the City's communication with project stakeholders, the general public, the Planning Commission and City Council regarding proposed SAO and Tree Protection updates. Our technical experts are leaders in clearly presenting analysis and policy rationale to varied audiences. We will help City staff anticipate potential challenges and resolve issues quickly by leveraging our experience with other recent natural resource code updates that have been successfully approved in neighboring Puget Sound communities.

Schedule

The proposed project schedule below was developed consistent with our three-phase approach and the parameters established by your RFP. ESA will coordinate with the City during the scoping period, refining this schedule to provide specific task periods, deliverable deadlines, and meeting and outreach dates.

All deliverables - maps, data analysis, reports, draft code updates, and presentation materials - will be scheduled to include sufficient review by City staff ahead of delivery to the project Advisory Committee, the Duvall public, Planning Commission, and/or City Council.



Cost Summary

The ESA team is organized to provide cost-effective services so that we maximize the value of the available funds. Our budget allows for over 400 hours of staff time. Our cost proposal is based on the task descriptions described in this proposal, our understanding of the City, and previous experience with similar projects.

Hourly Rate:	Aaron Booy Project Manager	Dan McShane Eng. Geologist	Jim Barbarinas Senior Arborist	Ilon Logan Senior Ecologist	Pete Lawson Fisheries Biologist	Claire Hoffman Planner & Scientist	Christina Hersum Project Biologist	Jonny Kemp GIS / Graphics	Project Administrator	Hours	Cost
	\$130	\$150	\$135	\$155	\$155	\$130	\$90	\$105	\$95	Totals	
Task 1: Review and Update Duvall's BAS	18	14	2	4	2	6	40	8	4	98	\$11,240
Task 2: Review Existing SAO; Identify Update Strategies	24	8	4	4	6	4	40	4	2	96	\$11,140
Task 3: Develop SAO Code Revisions	16	12	2	4	2	4	40	0	4	84	\$9,580
Task 4: Review Existing Tree Protection Standards; Identify Update Strategies	12	2	28	2	2	16	20	8	2	92	\$11,170
Task 5: Develop Tree Protection Code Revisions	12	0	24	0	0	16	30	0	4	86	\$9,960
Task 6: City Review & Adoption Support	32	6	8	2	2	12	16	8	4	90	\$10,980
Subtotal	114	42	68	16	14	58	186	28	20	546	\$64,070
Subtotal Reimbursables											\$600
										Total	\$64,670

Principal Contact

Our project manager, Aaron Booy, will be your primary point of contact and will help establish and control the budget and schedule, and will manage our subcontractors and day-to-day communication with the ESA team. He will be responsible for the overall quality of every project deliverable. Aaron builds strong, cohesive project teams. He is responsive, attuned, and dedicated to client needs. With several current projects nearing completion, his availability to provide a high level of service to the City is guaranteed.

Cost Controls

ESA understands the City has allocated approximately \$65,000 for this effort. We are prepared to support your Sensitive Areas and Tree Protection Updates within or below this budget.

Aaron will carefully track the team's time and effort on a regular basis to provide fiscal accountability and ensure the City receives the greatest value for the associated cost. We can track project charges on a daily basis with Deltek project software. Project progress will be detailed and reported along with monthly invoices.

Project Team

Firm Profile

From our over 30 years of work assisting local jurisdictions in resource management, ESA has developed a unique set of skills, experience, and understanding that we will bring to Duvall’s Sensitive Areas and Tree Protection updates. Our proposed team has been working directly with the City for over 10 years. We understand the scientific and policy issues related to sensitive areas management and tree protection within Duvall, and have additional experience from other Puget Sound communities that we will bring to this project. Since the early 1990s, we have been engaged in numerous CAO updates and have a wealth of experience with policies and regulations of the GMA.

Aaron Booy, our proposed project manager and principal contact, brings a successful history of working in the City of Duvall and with its planning staff on both policy and project-specific challenges.

The proposed team is illustrated in the chart on this page. The scientists and planners assigned to this project have worked on multiple sensitive areas updates and forest management efforts for other municipalities, are well versed in the ecological, geological, arboriculture, and silviculture issues that are pertinent to the City, are skilled communicators and facilitators, and have detailed knowledge of the Duvall landscape.



Subconsultant Legend: + Stratum Group ^ Urban Forestry Services, Inc.

About our Subconsultants

The **Stratum Group** has been conducting geology hazard assessments throughout Washington State since their founding in 1997. They provide efficient, high quality geology, geotechnical, and environmental consulting services. The Stratum Group is well versed in the regulations and policies that govern geologically hazardous areas. They have conducted hazard assessments throughout Washington State consistent with critical areas standards. They find practical, cost effective approaches to geologic site conditions that meet applicable regulations and the needs of their clients, but also recognize that there are sites that can be highly constrained and not practical for development due to potential landslide or geology hazards.

Since 1990, **Urban Forestry Services, Inc. (UFS)** has provided horticultural consulting on trees and woody vegetation growing in urban areas. Led by Jim Barborinas, their services have included risk assessment, inventories, appraisals, enhancement, and management recommendations for all types of urban environments. UFS’s staff are experts in tree protection during site development, and in providing soil preparation and species selection recommendations for enhancement.

Project Team

Staff Name & Role	Qualifications	Reference
<p>Aaron Booy Project Manager & Principal Contact</p>	<ul style="list-style-type: none"> • 10 years of experience in aquatic ecology and environmental planning. • Natural resources specialist and project manager for the Duvall 2015 Comprehensive Plan Update and Duvall Watershed Characterization Project, respectively. • Project manager and deputy project manager for the Lynnwood CAO Update and Edmonds CAO Update, respectively. 	<p>Jared Bond City of Lynnwood 425.670.5207 jbond@ci.lynnwood.wa.us</p>
<p>Ilon Logan, PWS Senior Wetland & Wildlife Ecologist</p>	<ul style="list-style-type: none"> • 16 years of experience in SAO/CAO review; authored multiple BAS reviews for local governments and has assisted with the legislative process. • Project manager for the Olympia CAO Update and the Island County CAO Update. • Senior scientist for the Woodinville SAO Update and Edmonds CAO Update. 	<p>Donna Frostholm Jefferson County 360.385.9444 dfrostholm@co.jefferson.wa.us</p>
<p>Pete Lawson Senior Fisheries Biologist</p>	<ul style="list-style-type: none"> • 19 years of experience including preparation of environmental documentation such as Critical Areas Studies, NEPA/SEPA documents (EISs and EAs), and Habitat Conservation Plans (HCPs). • Senior scientist on the previous Duvall SAO Update and Lewis County CAO Update (while at another firm). 	<p>Craig Mueller, PE City of Bellingham 360.7787922 camueller@cob.org</p>
<p>Claire Hoffman, PWS Environmental Planner & Scientist</p>	<ul style="list-style-type: none"> • 15 years of experience in critical areas and environmental compliance and public involvement activities. • Project manager for the Magnolia Boulevard Vegetation Management Plan (VMP); environmental planner for the Mason Gulch Landscape Management Plan (LMP). 	<p>Jon Jainga Seattle Parks & Recreation 206.233.5019 jon.jainga@seattle.gov</p>
<p>Christina Hersum Project Biologist</p>	<ul style="list-style-type: none"> • 4 years of experience in biological and regulatory monitoring, intensive fieldwork, species identification, and data collection. • Project scientist on the Olympia, Jefferson County, and Island County CAO Updates. 	<p>Linda Bentley City of Olympia 360.570.3746 lbentley@ci.olympia.wa.us</p>
<p>Jonny Kemp GIS/Graphics Analyst</p>	<ul style="list-style-type: none"> • 4 years of experience analyzing visual data and spatial analytics and providing GIS support. • GIS analyst on the Duvall Watershed-Based Planning Project and Edmonds CAO Update. 	<p>Kernen Lien City of Edmonds 425.771.0220 x1223, Kernen. Lien@edmonds.wa.gov</p>
<p>Dan McShane, LEG (Stratum Group) Engineering Geologist</p>	<ul style="list-style-type: none"> • 20 years of geologic and environmental consulting experience. • Conducted over 400 geology hazard assessments in the Puget Sound area consistent with local CAOs for geologic hazardous areas, including steep slope and shoreline assessments. • Lead geologist for the Edmonds CAO Update. 	<p>Michele Sandoval Windermere 360.385.9344 sandoval@olympus.net</p>
<p>Jim Barborinas (UFS) Senior Arborist</p>	<ul style="list-style-type: none"> • 20 years of experience providing tree evaluations and protection specifications, design review, and compliance monitoring for mature and new landscape trees. • Supported Urban Forestry Strategy Plans for Sumner, Sedro Woolley, Marysville, Tacoma, Kenmore, and others. 	<p>Mark Hofman City of Snoqualmie 425.888.5337 mhofman@ci.snoqualmie.wa.us</p>

Relevant Experience

ESA has recently supported seven local governments with updates to sensitive areas standards. ESA has a successful track record of producing high-quality deliverables that convey complex natural resource and land use management information to diverse audiences.

Project Name, Location, Year Complete, Reference	Description of the Work	Project Relevance
<p>Environmental & Planning Services for the City of Duvall WA (2015, 2016, Ongoing, respectively)</p> <p>Client Contact: Ben Swanson (former Duvall staff, currently with City of Snoqualmie) 425.888.5337 bswanson@ci.snoqualmie.wa.us</p>	<p>ESA has worked with Duvall for the past 11 years, including work on these efforts:</p> <p>Watershed Planning Project: ESA helped complete a watershed-based land use planning project to support Comprehensive Plan, sensitive areas, tree protection, and stormwater management updates.</p> <p>Comprehensive Plan Update: ESA consolidated, reorganized, and updated each Plan element, developed an Environment and Sustainability element, and prepared a Draft EIS that evaluated growth, land use, and impacts, and identified mitigation strategies.</p> <p>On-Call Services: ESA leads an on-call contract, focused on implementation of standards for sensitive areas, SEPA environmental review, and shoreline development.</p>	 <ul style="list-style-type: none"> • On-the-ground Duvall experience • Advisory Group facilitation • Environmental permitting & review support • Adoption support
<p>Renton, Federal Way, Kent, Edmonds, & Lynnwood CAOs WA (Ongoing)</p> <p>Client Contact: Kernen Lien, City of Edmonds, 425.771.0220 x1223, Kernen.Lien@edmondswa.gov</p>	<p>For each project, ESA is reviewing the CAO for consistency with BAS, recommending revisions, and supporting public communication. ESA has seen the Kent, Federal Way, and Renton updates through City Council adoption and met schedules for compliance. Edmonds and Lynnwood are close to adoption.</p>	<ul style="list-style-type: none"> • BAS review • Code updates • Stakeholder input & local adoption
<p>Mason Gulch LMP Tacoma, WA (Ongoing)</p> <p>Client Contact: Desiree Pooley, City of Tacoma, 253.502.2126, DPOOLEY@ci.tacoma.wa.us</p>	<p>The City of Tacoma is proposing to develop an LMP to promote responsible management of 36 acres of open space. ESA is providing project management, site investigation, mapping, workshop and public meeting support, and LMP development.</p>	<ul style="list-style-type: none"> • Forest assessment • Public meeting support

Relevant Experience

Project Name, Location, Year Complete, Reference	Description of the Work	Project Relevance
<p>Jefferson & Island County CAOs WA (Ongoing; Ongoing)</p> <p><i>Client Contact: Donna Frosthalm, Jefferson County, 360.385.9444, dfrosthalm@co.jefferson.wa.us</i></p>	<p>ESA is reviewing each County's Comp Plan and CAO to identify connections between land use planning policies and practices and watershed processes and functions. We reviewed BAS, documented existing conditions, and conducted a needs assessment and gap analysis to identify options for policy and regulatory changes.</p>	<ul style="list-style-type: none"> • Integration of watershed information • BAS review • Needs assessment
<p>Oak Tree Preserve Habitat Management Plan (HMP) Thurston County, WA (Ongoing)</p> <p><i>Client Contact: Kevin O'Brian, Taylor Development, 425.869.1300, ko@taylordev.com</i></p>	<p>ESA is creating an HMP and conducting baseline and long-term habitat monitoring. The baseline monitoring determined habitat quality; we made recommendations to preserve habitat components and improve degraded habitat. ESA will conduct long-term monitoring to document site success.</p>	<ul style="list-style-type: none"> • Tree & forest health assessment
<p>Discovery Park Capehart Restoration Project Seattle, WA (2010)</p> <p><i>Client Contact: Gary Gibbons, Seattle Parks, 206.386-1511, gary.gibbons@seattle.gov</i></p>	<p>ESA designed restoration of 24-acres in Discovery Park. This work replaced hard surfaces and utilities with native forest, thicket, and grassland habitats. ESA developed compliance documentation, monitored the site to ensure compliance throughout construction, and coordinated public outreach.</p>	<ul style="list-style-type: none"> • Urban forest revitalization • Understanding of development impacts to trees and soils
<p>Marine Nearshore Habitat Connectivity Project Bellingham, WA (2015)</p> <p><i>Client Contact: Renee LaCroix, City of Bellingham, 360.778.7966, rlcroix@cob.org</i></p>	<p>ESA researched habitat connectivity issues in the nearshore environment and developed a model that evaluated connectivity in 28 shoreline sub-units. We chose evaluation elements, applied the model, interpreted results, and prepared a report that provided habitat connectivity background.</p>	<ul style="list-style-type: none"> • Habitat corridor analysis • Connectivity within urban environments
<p>Residential Properties Geology Hazard Assessments Jefferson County, WA</p> <p><i>Client Contact: Michele Sandoval Windermere, 360.385.9344, sandoval@olympus.net</i></p>	<p>Stratum Group conducted geology hazard assessments at steep slopes and potential landslide areas for home sites and vacant residential properties. Reports were provided that meet geology hazard CAO regulations and recommend set backs and vegetation and stormwater management.</p>	<ul style="list-style-type: none"> • Geologic hazard assessment • CAO experience • Integrated management approaches
<p>Arborist Consultation for Puget Sound Cities Snoqualmie, WA (2000 - Ongoing) (and other cities)</p> <p><i>Client Contact: Mark Hofman, City of Snoqualmie, 425.888.5337 mhofman@ci.snoqualmie.wa.us</i></p>	<p>UFS has 25 years of experience providing tree preservation, restoration, planting and maintenance plans for public clients. For Snoqualmie, UFS has provided tree assessments, tree protection guidelines, commercial and ROW landscape plan review, and installation monitoring for contract compliance.</p>	<ul style="list-style-type: none"> • Tree assessment • Tree protection guidelines

Appendix

Staff Resumes

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Aaron Booy, CFM

Project Manager & Principal Contact

EDUCATION

B.S., Aquatic and Fisheries Science, University of Washington

B.A., Design and Planning: Community and Environmental Planning, University of Washington

11 YEARS OF EXPERIENCE

CERTIFICATION/REGISTRATION

Certified Floodplain Manager: #US-12-06632

PROFESSIONAL AFFILIATIONS

Association of State Floodplain Managers

WORKPLACE LOCATION

Seattle, WA

Aaron has 11 years of experience in aquatic ecology and environmental planning. His knowledge of environmental regulations and local implementation has contributed to a wide range of shoreline management plans, critical areas standards updates, and community land use planning efforts. He is an excellent technical writer, authoring a full range of scientific and regulatory compliance documents including BAS reviews, and is experienced facilitating and presenting to varied audiences. Aaron is skilled in natural resource management and the use of science in developing environmental and land use policies. Aaron also has background in aquatic and fisheries science and brings an interdisciplinary approach to all of his planning projects.

Relevant Experience

City of Duvall 2015 Comprehensive Plan Update, WA. *Natural Resources Specialist.* ESA helped Duvall update their 2006 Comprehensive Plan, establishing a vision statement, preferred growth alternatives, population, and community issues and concerns. Aaron was the natural environment lead for development of the EIS, completed to aid in decision-making for the 2015 Comprehensive Plan and minimize the environmental impacts associated with Plan implementation. Aaron ensured that newly available information on watershed conditions was integrated into the new Plan and EIS evaluation, as well as the City's recently updated SMP.

City of Duvall Watershed Characterization Project, WA. *Project Manager.* Aaron led efforts to characterize and analyze the City's watersheds and develop strategies to protect natural processes and resources. He coordinated watershed characterization efforts with the City's Comprehensive Plan Update and EIS. Aaron facilitated watershed advisory committee meetings, led development of the Watershed Plan, and supported City adoption.

City of Edmonds CAO Update, WA. *Deputy Project Manager.* ESA reviewed the CAO for consistency with BAS, providing recommendations for revising the regulations, and supporting the City's public communication during the legislative process. Aaron led CAO code review, BAS assessment, and code update efforts. He served as a primary point of contact for the City's team, and assisted in managing the geotechnical subconsultant for the project.

City of Lynnwood CAO Update, WA. *Project Manager.* The City last updated its CAO in 2005 and several new scientific studies regarding wetlands, buffers, and wetland mitigation have been released since that time. Aaron reviewed Lynnwood's CAO regulations for consistency with the recent science for wetlands, streams, and their buffers and provided recommendations for revising the code. He oversaw drafting of code updates, and review by the City team. He supported workshops with key stakeholders and the City's Planning Commission, as well as City Council review, all to ensure understanding and support for the now updated CAO standards.



Christina Hersum

Project Biologist

EDUCATION

B.S., Environmental Science, Western Washington University

4 YEARS OF EXPERIENCE

CERTIFICATIONS/REGISTRATION

Wetland Science and Management Certificate, University of Washington

PROFESSIONAL AFFILIATIONS

Society of Wetland Scientists

WORKPLACE LOCATION

Seattle, WA

Christina is an environmental scientist with experience in various biological and ecological projects in the Pacific Northwest. Her interdisciplinary background supports biological and regulatory monitoring, intensive fieldwork efforts, species identification, and other data collection. Recently, Christina received certification in the science and management of wetlands. She is skilled in the identification, delineation, and rating of wetlands as well as regulations at local, state, and federal levels.

Relevant Experience

City of Olympia CAO Update, Olympia, WA. *Project Scientist.* ESA is supporting an update to the City's CAO (Olympia Municipal Code OMC 18.32) regulations as required under the GMA for use of BAS. ESA will review portions of the CAO for consistency with BAS. Christina was involved with the gap analysis to develop recommendations for revising the CAO based on the review.

Jefferson County CAO Update, WA. *Project Scientist.* Jefferson County is reviewing its CAO in accordance with the requirements of the GMA. The County's approach to the current CAO Update process includes a comprehensive review of the effectiveness of its current programs and regulations that pertain to the protection and management of critical areas. The County expects to focus on wetland, frequently flooded areas, and fish and wildlife habitat conservation area protections and agricultural activities exemption changes. Christina was involved with a review of BAS, watershed characterization report, and recommendations report that identifies options for policy and regulatory changes.

Island County CAO Update, WA. *Project Scientist.* ESA assembled a team to utilize a watershed-based approach to inform review of the County's Comprehensive Plan and CAO and to identify connections between land use planning policies and practices, and watershed processes and functions. This project included a review of BAS, documentation of existing conditions, and a needs assessment and gap analysis report that identifies options and provides recommendations for policy and regulatory changes. Christina provided assistance with the BAS review, gap analysis, and needs assessment.

City of Tacoma BAS Review, WA. *Project Scientist.* Christina assisted with a review of the City's Critical Areas Preservation Ordinance (CAPO) regulations as required under the GMA for use of BAS. The City is looking to evaluate the BAS literature and data compiled by the City as well as their existing CAPO regulations. ESA will provide recommendations to the City's literature inventory, review the CAPO regulations for consistency with BAS, and provide suggestions for revising the code. Christina was involved with the review to develop recommendations for revisions to the City's CAPO regulations.



Claire Hoffman, PWS

Environmental Planner & Scientist

EDUCATION

M.S.,
Environmental
Sciences - Ecology
& Evolution, Swiss
Federal Institute of
Technology,
Switzerland

B.S., Biology &
Environmental
Studies, University
of Victoria, Canada

15 YEARS OF EXPERIENCE

CERTIFICATION/ REGISTRATION

Wetland Science &
Management
Certification

Certified
Professional
Wetland Scientist
(PWS) by the
Society of Wetland
Scientists (No.
2752)

PROFESSIONAL AFFILIATIONS

Society of Wetland
Scientists

WORKPLACE LOCATION

Seattle, WA

Claire is a planner and scientist specializing in critical areas and environmental compliance. She is known for her technical writing and analytical skills and has written numerous EIS sections and SEPA checklists. Additionally, she has participated in public meetings, including presenting complex information to large groups and having one on one discussions with concerned citizens. She has successfully assembled permit packages for a variety of clients. As a Professional Wetland Scientist, Claire is skilled in wetland assessments and regulations.

Relevant Experience

Magnolia Boulevard VMP, Seattle, WA. *Project Manager.* ESA has updated the VMP for Magnolia Boulevard for Seattle Parks and Recreation. The new VMP outlines how to manage trees and other vegetation above and on the face of steep slope. Seattle Parks had traditionally trimmed trees on the steep slope for view maintenance and residents would like the City to continue to do so. However, due to slope stability and critical areas concerns, Parks no longer condones this practice. Claire was the primary author of the VMP working closely with the client, geotechnical engineer and members of the public.

Cheasty Trail Environmental Review, Seattle, WA. *Deputy Project Manager & Biologist.* Seattle Parks is proposing to build a recreational trail system in the Cheasty Greenspace located on Beacon Hill. The proposed trails consist of soft-surface bike and pedestrian trails to provide both passive and active recreation opportunities. Claire identified the wetlands and summarized this information in a technical memo along with a tree inventory, geotechnical survey, and wildlife habitat details. This report will inform the project design and potential regulatory requirements. Claire will work with the project team to avoid and minimize impacts to trees and critical areas. The SEPA checklist for this project was successfully appealed; Claire will also update the SEPA checklist for Seattle Parks.

Mason Gulch LMP, Tacoma, WA. *Planner.* ESA is assisting the City of Tacoma, Environmental Services Department with the Mason Gulch LMP. Mason Gulch is 36 acres of open space in North Tacoma. The LMP outlines a plan to manage the gulch and considers slope stability, public safety, stormwater benefits, and forest health. Vegetation management is controversial because residents would like trees topped in order to maintain their view, however the Gulch is a critical area (steep slope). ESA is providing project management, site investigation, mapping coordination, team workshop and public meeting support, and LMP development. Claire provided review of the LMP and assisted at public meetings.



Jonathan Kemp

GIS/Graphics Analyst

EDUCATION

M.S., Geography,
Western
Washington
University

B.A., Natural
Resource
Management,
Western
Washington
University

4 YEARS OF EXPERIENCE

SOFTWARE EXPERIENCE

ESRI stack, Adobe
Suite, R, SPSS,
QGIS, Mapbox,
Leaflet, Wordpress

SCRIPTING EXPERIENCE

R, CSS, Python,
HTML, JavaScript,
Excel Macros

WORKPLACE LOCATION

Seattle, WA

Jonathan (Jonny) is a GIS Analyst bringing four years of experience in analyzing visual data and spatial analytics, and providing GIS support. He is passionate about conveying research and data visually through cartography and analysis. Using ESRI or Open Source Geospatial software Jonny has performed spatial analysis and created dynamic maps and graphics suited specifically toward each project's needs.

Relevant Experience

City of Duvall Watershed-Based Planning Project, WA. *GIS Analyst.* ESA is working with the City and partners to complete a subbasin characterization extending throughout the City and surrounding areas. ESA will interpret characterization results to answer key land-use management questions that the City is facing: identification of "development capacity" for Duvall's subbasins, and effective approaches to manage and improve stormwater runoff from existing and future development. ESA will develop a stormwater strategies plan that prioritizes areas to target stormwater capital investment by using a watershed-based framework that integrated watershed processes with higher resolution hydrologic, habitat, and infrastructure elements. Jonny provided summary statistics on characterization results for various Policy Analysis Units. He developed a mapbook highlighting relevant results in relation to Duvall. Jonny has also worked within Excel, Arcmap, Illustrator, and InDesign to help create stormwater strategy summary sheets.

City of Edmonds CAO Update, WA. *GIS Analyst.* ESA is preparing an update to the City's BAS report to reflect current scientific research applicable to the Edmonds area. ESA will also assist with the SEPA review of the updated critical area regulations. Jonny aided in initially analyzing the current CAO to identify key areas that need to be updated. Jonny was instrumental in finding gap areas of potential wetlands. To accomplish this, he used a supervised flow analysis using LIDAR and the latest NAIP aerial satellite imagery.

Fern Hill Forest Site, Forest Grove, OR. *GIS Analyst.* Fern Hill Forest is a 262-acre natural area located three miles south of Forest Grove, Oregon, within the Tualatin River Watershed. ESA performed site reconnaissance to evaluate existing habitat conditions, prepared an inventory of plant species on site, and investigated opportunities for stream restoration and habitat improvements. ESA developed restoration and management recommendations for each target habitat type, developed design concepts for restoring two intermittent streams, and prepared scoping documents for design and permitting services related to stream restoration. Jonny processed field data into high precision delineations of what existed on the ground. These field delineations were translated into a full suite of high end cartographic projects for the final report.



Pete Lawson

Senior Fisheries Biologist

EDUCATION

M.S.,
Environmental
Science, Western
Washington
University

B.S., Biology,
Western
Washington
University

19 YEARS OF EXPERIENCE

CERTIFICATION/ REGISTRATION

Washington
Department of
Transportation
Biological
Assessment
Qualified Senior
Author

PROFESSIONAL AFFILIATIONS

American Fisheries
Society

WORKPLACE LOCATION

Seattle, WA

Pete is a senior fisheries biologist with over 19 years of experience managing and executing projects in the disciplines of fisheries biology and environmental science. He has performed extensive field studies and has knowledge of the life history and ecology of Pacific salmonids and the relationships of these species with physical instream, riparian and floodplain habitats and ecological processes. Pete has led and participated in assessing and characterizing physical and chemical fish habitat parameters and is well versed in habitat and population-level assessment techniques. Pete has offered a unique fisheries perspective for the revision of local municipalities CAOs, SAOs and in multiple environmental permitting scenarios (including JARPA, SEPA checklists, 401 certifications, etc.).

Relevant Experience

City of Duvall SAO Update, WA. Fisheries Biologist. While at another firm, Pete assisted the City of Duvall in revising its SAO for compliance with GMA requirements. Pete's role in the project was to make stream buffer recommendations for inclusion into the SAO code. The buffer widths and development restrictions were based on a functional analysis of the streams and attempted to conserve instream/riparian habitat in those areas (e.g., the Snoqualmie River floodplain) which offer the most potential benefit to fish species, specifically salmonids.

Lewis County CAO Update, WA. Senior Scientist. While at another firm, Pete assisted Lewis County in revising its CAO for compliance with GMA requirements. He inventoried and classified stream segments and made stream buffer recommendations for inclusion into the CAO code. He authored the Fish Habitat BAS report and worked closely with the Critical Areas Technical Group to develop an innovative approach to formulating biologically and ecologically relevant ordinances, while allowing the County maximum flexibility.

Bellingham Habitat Restoration Master Plan, Bellingham, WA. Project Manager. Led by Pete, ESA developed a science-based City-wide habitat restoration prioritization framework for the preservation, restoration, and recovery of the City's terrestrial, aquatic, and riparian habitats. The plan identifies and prioritizes opportunities for future habitat restoration based upon an assessment of existing functions within wetland, stream, riparian, and forest habitats across the entire City. Pete was project manager and the technical lead for the habitat assessment, which focuses on areas where ecological functions can be preserved or enhanced through physical habitat manipulation, property acquisition, and other forms of effective stewardship. During this project, ESA worked with a Technical Advisory Group and obtained input from City departmental staff and the public at-large to inform the plan.



Ilon Logan, PWS

Senior Wetland & Wildlife Ecologist

EDUCATION

M.M.A., Marine & Environmental Affairs, University of Washington

B.A., English, University of Washington

Certificate of Wetland Science and Management, University of Washington

16 YEARS OF EXPERIENCE

CERTIFICATIONS

Certified Professional Wetland Scientist (PWS) Society of Wetland Scientists: #1605

Master Birder, Seattle Audubon Society

Certified Wetland & Wildlife Specialist, Pierce County

WORKPLACE LOCATION

Seattle, WA

Ilon is a senior ecologist with 16 years of experience. She is well versed in sensitive or CAO review and has managed or contributed to nearly a dozen CAO updates over the past five years. She has authored multiple BAS reviews for city and county governments and has assisted them with the legislative process. As a registered Professional Wetland Scientist, Ilon is proficient in all aspects of wetland assessment, delineation, and regulation at the local, state, and federal levels. She is also well qualified in wildlife studies involving habitat survey and assessment, bird survey, threatened and endangered species, and impact evaluation.

Relevant Experience

City of Olympia CAO Update, WA. *Project Manager.* Ilon is assisting the City with an update of their CAO regulations as required under the GMA for use of BAS and special consideration for salmonids. The City last updated its CAO in 2005 and several new scientific studies regarding wetlands, buffers, and wetland mitigation have been released since that time. Ilon reviewed Olympia's regulations for consistency with the recent science for wetlands, streams, fish and wildlife habitats and their buffers and provided recommendations for revising the code.

Island County CAO Update, WA. *Project Manager.* Island County is reviewing its Comprehensive Plan and CAO in accordance with the requirements of the GMA. Ilon has led a team of biologists, hydrogeologists, and geologists to utilize a watershed-based approach to inform the evaluation and identify connections between land use planning policies and practices and watershed processes and functions. The project includes a review of BAS, documentation of existing conditions, and a needs assessment and gap analysis report that identifies options for policy and regulatory changes. Ilon has also been supporting the County with revisions to the Comprehensive Plan, critical areas regulations, and the legislative process up to adoption.

City of Edmonds CAO Update, WA. *Senior Scientist.* ESA reviewed the CAO for consistency with BAS, providing recommendations for revising the regulations, and supporting the City's public communication during the legislative process. Ilon assisted with code review, BAS assessment, and code update effort for the project.

City of Woodinville SAO Update, WA. *Senior Scientist.* Ilon assisted with review of the City's SAO as required under the GMA for use of BAS and special consideration for salmonids. Ilon prepared technical reports that summarized the state of science for wildlife, wetlands, streams, and buffer requirements. The reports addressed the spatial geography and quality of sensitive areas in the City and strategies for their protection in Woodinville. The project also included review and revision to the SAO code language for consistency with BAS.



James Barborinas

Senior Arborist

EDUCATION

M.S., Outdoor Resource Management, Southern Illinois University

B.S., Outdoor Resource Management, Southern Illinois University

25 YEARS EXPERIENCE

REGISTRATIONS

ISA Certified Arborist, International Society of Arboriculture, since 1991

ISA Tree Risk Assessment Qualified, International Society of Arboriculture, since 2004

Registered Consulting Arborist, American Society of Consulting Arborists, since 1997

WORKPLACE LOCATION

Mount Vernon, WA

As the President and founder of Urban Forestry Services, Inc. since 1990, Jim has worked throughout the Puget Sound Region with large and small communities, landscape architects, engineers, developers, housing authorities, school districts, and private citizens on many urban forest issues. He has provided tree evaluations, tree protection specifications, design review, and monitoring for contract compliance for mature and new landscape trees on numerous sites. Jim has helped develop Urban Forest Strategy Plans for the communities of Tacoma, Sumner, Mount Vernon, Puyallup, and Marysville. He is the on-call arborist for several communities including Snoqualmie, Anacortes, Mount Vernon, La Conner, Stanwood, Newcastle, and Burlington. Jim has performed thousands of street, park, and forest tree evaluations for risk assessment, maintenance, and specifications for challenging landscape installation requirements. Jim specializes in providing documentation on trees to be retained near construction activities, and recommendations on how to protect trees and perform work near them while minimizing tree damage.

Relevant Experience

Urban Forestry Strategy Plans or input for Sumner, Sedro Woolley, Marysville, Tacoma, Kenmore, & others, WA. *Senior Arborist.* Jim's work has included review of tree codes, tree protection, installation specifications, tree lists, and more.

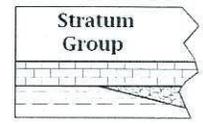
Cities of Snoqualmie, North Bend, Lake Forest Park, Mount Vernon, La Conner, Anacortes, Stanwood, & other municipalities, WA. *Senior Arborist.* For these jurisdictions, Jim has provided periodic arboricultural consultation, including tree protection and installation compliance reviews, hazard tree assessments, landscape plans, installation monitoring, and landscape appraisal reports.

Polygon Norwest Company, WA. *Senior Arborist.* Jim is providing tree assessment and documentation, tree protection planning, specifications, and onsite monitoring for multiple locations.

Sound Transit Lynnwood Link Extension, WA. *Senior Arborist.* Jim provided a Preliminary Summary of tree risk analysis for the entire 8.5-mile project site. He coordinated location, analysis, and documentation of over 8,000 trees in GIS retrievable format.

Sound Transit Federal Way Link Extension, WA. *Senior Arborist.* Jim coordinated field tree risk analysis for the entire 8-mile extension. He coordinated location, analysis, and documentation of over 11,000 trees in GIS retrievable format.

King County Housing Authority Projects (Lake City Village, Birch Creek, Greenbridge, Seola Gardens, Green River Homes, & others), WA. *Senior Arborist.* Jim is providing tree inventory, evaluation, and tree retention, including landscape installation and maintenance oversight services.



Dan McShane, LEG

Engineering Geologist

EDUCATION

M.S., Geology,
Western
Washington
University

B.S., Geology, &
B.S., Education,
Western
Washington
University

20 YEARS EXPERIENCE

REGISTRATION

Licensed
Engineering
Geologist: WA
#1376

PROFESSIONAL AFFILIATIONS

American Society of
Civil Engineers,
Geotechnical Group

Geological Society
of America

Association of
Environmental &
Engineering
Geologists

Northwest WA
Association of Earth
Scientists, Past
Chair

WORKPLACE LOCATION

Bellingham, WA

Dan is the founder and principal owner of Stratum Group, Inc., a geology and environmental consulting firm based in Bellingham, WA. Dan has conducted over 400 geology hazard assessments in the Puget Sound area consistent with various county and city CAOs for geologic hazardous areas including numerous steep slope and shoreline assessments in Island County. Projects have been primarily associated with residential development and subdivisions. Sites have varied from very low hazard sites to sites with significant geology hazards. He is currently serving on the Whatcom County Technical Advisory Committee for updating the County's CAO and Comprehensive Plan environmental and natural resources chapters. Dan has been the lead geologist on Critical Areas updates, Federal Energy Regulatory Commission licensing projects for both project proponents and citizen groups participating in the review of projects, public housing development projects, Forest Practices for both project proponents and appellants to proposed practices and on Federal Emergency Management Act repair project evaluations.

Relevant Experience

City of Edmonds CAO Update, WA. *Lead Geologist.* Dan was the lead geologist writing the BAS section related to geology and geology hazards in Edmonds. He wrote the amended draft version of the geologic hazard areas section of the CAO and was in charge of the geology section of the public workshops. He participated in presentations of the draft ordinance to the City Planning Commission and City Council.

Lake Whatcom Landscape Plan, Whatcom County, WA. *Geologist.* Dan served on the planning committee that made recommendations to the Department of Natural Resources for the development of the Lake Whatcom Landscape Plan. The committee reached consensus with the Department of Natural Resources on all major components of the plan related to geology hazards and stream protections in a lake watershed setting. Dan ensured that all public comments and technical comments during the EIS process were incorporated into the plan.

Beachcomber Homeowners Association, Greenbank, WA. *Geologist.* Dan conducted a geology hazard assessment of the steep slope rising above the Beachcomber Homeowner site near Greenbank, Washington, on the east shore of Whidbey Island. Dan then worked with the homeowners group to develop a VMP for manage vegetation on the unstable slope to reduce the potential risk of landslides damaging homes at the base of the slope. The plan was approved by Island County and has been followed with two rounds of active vegetation removal of potentially hazardous trees from the slope.

Chapter 14.40 - TREE PROTECTION

Sections:

14.40.010 - Purpose.

The purposes of this chapter are to: avoid the removal of stands of trees and significant trees in order to maintain the quality of Duvall's urban environment; encourage the protection of stands of trees and significant trees to the maximum extent possible in the design of new developments, buildings, roadways and utilities; mitigate the environmental and aesthetic consequences of tree removal in land development through on- and off-site tree replacement to achieve a goal of no net reduction in the number of significant trees throughout the city of Duvall; provide measures to protect trees that may be impacted during construction; maintain and protect the public health, safety and general welfare.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.020 - Applicability.

- A. DMC Section 14.40.030 applies to the removal of significant trees on developed lots, that is, a lot that is part of a subdivision or site plan approval or a lot that was built out under previous regulations.
- B. DMC Sections 14.40.040 through 14.40.110 apply to applications for new developments, including but not limited to: short or long subdivisions, site plans, building permits, conditional use permits, and development agreements. Removal of significant trees on redevelopable or undeveloped lots are subject to the same provisions as applications for new developments.
- C. For the purposes of this chapter, a significant tree is a tree that measures a minimum of sixteen (16) inches in diameter at breast height (four and one-half feet above the ground).
- D. A root protection zone is measured five feet outside of the dripline of a tree.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.030 - Developed lots—Residential or commercial.

The following regulations shall apply to developed lots:

- A. Any property owner may remove up to two significant trees from a lot each year without a permit, provided that the following criteria are met: the tree(s) is not in a native growth protection area, sensitive area, or sensitive area buffer; the tree is not shown on an approved tree plan as to be retained; the tree is not the last one or two trees on the lot. A property owner is required to submit a letter of request prior to removal. The property owner shall plant one tree for each tree removed.
- B. Hazard, dead, or dying trees can be removed after a letter of request documenting the situation is submitted to the city by a property owner and/or homeowner's association. In the event that a tree is not obviously dead, dying or a hazard, a letter from an arborist describing the condition of the tree shall be submitted with the letter of request. Hazard, dead, or dying trees do not count toward the annual removal allowance set out in DMC Section 14.40.030(A). Tree replacement for such trees shall be at a one tree to one tree ratio.
 - 1. A hazard tree is one that has a disease and/or defect which makes it have a high probability of failure. This can include root rot, a significantly decayed trunk, two stems pressing on each other, previous failure in the crown, or other defect as identified by a certified arborist.

- C. Any tree on private property that poses an imminent threat to life or property may be removed without first obtaining a permit/city approval. The property owner shall contact the city within seven days of removal to provide evidence of threat for approval of exemption. The city retains the right to dispute the emergency and require that replacement trees/vegetation be replanted as mitigation.
 - 1. Imminent danger means that the conditions of the situation make it an immediate threat of failing. An imminent danger includes, but is not limited to, a tree leaning from a storm event, breaking roots, a new crack at branch or stem attachments, and hanging broken branches.
- D. A property owner and/or homeowner's association requesting to take out trees that are in a native growth protection area (NGPA), sensitive area, or sensitive area buffer shall only be permitted to remove such trees if an arborist determines they are dead, dying or hazard trees. The woody debris from the trees may be required to be retained in the NGPA or sensitive area after removal for habitat purposes. A minimum of one tree shall be planted in the NGPA or sensitive area for each tree removed. A larger number of smaller trees may be permitted by the director in lieu of a two-inch caliper deciduous or eight-foot tall evergreen tree.
- E. A property owner and/or homeowner's association requesting to remove a tree(s) shown on an approved tree plan as to be retained or the last one or two trees on the lot shall be required to replace such trees at a two tree to one tree ratio.
- F. Tree replacement may be made through an in-lieu fee in accordance with DMC Section 14.40.070.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.040 - New development sites—Submittal requirements.

- A. On new development sites, a plan is required to be submitted with the land use application that sets out the following:
 - 1. Size, species, and location of all significant trees. Trees that are on adjacent properties that have a dripline extending on to the property under application shall also be identified;
 - 2. Calculation setting out number of trees, the average number of trees per acre, the number of hazard, dead, or dying trees and the required number of retained trees, both for significant trees and for overall tree retention;
 - 3. Trees proposed for retention;
 - 4. Sensitive areas, including buffer and type.
- B. The plan shall be submitted with a professional evaluation and/or a tree protection plan prepared by an arborist. Such professional evaluation and/or tree protection plan should include:
 - 1. Complete description of each tree's health and viability. If a tree is not viable for retention, the reason(s) must be soundly based on health, high risk of failure due to structure, defects, unavoidable isolation (wind firmness), or suitability of species and for which no reasonable alternative action is possible (pruning, cabling, etc.). Impact of necessary tree removal to remaining trees, including those in a grove or on adjacent properties, must also be discussed.
 - 2. Location of limits of disturbance around all trees and any special instructions for work within that protection area (hand-digging, tunneling, root pruning, maximum grade change).
 - 3. Discussion of timing and installation of tree protection measures that must include fencing and be in accordance DMC Section 14.40.080. Measures may include trenching, mulching, pruning, tree care during construction, and post-construction requirements (long-term management).
 - 4. Suggested location and species of trees to be used for replacement when required and including planting and maintenance specifications.

- C. The applicant shall be responsible for all costs associated with city review of such tree plans and for the costs related to arborist field visits, plan development, and plan review.
- D. The applicant's tree retention plan shall be consistent with DMC Section 14.40.060, Priorities for tree retention. The applicant shall identify in how their proposal meets DMC Section 14.40.060, including for trees on adjacent properties as described in subsection (A)(1) of this section.
- E. Significant trees shall be tagged and numbered for field verification at time of application submittal.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.050 - New development sites—Percentage of trees required to be retained.

- A. A minimum of thirty-five (35) percent of all significant trees on a site shall be retained. All significant trees on a site shall be counted towards the total number of significant trees, except if a tree is a hazard, dead, or dying, such tree shall not be counted. Calculations resulting in fractions shall be rounded up.
- B. Of the thirty-five (35) percent of trees required for retention, a minimum of three-fourths of those trees can be located in sensitive areas or buffers. If there are significant trees suitable for retention outside of sensitive areas and buffers, one-fourth of the trees to be saved shall be outside of sensitive areas and buffers. If all significant trees are in a sensitive area or buffer, all of those trees shall be retained.
 - 1. The director may grant reductions or adjustments to other site development standards if more than thirty-five (35) percent of the healthy significant trees are saved outside of sensitive areas. In a case-by-case review, the director shall determine the balance between tree protection that exceeds the established minimum percentage and variations to site development requirements. Adjustments that may be considered are:
 - a. Reductions or variations of the area or width of required open space and/or landscaping;
 - b. Variations in parking lot design and/or and access requirements;
 - c. Variations in building setback requirements;
 - d. Reduction in the width of certain easements;
 - e. Variations of grading and stormwater requirements;
 - f. Other variations which are proposed and determined to be appropriate and acceptable by the director.
- C. There shall be no net reduction of the total number of viable significant trees on a site. The total number of viable significant trees located on a site is the number of trees subject to the no significant tree reduction policy. See example subsection (C)(1) of this section to determine what trees are counted toward the no significant tree reduction policy.

1. Example: Number of trees to be retained/number of trees counted towards no significant tree reduction policy.
82 significant trees on a site, including trees in sensitive areas and buffers, and in potential right-of-way or easements.
Arborist report shows 5 dead trees and 3 hazard trees.
82 trees - 8 trees = 74 Significant Trees. 74 trees X 35% = 25.9 trees, or 26 trees to be retained.

74 trees are required to be counted in determining how many trees are provided under the no significant tree reduction policy.		
Summary:	After construction	26 significant trees retained, + 48 additional trees on the site = 74 total trees

2. All trees proposed for or existing on the project site shall be counted towards the no significant tree loss reduction policy number.
3. Development sites with an average tree density of more than twenty (20) trees per acre after development shall be reviewed by the director to determine if the no significant tree loss number should be reduced due to the high density of trees. The director has the ability to reduce the total number of trees on a lot in such cases; however, in no case shall such number be less than the sum of the thirty-five (35) percent of significant trees, the remaining trees in sensitive areas and trees required in accordance with DMC Chapter 14.38, Landscaping Standards.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.060 - New development sites—Priorities for tree retention.

- A. Tree Priority for Retention/Site Design. The site plan shall take into account significant trees and be designed in accordance with the following guidelines:
 1. The incorporation of trees as a site amenity with a strong emphasis on tree protection. Forested sites should retain their forested look, value, and function after development, to the extent possible.
 2. Trees should be protected within vegetated islands and stands rather than as individual, isolated trees scattered throughout the site. The city may refuse to consider individual, isolated trees as candidates for retention.
 3. Trees to be preserved must be healthy and wind-firm as identified by an arborist. In designing a development project, the applicant shall prepare the required tree plan with consideration of the following retention priorities:
 - a. Tree groves and associated vegetation that are in an area that can be set aside in a NGPA;
 - b. Trees having a significant land stability function in geologically hazardous areas;
 - c. Trees located in the site perimeter, especially when they provide a screening function;
 - d. Trees that are a part of grove that extends into adjacent property, such as in a public park, open space, sensitive area buffer or otherwise preserved group of trees on adjacent private property. If significant trees must be removed in these situations, an adequate buffer of smaller trees may be required to be retained or planted on the edge of the remaining grove to help stabilize the grove;
 - e. Specimen trees (a mature tree in exceptional health and form for its species);
 - f. Other viable trees.
 4. Building footprints, parking areas, roadways, utility corridors and other structures should be designed and located with a consideration of tree protection opportunities.

5. The grading plan should be developed to accommodate existing trees and avoids alteration to grades around existing significant trees to be retained.
6. Required open space and recreational space is designed and located to protect existing stands of trees.
7. The site design and landscape plans provide suitable locations and adequate area for replacement trees as required in DMC Section 14.40.070.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.070 - Tree replacement—New developments and developed lots.

- A. New Development Sites. Applicants that do not propose to retain thirty-five (35) percent of significant trees shall replace any portion of the required thirty-five (35) percent of significant trees at a three trees to one tree ratio.
- B. All Sites. Replacement trees shall be planted on the site from which significant trees are removed unless the director agrees to off-site replacement or a fee in lieu of replacement.
- C. When on-site replacement cannot be achieved, the director may consider the following alternatives:
 1. Off-site tree replacement with replacement costs (material plus labor) at the applicant's expense.
 - a. Allowable sites for receiving off-site replacement plantings are city-owned properties or private open space which is permanently protected and maintained, such as an NGPA, park properties, street rights-of-way, and other properties as determined appropriate by the director.
 - b. All trees to be replaced off-site shall meet the replacement standards of this chapter.
 2. A fee in lieu of tree replacement may be allowed, subject to approval by the director.
 - a. The amount of the fee shall cover the cost of a tree, installation (labor and equipment), maintenance for two years, and fund administration. Such costs shall be determined by the city.
 - b. The fee shall be paid to the city prior to final site plan or final plat approval, or the issuance of a tree removal permit or letter, whichever applies.
 3. Where appropriate, the director may consider other measures designed to mitigate the loss of trees by restoring all or parts of the forest landscape and its associated benefits. Measures may include, but are not limited to:
 - a. Creation of wildlife snags from trees which would otherwise be removed;
 - b. Replacement of certain ornamental trees with native shrubs and groundcover;
 - c. Replacement of dying or hazardous trees with new trees more likely to survive;
 - d. Daylighting and restoration of stream corridors with native vegetation;
 - e. Protection of non-significant trees to provide for the successional stages of forest development.
- D. Tree Replacement Guidelines and Requirements.
 1. When individual significant trees or significant tree stands are protected, replacement trees should be planted to enhance such trees or tree stands.
 2. Replacement trees may be planted within an existing NGPA where the director determines that such planting enhances and complements existing vegetation and environmental functions.

3. Replacement trees shall be planted in locations appropriate to the species' growth habit and horticultural requirements.
 4. Replacement trees shall be located to provide screening of the development from adjacent properties, where appropriate.
 5. Replacement trees shall be planted in areas that connect or are adjacent to native growth protection areas or other open spaces, where appropriate.
 6. Replacement trees shall be integrated into the required landscape plans for a development.
 7. Replacement trees should not be planted next to or under power lines.
- E. Size, Species and Condition of Replacement Trees.
1. Minimum sizes for replacement trees shall be two-inch caliper at breast height for deciduous trees and eight feet in height for evergreen trees.
 2. The director may consider smaller-sized replacement trees if the applicant can demonstrate that smaller trees are more suited to the species, site conditions, and to the purposes of this section, and are planted in sufficient quantities to meet the intent of this section.
 3. The director may require that a portion or all of the replacement trees be native species in order to restore or enhance the site to predevelopment character.
 4. The condition of replacement trees shall meet or exceed current American Nursery and Landscape Association or equivalent organization's standards for nursery stock.
- F. Installation.
1. Installation of required replacement trees shall be in accordance with best management practices for landscaping which ensure the tree's long-term health and survival.
 2. All required tree replacement and other required mitigation shall be completed prior to issuance of final site plan or plat approval, unless approved by the director and bonded in accordance with DMC Section 14.38.160.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.080 - Tree protection—Construction of new developments.

- A. To ensure long-term viability of trees and tree stands identified for protection, permit plans and construction activities shall comply with the following minimum required tree protection:
1. All minimum required tree protection measures shall be shown on the tree plan and the site grading plan.
 2. All construction activities, including staging and traffic areas, shall be prohibited within the root protection zone of a protected trees.
 3. To ensure that structures, utilities, and roadways are located an adequate distance from the dripline of a protected tree and to allow adequate room for construction activities, the construction limit line for a structure, utility, or roadway shall be located no closer than the root protection zone of a protected tree.
 4. No proposed structure, utility, or roadway shall be located in the root protection zone of a protected tree, except where such structure is a raised deck, bay window, or cantilevered or otherwise raised above the ground's surface so as not to disrupt the tree's roots.
 5. Sidewalks and utilities may be located within the dripline of a protected tree, provided that construction methods and materials used will result in minimal disruption of the tree's roots, and that additional measures for tree protection are proposed and approved which will ensure the long-term viability of the tree.

6. The director may allow construction limits or an alteration of grades within the root protection zone, provided that the applicant submits an evaluation by an arborist which demonstrates that the proposed construction will not reduce the long-term viability of the tree.
 7. The director may require an evaluation by an arborist to determine if protective measures should be required beyond the root protection zone.
 8. Tree protection barriers shall be installed along the outer edge and completely surround the root protection zone of significant trees to be protected prior to any land disturbance.
 9. Tree protection barriers shall be a minimum of four feet high, constructed of chain link, or polyethylene laminar safety fencing or similar material, subject to approval by the director. "Tree protection area" signs shall be posted visibly on all sides of the fenced areas. On large or multiple-project sites, the director may also require that signs requesting subcontractor cooperation and compliance with tree protection standards be posted at site entrances.
- B. Preventative Measures. In addition to the above minimum tree protection measures, the applicant shall support tree protection efforts by employing, as appropriate, the following preventative measures, consistent with best management practices for maintaining the health of the trees:
1. Pruning of visible deadwood on trees to be protected or relocated;
 2. Application of fertilizer to enhance the vigor of stressed trees;
 3. Use of soil amendments and soil aeration in tree protection and planting areas;
 4. Mulching over tree dripline areas; and
 5. Ensuring proper water availability during and immediately after construction.
- C. Prior to final plat or final site plan approval, an arborist hired by the applicant shall be required to inspect all trees remaining on a site and provide a written report as to the status of such trees. Any protected tree found to be irreparably damaged, severely stressed or dying shall be replaced at a three tree to one tree ratio if it is part of the required thirty-five (35) percent requirement, or at a one tree to one tree ratio if in excess of the thirty-five (35) percent, but counted towards the overall tree number. The enforcement standards of DMC Section 14.40.100 may also apply at the director's discretion. The director will take into account the reasons for the damaged trees in determining if the fine set out in DMC Section 14.40.100 applies.
- D. Alternative Methods. The director may approve the use of alternative tree protection techniques if a protected tree will be protected to an equal or greater degree than through the techniques listed above.
- E. Designation of Protected Trees.
1. The tree plan and any application and permit plans that cover such areas shall show all trees designated for protection/retention. These areas may be shown by labeling them as "protected trees" or "native growth protection areas" or such other designation as may be approved by the director. Protected vegetation, including protected trees, shall not be modified, harmed or removed except as provided in this chapter.
 2. The director may require that protected trees be permanently preserved within a tract, easement or other permanent protective mechanism. When required, the location, purpose, and limitation of these protected areas shall be shown on the face of the deed, plat, site plan, or similar document and shall be recorded with the King County Department of Records and Elections. The recorded document shall include the requirement that the protected areas shall not be removed, amended or modified without the written approval of the city of Duvall.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.090 - Maintenance.

- A. All required replacement trees and relocated trees shown on an approved tree plan shall be maintained in healthy condition by the property owner throughout the life of the project, unless otherwise approved by the director in a subsequent permit.
- B. Cutting and Pruning.
 - 1. Protected trees shall not be topped.
 - 2. Street trees, on all public streets, shall be cut or pruned only under the supervision of, or with the approval of, the city of Duvall public works department.
 - 3. Pruning and maintenance of protected trees shall be consistent with best management practices in the field of arboriculture and further the long-term health of the tree.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.100 - Enforcement.

- A. Significant trees that are shown on a plan as to be retained as part of the thirty-five (35) percent requirement shall not be damaged and/or removed during, or as a result of, construction. If such trees are damaged and/or removed, the applicant shall be responsible for paying a fine of one thousand dollars (\$1,000.00) per tree plus installing replacement trees and/or paying an in-lieu fee as set out in DMC Section 14.40.070 at a three trees to one tree ratio.
- B. Significant trees that are shown on a plan as to be retained as part of the thirty-five (35) percent requirement shall be retained for the life of the project, unless such trees become hazardous, or as set out in DMC Section 14.40.030. If such trees are removed without a permit and/or approval of the city, the property owner shall be responsible for paying a fine of one thousand dollars (\$1,000.00) per tree plus installing replacement trees and/or paying an in-lieu fee as set out in DMC Section 14.40.070 for the equivalent diameter of the tree(s) removed.
- C. Significant trees that are saved in excess of the required thirty-five (35) percent shall not be subject to subsection A or B of this section unless such trees were saved in exchange for other considerations as set out in DMC Section 14.40.050(B)(1).

(Ord. 1056 § 1 Exh. A (part), 2007)

14.40.110 - Exemptions.

The following shall not be subject to the provisions of this chapter:

- A. Hazard, dead, or dying trees can be removed after a letter of request documenting the situation is submitted to the city by a property owner. In the event that a tree is not obviously dead, dying or a hazard, a letter from an arborist describing the condition of the tree shall be submitted with the letter of request. Hazard, dead, or dying trees do not count toward the annual removal allowance set out in DMC Section 14.40.030(A). Tree replacement for such trees shall be at a one tree to one tree ratio.
- B. Emergency Tree Removal. Any tree on private property that poses an imminent threat to life or property may be removed without first obtaining a permit/city approval. The property owner shall contact the city within seven days of removal to provide evidence of threat for approval of exemption. The city retains the right to dispute the emergency and require that the party obtain a permit and/or require that replacement trees/vegetation be replanted as mitigation.
- C. Utility Management. Removal of private trees by the city and/or utility provider in situations involving immediate danger to life or property, or interruption of services provided by a utility.
- D. Commercial Nurseries or Tree Farms. Removal of trees that are being grown to be sold as Christmas or landscape trees.

(Ord. 1056 § 1 Exh. A (part), 2007)

Chapter 14.42 - SENSITIVE AREAS REGULATIONS

Sections:

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, geologically hazardous areas, frequently flooded areas, and critical aquifer recharge areas 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, 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 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 or variance provisions of DMC Section 14.42.070; 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; 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)

14.42.030 - 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 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. 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. 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.

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 of existing irrigation and drainage ditches;
 5. Normal and routine maintenance of farm ponds, fish ponds and livestock watering ponds; 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.
- 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.

- 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, Repair 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. 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 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 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 posing a threat to public safety, or an imminent risk of damage to a permanent structure; and provides a replanting schedule for the replacement trees in compliance with the replacement tree requirements of subsection (F)(2)(d) of this section;
 - b. Tree cutting shall be limited to pruning and crown thinning, unless otherwise justified by a certified arborist or professional forester. Where pruning or crown thinning is not sufficient to address the hazard, trees 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 replacement tree for each tree removed (1:1) in accordance DMC Section 14.40.030(D). 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. Hazard trees or trees that pose an imminent threat to life or property 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. 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.
- 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.
- 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.

- 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. An application for a sensitive areas reasonable use exception shall follow the procedures for a Type III review pursuant to DMC Chapter 14.08, Permit Processing.

(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 - Density credits.

- A. Sensitive areas and their buffers may be used in the calculation of allowed residential density.
- B. Full density as allowed by underlying zoning and minimum residential density goals may not be attained on specific parcels where sensitive areas impose inherent limitations on development intensity.

(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 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.
- 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. The applicant shall submit proof that the notice, 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. 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. 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.
- E. Permanent Fencing. 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.

(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, monitoring and performance of mitigation actions.
 - 1. 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. The surety shall be in the form of an assignment of funds or other means approved by the director.
 - 3. 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. 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. 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. 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.
- C. 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 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. Swamps, marshes, bogs, and wet meadows/pastures are examples of wetlands. Some riparian areas adjacent to streams are also wetlands.
- B. Wetlands shall be 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 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 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 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 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 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.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 lacks adequate vegetation, the director may require buffer planting or enhancement, and/or deny a proposal for buffer reduction or buffer averaging.
 3. 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										
Points for Habitat Function from Wetland Rating Form	19	20	21	22	23	24	25	26	27	28
	Low Habitat Score	Moderate Habitat Score								
Category I, II and III wetlands	60'	80'	80'	100'	100'	120'	120'	140'	140'	150'

4. For Category I, II or III wetlands with high habitat functions as indicated by a score of twenty-nine (29) points or more on the habitat functions worksheet, the buffer width shown above will be increased by an additional twenty (20) feet for each additional habitat rating point.
5. The standard buffer width for Category IV wetlands shall be fifty (50) feet.
6. 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 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. The director shall have the authority to reduce the standard buffer widths 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 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;
 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.
 3. The buffer of a Category III or IV wetland shall not be reduced to less than fifty (50) percent of the standard buffer.
 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 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:
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. 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.
- 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, 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.

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.

(Ord. 1056 § 1 Exh. A (part), 2007)

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. 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:

- 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 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 when no feasible conveyance alternative is available 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 and the road, bridge or trail is 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.
- E. Access to private development sites may be permitted to cross Category II, II, or IV wetlands or their buffers 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 basins, within the outer fifty (50) percent of the standard Category II, III or IV wetland buffer, provided that:
 - 1. Construction of the stormwater facility does not displace or impact a forested buffer 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 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;
 - 4. 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 buffer 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 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 walkways, wildlife viewing structures, and trails, in wetland buffers 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. The trail or facility is located in the outer fifty (50) percent of the standard buffer area where feasible.
 3. The trail is constructed and maintained in manner that minimizes disturbance of the buffer and associated sensitive areas.
- I. The director will allow alteration or displacement of Category IV wetlands less than two thousand (2,000) square feet 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. 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.
- J. Category IV Wetlands. Activities and uses that result in unavoidable impacts may be permitted in Category IV wetlands and associated buffers in accordance with an approved sensitive area report and mitigation plan, and only after all impact avoidance and minimization measures have been 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 regulations and meet the criteria in subsections (I)(1) through (I)(4) 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 following standard 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.

(Ord. 1056 § 1 Exh. A (part), 2007)

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 mitigation plan pursuant to DMC Sections 14.42.130(C) and 14.42.240 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			

* 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 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

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. 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. 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, 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. Protection. All mitigation areas shall be permanently protected and managed to prevent degradation and ensure protection of sensitive area functions and values into perpetuity. Permanent protection shall be achieved through deed restriction or other protective covenant in accordance with DMC Section 14.42.100.

- J. Timing. 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.

(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 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. 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 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;

- I. 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 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 involves establishment of forested plant communities, which require longer time for establishment.
 4. 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 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;
 - 3. Natural area preserves and natural resource conservation areas;
 - 4. Areas with which species listed under the Federal Endangered Species Act have a primary association;
 - 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. Streams 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 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. 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 species. The director shall make

determinations of known or potential fish 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 use by a qualified professional.

3. Other nonsalmon bearing streams that do not meet the definition of shorelines of the state.
 4. 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. Streams under the jurisdiction of the Shoreline Management Act—one hundred fifty (150) feet;
 2. Salmon bearing streams—one hundred (100) feet;
 3. Other fish bearing streams—seventy-five (75) feet;
 4. Nonfish-bearing streams—fifty (50) feet;
 5. Nonfish-bearing 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;
 - 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.
		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.
		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.
		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.
		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-Clemons 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 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-Clemons 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.
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- 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;
 2. The buffer shall not be reduced to less than fifty (50) percent of the standard buffer;
 3. The slopes adjacent to the stream within the buffer area are stable and the gradient does not exceed thirty (30) percent;
 4. 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. 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.
- 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 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. 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.
- I. 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.

(Ord. 1056 § 1 Exh. A (part), 2007)

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 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 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 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 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 detention/treatment ponds, media filtration, facilities and infiltration basins may be permitted in a standard stream buffer, subject to 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 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 reseeded 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 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 fifty (50) percent of the standard buffer, except for limited viewing platforms and crossings; shall not exceed four 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)

14.42.340 - 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 - 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
<p>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.</p>	<p>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.</p>

<p>Natural area preserves and natural resource conservation areas</p>	<p>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.</p>
<p>Locally important habitat areas</p>	<p>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 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.</p>

- 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—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.
- B. The director may waive the report 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. 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. 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; and measures to avoid, minimize, and/or mitigate adverse impacts of the proposed development;
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 - 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 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.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.400 - Geologically hazardous areas—Designation and mapping.

- A. 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;
 - 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 that have a relatively permeable geologic unit overlying a relatively impermeable unit and have springs or groundwater seeps;
 - d. Areas that have shown evidence of historic failure or instability, including but not limited to back-rotated 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;
 - e. Areas that show past sloughing or calving of bluff sediments, resulting in a vertical or steep bluff face with little or no vegetation;
 - f. 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, lahars, or landslides on maps published by the U.S. Geological Survey or Washington State Department of Natural Resources.
2. Seismic Hazard Areas. 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 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:
 - 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 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 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.
- H. 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.

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

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.430 - Geologically hazardous areas—Landslide hazard area standards.

- A. 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 sedimentation risk or 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. The 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 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. 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 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.
1. Minimum Buffer.
 - a. The buffer from the top of a 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; or
 - iii. Fifty (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; or
 - ii. Fifty (50) feet from the toe of the slope.
 2. Buffer Reduction. The buffer 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 stability.
 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.

- 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 Section 14.42.430(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 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 the director shall have the authority to require the submittal of a geological assessment report.
- B. A geological 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, review of public records and documentation, and interviews with adjacent property owners. 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. 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 hazardous 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 areas—Designation and mapping.

Flood hazard areas are those areas of Duvall subject to inundation by the base flood. Management of flood hazard areas shall be in accordance with DMC Chapter 14.84 of this title.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.600 - Critical aquifer recharge areas—Designation and mapping.

- A. Aquifer recharge areas susceptible to degradation or depletion because of hydrogeologic characteristics are those areas meeting the criteria established by the state Department of Ecology (Guidance Document for the Establishment of Sensitive Aquifer Recharge Area Ordinances, July 2000, Publication No. 97-30, Version 4.0). 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. 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.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.620 - Critical aquifer recharge areas review.

- 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. 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.
- 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.

(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.

"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 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 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.

"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 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 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 breeding/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.

"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.

"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 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 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)