

CITY OF DUVALL
Planning Department
Determination of Non-Significance
2017 Sensitive Area Policy Update and Implementing Zoning
Code Amendments
October 6, 2017

PROJECT NAME / DESCRIPTION OF PROPOSAL

City of Duvall Code Amendments (Sensitive Area Policy (SAO) and Implementing Zoning Code Amendments): The City of Duvall is in the process of updating its Sensitive Area Ordinance (DMC14.42) in accordance with the requirements of the Growth Management Act (GMA) (RCW36.70.A). The GMA requires the City consider Best Available Science in the development of critical area polices and regulations. The City adopted a Watershed Management Plan (2015) and a Comprehensive Plan (2016) that set the framework for the update of the SAO and implementing watershed management polices into the zoning code (Title 14). The City completed a Gap Analysis and Best Available Science Consistency review as part of the policy work and is included with the SEPA checklist along with a draft of the SAO and zoning code amendments.

APPLICANT/CONTACT

Lara Thomas, Planning Director
City of Duvall, P.O. Box 1300, Duvall, WA 98019 / 425-939-8079

PROPERTY OWNER/CONTACT

Not Applicable as this is a Non-Project Action.

LEAD AGENCY

Lead Agency: City of Duvall, PO Box 1300, Duvall, WA 98019

The responsible official hereby makes the following determination based upon impacts identified in the environmental checklist and evaluated by staff, the policies set out in the 2015 City of Duvall Comprehensive Plan, and other municipal policies, plans, rules, and regulations designated as a basis for the exercise of substantive authority of the Washington State Environmental Policy Act Rules pursuant to RCW 43.21C.

It is hereby determined that this proposal does not have a probable significant adverse impact on the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.031(1). This DNS is issued under WAC 197-11-340; the lead agency will not act on this proposal for at least 14 days from October 6, 2017.

DESCRIPTION OF ACTION AND IMPACTS

Action: This is a non-project action. Individual evaluations and permits will be completed prior to any construction activity.

COMMENT PERIOD

Comments regarding the DNS must be submitted no later than **4:30 p.m. on Friday, October 20, 2017**. Appeals shall be filed in accordance with DMC 14.08.060.C.

RESPONSIBLE OFFICIAL

Lara Thomas, Planning Director
PO Box 1300, Duvall, WA 98019, (425) 788-1156

Lara Thomas, Planning Director

10/6/17

Date



CITY OF DUVALL

SENSITIVE AREAS ORDINANCE (SAO) and implementing zoning policies

DMC 14.14 Multi-family Residential Zone (R12)

DMC 14.16 Multi-family Residential Zone (R20)

DMC 14.18 Mixed Used 12 (MU12)

DMC 14.19 Mixed Use Institutional (MUI)

DMC 14.20 Midtown (MT)

DMC 14.28 Commercial (CO)

DMC 14.30 Light Industrial (LI)

DMC 14.31 Parks and Open Space (PO)

DMC 14.32 Public Facilities (PF)

DMC 14.64 Additional Development Standards

September 27, 2017

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ENVIRONMENTAL CHECKLIST

A. BACKGROUND

- 1. Name of the proposed project:**
City of Duvall Sensitive Areas Ordinance (SAO) Update (DMC 14.42), Watershed Management policy (14.64.250), and Impervious Surface policies with in zoning districts to implement SAO
- 2. Name of Applicant:**
City of Duvall
- 3. Address and telephone number of applicant and contact person:**
Lara Thomas, Planning Director
City of Duvall
P.O. Box 1300
Duvall, WA 98019
(425) 788-2779
- 4. Date checklist prepared:**
September 14, 2017
Updated September 27, 2017
- 5. Agency requesting checklist:**
City of Duvall
- 6. Proposed timing or schedule (including phasing, if applicable):**
It is expected that the City of Duvall Planning Commission and City Council will adopt the updated SAO by resolution in late 2017.
- 7. Plans for future additions, expansion, or further activity related to or connected with this proposal:**
State law requires that SAOs be updated periodically. Pursuant to the requirements in RCW 36.70A.130(4), the next comprehensive SAO update for the City of Duvall will likely occur in 2023. However, updates may be adopted at any time.
- 8. Environmental information that has been prepared, or will be prepared, directly related to this project:**
 - *Sensitive Areas Ordinance Update—Gap Analysis and Best Available Science Consistency Review* (Environmental Science Associates [ESA] & Stratum Group, 2017)
 - *City of Duvall Watershed Plan* (ESA, 2015)

- *City of Duvall Comprehensive Plan* (City of Duvall, 2015)
- *Department of Commerce Critical Areas Checklist* (to be prepared)

As required by WAC 365-195, the updated SAO is based on a review and synthesis of Best Available Science (BAS). The BAS code consistency review is included in this checklist as Attachment A.

9. Applications that are pending for governmental approvals or other proposals directly affecting the property covered by the proposal:

No pending applications or approvals would be affected by the updated SAO. Once adopted, the updated SAO would apply to any new use or development within the City of Duvall. Permit applications for development within sensitive areas and their buffers would be processed according to the SAO regulations and procedures in effect at the time the application was determined to be complete.

10. List of governmental approvals or permits that will be needed for the proposal:

The updated SAO will need the following approvals:

- Review and threshold determination under the State Environmental Policy Act (SEPA) for non-project actions; and
- Adoption by the City of Duvall City Council.

11. Brief, complete description of the proposal, including the proposed uses and the size of the project and site:

The City of Duvall last conducted a review and update of its SAO in 2005. The SAO regulates land use activities within and adjacent to designated sensitive areas, which include wetlands, fish and wildlife habitat conservation areas, frequently flooded areas, critical aquifer recharge areas, and geologically hazardous areas. The purpose of the SAO is to promote the health, safety, and general welfare of the community and protect valuable elements of the environment. As required by the Growth Management Act (GMA), the City initiated an update of its SAO in early 2017. The updated SAO is based on BAS (per the requirements of WAC 365-195-900), but is tailored to the specific conditions and needs of the City.

The updated SAO is a non-project action that affects activities and developments within sensitive areas and their buffers within City limits. Updates in the SAO include modifications to buffer/setback requirements, incorporation of the recommendations in the City's Watershed Plan (adopted in 2015), updated standards for development within sensitive

areas and their buffers, and other updates based on BAS and the most-recent state and federal agency guidance related to sensitive areas.

12. Location of the proposal, including street address, if any, and section, township, and range; legal description; site plan; vicinity map; and topographical map, if reasonably available:

The City of Duvall (1,594 acres in area) is located in King County, and situated on the east side of the lower Snoqualmie River valley approximately 7 miles northeast of central Redmond and 8.5 miles south of Monroe. Duvall is bordered on the west by the mainstem Snoqualmie River, and State Route 203 (Main Street within Duvall, and the primary corridor into and out of the City) runs from north to south along the eastern edge of the river's floodplain. Duvall lies primarily within Section 13 and Section 24, Township 26N, and Range 6E, as well as Sections 18 and 19, Township 26N, and Range 7E.

B. ENVIRONMENTAL ELEMENTS

Earth

a. General description of the site:

The City of Duvall is situated in the lower Snoqualmie River Watershed, and is bordered on the west by the mainstem of the river. The City generally slopes down to the west from an upland plateau with an approximate elevation of 500 feet to the Snoqualmie River at an approximate elevation of 30 feet.

b. What is the steepest slope on the site (approximate percent slope)?

Slopes vary within the City, but the steepest areas are associated with the mouths of tributary streams to the Snoqualmie River along the northern edge of the City, where laterally and vertically short slopes up to approximately 50 percent occur.

c. What general types of soils are found on the site (for example clay, sand, gravel, peat, muck)? Specify the classification of agricultural soils and note any prime farmland.

In the City of Duvall, east of the Snoqualmie River floodplain, soils are composed primarily of Tokul gravelly loam. In other areas of the City, soils are composed of Nooksack silt loam, 0 to 2 percent slopes, and Puget silty clay loam. The majority of the City is designated as prime farmland.

d. Are there any surface indications or a history of unstable soils in the immediate vicinity? If so, describe.

Geologically hazardous areas within the City include steep slope hazards, landslide and erosion hazards, and seismic hazards (liquefaction-prone areas). Landslide hazard areas, steep slopes, and erosion hazard areas occur predominately along the northern edge of the City. Additional areas within known landslide and/or severe erosion hazards are located in Taylor Park, where stream incision and stream bank erosion along Coe-Clemons Creek have resulted in recent failure on ravine slopes. Seismic hazards are mapped as occurring across the valley bottom of the Snoqualmie River and Cherry Creek, at the western and northern edges of the City, respectively.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate the source of the fill.

The updated SAO is a non-project action that does not involve filling or grading. However, the proposal would regulate and generally limit grading and filling within sensitive areas and associated buffers, including landslide, erosion, and seismic hazard areas.

f. Could erosion occur as a result of clearing, construction, or use?

Erosion control would be addressed on a project-level basis through the City's surface water design requirements, clearing and grading code, and other provisions of the updated SAO.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example buildings or asphalt)?

No new impervious area is proposed. The updated SAO contains development standards for lot coverage and allowed impervious surface coverage. In accordance with the City's adopted Watershed Plan, higher levels of impervious surface coverage are allowed in watershed subbasins designated for urban development, while lower levels of impervious coverage are allowed in subbasins designated for protection/restoration. The updated SAO also encourages the use of low impact development techniques to reduce stormwater runoff.

h. Describe the proposed measures to reduce or control erosion, or other impacts to the earth, if any.

The updated SAO includes provisions to limit clearing, retain existing native vegetation, manage stormwater, and provide erosion and sediment control within sensitive areas and associated buffers. Compared to the existing SAO, the updated SAO includes additional development standards and revised reporting requirements, consistent with BAS, for proposed uses and development within

designated erosion hazard areas. These provisions are implemented on a project-by-project basis.

Air

- a. **What types of emissions to the air would result from the proposal (e.g. dust, automobile, odors, industrial, wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities, if known.**

None.

- b. **Are there any off-site sources of emissions or odors that may affect your proposal? If so, generally describe.**

No.

- c. **Describe proposed measures to reduce or control emissions or other impacts to air, if any.**

None specifically.

Water

- a. **Surface:**

- 1. **Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, and wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

Duvall is located on the shoreline of the Snoqualmie River. Within the City, several small streams drain small subbasins and eventually converge with the river, including Coe-Clemons and Thayer creeks, which flow across the Snoqualmie River floodplain. Lake Rasmussen (5.5 acres), which empties into Cherry Creek, is located north of NE 152nd Street. Numerous wetlands are inventoried within the City, most of which are associated with the Snoqualmie River and tributary streams. Additionally, several depressional wetlands are mapped within the river floodplain at the north end of the City.

- 2. **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

Not applicable. New development within sensitive areas and buffers would be subject to the provisions of the updated

SAO, which includes standards and limitations for in- and over-water structures.

- 3. Estimate the amount of fill and dredge material that could be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill materials.**

No filling or dredging is proposed. Proposed fill and dredge activities within sensitive areas and buffers would be subject to the provisions of the updated SAO, which includes standards and limitations for filling and dredging activities.

- 4. Will the proposal require surface water withdrawals or diversion? Give general description, purpose, and approximate quantities, if known.**

No surface water withdrawals are proposed.

- 5. Does the proposal lie within a 100-year flood plain? If so, note location on the site plan.**

Yes, a portion of the City lies within the 100-year floodplain. The floodplain for Duvall is mapped on Federal Emergency Management Agency (FEMA) flood insurance rate maps (FIRMs).

- 6. Does the proposal involve discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

No discharges of waste materials are proposed. The updated SAO prohibits the direct discharge of pollutants to surface waters.

b. Ground

- 1. Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.**

No groundwater withdrawals or discharges are proposed.

2. **Describe waste material that will be discharged into the ground from septic tanks or other sources, if any. Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) is expected to serve.**

No material will be discharged into the ground. New development within the City is required to connect to sanitary sewer lines. In addition, the updated SAO would regulate and limit the storage and disposal of hazardous materials within critical aquifer recharge areas.

c. **Water Runoff (including storm water)**

1. **Describe the source of runoff (including storm water) and method of collection and disposal, if any (including quantities if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

The proposal will not result in water runoff. Stormwater management facilities proposed within sensitive areas or their buffers would be regulated by the updated SAO. In general, the updated SAO requires that new stormwater facilities be located outside of wetlands, fish and wildlife habitat conservation areas, and geologically hazardous areas.

2. **Could waste materials enter ground or surface waters? If so, generally describe.**

Discharge of waste materials is not proposed. New uses and developments proposed within the City must incorporate all known, available, and reasonable methods of preventing, controlling, and treating stormwater to protect and maintain surface and groundwater quantity and quality in accordance with the City's stormwater comprehensive plan and surface water regulations.

3. **Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.**

The proposal will not alter or otherwise affect drainage patterns. Effects to drainage patterns would be addressed on a project-level basis through the City's surface water regulations.

- d. **Describe proposed measures to reduce or control surface, ground, and runoff water impacts, if any.**

The updated SAO encourages the management of stormwater throughout the City consistent with Duvall's Watershed Plan and existing surface and stormwater regulations. Low impact development techniques are encouraged where possible.

Plants

- a. Types of vegetation found on-site:**
- Deciduous trees:** Red alder, big leaf maple, cottonwood, various willow species, and various ornamental species.
- Evergreen trees:** Douglas fir, western red cedar, Sitka spruce, and various ornamental species.
- Shrubs:** Oregon grape, red elderberry, oceanspray, salmonberry, red osier dogwood, vine maple, trailing blackberry, Himalayan blackberry*, Japanese knotweed*, and various ornamental species.
- Herbs:** Reed canarygrass*, grasses, ferns, and various non-native and weedy species.
- Wet Soil Plants:** Various sedges and rushes, skunk cabbage, common cattail, velvet-grass, bentgrass, willow species, and numerous other species.
- *Problematic invasive species*
- b. What kind and amount of vegetation will be removed or altered?**
- The proposal will not remove or alter vegetation. The updated SAO requires new development to protect native vegetation (See 4.d below). The updated SAO allows vegetation removal within sensitive areas and buffers under limited conditions, such as the removal of hazard trees that pose a threat to public safety. However, unavoidable impacts to native vegetation within buffers must be mitigated for in accordance with the standards in the updated SAO.
- c. List threatened or endangered species or critical habitat known to be on or near the site.**
- There are no known occurrences of threatened or endangered plant species within the City.
- d. Describe proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on-site.**
- The updated SAO encourages the protection and restoration of native vegetation and control of non-native invasive plant species. For new development projects, the updated SAO requires that sensitive areas and their buffers be placed into separate tracts and protected in perpetuity. Unavoidable impacts to vegetation within sensitive areas and their buffers must be mitigated through

enhancement with native plantings and other measures, as applicable.

- e. **List all noxious weeds and invasive species known to be on or near the site.**

Reed canarygrass, Himalayan blackberry, Japanese knotweed, morning glory, tansy ragwort, Robert's geranium, bittersweet nightshade, evergreen blackberry, English ivy, English holly.

Animals

- a. **Underline any birds and animals which have been observed on or near the site or are known to be on or near the site:**

Fish: Steelhead, bull trout, Chinook, chum, coho, pink, sockeye, sucker species, dace species, Redside shiner, stickleback, sculpin species.

Amphibians: American bullfrog has been observed within the City; common species such as Pacific treefrog likely present.

Reptiles: None specifically identified; common species such as northwestern garter snake likely present.

Birds: Bald eagle, waterfowl, great blue heron, and pileated woodpecker, as well as numerous other common bird species.

Mammals: Black-tailed deer, coyote, raccoon, Virginia opossum, eastern gray squirrel, beaver, mountain beaver, rabbit, skunk, occasional use by black bear, as well as numerous other common small mammal species.

- b. **List any threatened or endangered species or critical habitat near the site.**

The Snoqualmie River in the vicinity of the City provides habitat for Chinook salmon (federally listed as threatened), bull trout/Dolly Varden (federally listed as threatened), and winter steelhead trout (federally listed as threatened). The presence of bull trout/Dolly Varden is also recorded within Coe-Clemons Creek.

- c. **Is the site part of a migratory route? If so, explain.**

The Snoqualmie River provides a migratory route for salmon. The City is within the Pacific Flyway, which is a flight corridor for migrating waterfowl and other birds.

- d. **Proposed measures to preserve or enhance wildlife, if any.**

The updated SAO regulations protect wetland habitat and fish and wildlife habitat conservation areas through sensitive area buffer standards; vegetation conservation provisions; limits on filling,

clearing, and grading; and mitigation sequencing. Compared to the existing SAO, the updated SAO contains enhanced protections for designated wildlife corridors, increases the standard buffer width for fish-bearing streams, and provides updated standards for proposed development within habitat areas and their buffers, consistent with BAS.

- e. **List any invasive animal species known to be on or near the site.**

American bullfrog has been observed within the City.

Energy and Natural Resources

- a. **What kinds of energy (electric, natural gas, oil, wood, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.**

Not applicable; adoption of the updated SAO will not require energy consumption.

- b. **Would the project affect the potential use of solar energy by adjacent properties? If so, explain.**

Proposed solar energy facilities within or adjacent to sensitive areas would be subject to the provisions of the updated SAO, similar to existing conditions. Facilities proposed outside of sensitive areas and their buffer would not be affected by the updated SAO.

- c. **What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.**

Not applicable.

Environmental Health

- a. **Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spills, or hazardous waste that could occur as a result of this proposal? If so, describe.**

No.

- 1. **Describe special emergency services that might be required.**

Not applicable.

- 2. **Describe proposed measures to reduce or control environmental health hazards.**

Not applicable.

b. Noise

- 1. What types of noise exist in the area which may affect your project (for example: traffic, equipment operation, other)?**

Not applicable.

- 2. What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)?**

Not applicable.

- 3. Describe proposed measures to reduce or control noise impacts, if any.**

Not applicable.

Land and Shoreline Use

- a. What is the current use of the site and adjacent properties?**

Residential use is the most prevalent form of development within the City, followed by vacant lands and publicly owned open space and park lands. Other significant uses within the City include commercial, office, institutional, and industrial.

- b. Has the site been used for agriculture? If so, describe.**

Much of the eastern Snoqualmie River floodplain was used for agricultural activities though at least the first half of the 1900s; outside of Duvall, these uses continue today. Within the City limits, no areas have been used as working farmlands or forest lands for 20 or more years. No existing working farmlands or forest lands would be converted to other uses as a result of the updated SAO.

- c. Describe any structures on the site.**

Structures throughout the City range in size and type depending on the zoning designation and bulk requirements. Structures are typical of a rural/suburban setting and include low-story residential, recreational, institutional, and commercial structures.

- d. Will any structures be demolished? If so, what?**

No structures will be demolished as a result of adoption of the updated SAO.

- e. What is the current zoning classification of the site?**

Duvall zoning classifications include the following: Commercial, Mixed Use Institutional, Light Industrial, Mixed Use 12, Old Town Mixed Use, Midtown, Riverside Village, Uptown – 1st Avenue, Single-Family Residential – 4 units per acre, Single-Family Residential – 4.5 units per acre, Single-Family Residential – 6 units per acre, Single-Family Residential – 8 units per acre, Multi-Family Residential – 12 units per acre, Multi-Family Residential – 20 units per acre, Public Facilities, and parks and open space. Lower density residential classifications (Residential – 4, 4.5, and 6 units per acre) are the most common types of zoning mapped across Duvall.

f. What is the current comprehensive plan designation of the site?

See above; the City's zoning classifications are also used for designating land use categories in the 2015 Comprehensive Plan.

g. If applicable, what is the current shoreline master program designation of the site?

The current designation for most of Duvall's shoreline area is Conservancy, with the Riverside Village zoning area (existing Depot Village development) designated Urban.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

Environmentally sensitive or critical areas regulated by the City of Duvall include geologically hazardous areas (landslide hazards, erosion hazards, and seismic hazards), wetlands, fish and wildlife habitat conservation areas (primarily streams within the City, as well as Lake Rasmussen), and critical aquifer recharge areas. These sensitive areas are present throughout the City.

i. Approximately how many people would reside or work in the completed project?

Not applicable.

j. Approximately how many people would the completed project displace?

None.

k. Describe proposed measures to avoid or reduce displacement impacts, if any.

Not applicable.

l. Describe proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

The updated SAO has been developed consistent with the City's Comprehensive Plan (2015) and Watershed Plan (2015), along with the GMA requirement to develop sensitive areas regulations based on a review of BAS.

Housing

- a. **Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.**

None. Adoption of the updated SAO would not provide new housing units or modify existing housing stock. Future residential development would be subject to the updated SAO; however, this would not have a significant effect of the quantity of future housing.

- b. **Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.**

None. The updated SAO would not eliminate or modify housing stock.

- c. **Describe proposed measures to reduce or control housing impacts, if any.**

Not applicable.

Aesthetics

- a. **What is the tallest height of any of the proposed structure(s), not including antennas? What is the principal exterior building material(s) proposed?**

No structures are proposed. As under existing conditions, Unified Development Regulations within the Duvall Municipal Code (DMC) Title 14 would regulate the height of structures across the City.

- b. **What views in the immediate vicinity would be altered or obstructed?**

Not applicable.

- c. **Describe proposed measures to reduce aesthetic impacts, if any.**

The updated SAO helps protect wetlands, riparian areas, and other habitats/open space areas, which is expected to have a positive impact on aesthetics.

Light and Glare

- a. **What type of light and glare will the proposal produce? What time of day would it mainly occur?**

The proposal will not produce any light or glare.

- b. Could light or glare from the finished project be a safety hazard or interfere with views?**

Not applicable.

- c. What existing off-site sources of light or glare may affect your proposal?**

Not applicable.

- d. Describe the proposed measures to reduce or control light and glare impacts, if any.**

Light and glare will not be produced as a result of the non-project proposal.

Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity?**

Duvall's parks and open spaces provide recreational opportunities to the public for active uses (shoreline access along the Snoqualmie River), horse / equestrian uses (along the Snoqualmie Valley Trail), picnics and gatherings, playgrounds, sports fields, and boating, as well as passive uses (walking / dog walking, wildlife observation, meditation). The King County-owned and managed Snoqualmie Valley Trail extends along the western edge of the City, linking several City parks and open spaces together, as well as additional facilities to the south of Duvall.

- b. Would the proposed project displace any existing recreational uses? If so, describe.**

No; the updated SAO is a non-project action.

- c. Describe proposed measures to reduce or control impacts on recreation, including recreational opportunities to be provided by the project or applicant.**

Not applicable.

Historic and Cultural Preservation

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.**

Yes. While Duvall does not have its own local registry for identifying historic buildings, in 1997 a Cultural Resources Survey and Inventory was prepared (Sivinski and Drager, 1997) that

identified 100 buildings constructed in Duvall before 1956. Of those 100 buildings, 50 were deemed to be historically or architecturally significant. Included in Duvall's documented historic structures is the Duvall Train Depot, east of the Snoqualmie River. Additionally, the Dougherty Farmstead is documented as a historic property, with the Duvall Historical Society providing guided public tours. The Cherry Valley/Duvall Cemetery (circa 1885) is a recorded historic cemetery about 200 feet from the southwest corner of Dougherty Farmstead, at 26524 NE Cherry Valley Rd.

- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.**

According to the Washington State Department of Archaeology and Historic Preservation's (DAHP's) online database (Washington Information System for Architectural and Archaeological Records Data, or WISAARD), areas around the City range from low to very high risk for encountering cultural resources. Cultural resources surveys conducted to date within the City and Urban Growth Area (UGA) boundaries have not resulted in the discovery of underground cultural resources.

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.**

No impacts to cultural or historic resources are anticipated as a result of adoption of the updated SAO.

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.**

The non-project action will not result in any disturbance to the ground, and has no potential impacts to historic or cultural resources.

Transportation

- a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on-site plans, if any.**

Main Street NE/State Route 203 connects the City of Monroe and US-2 in Snohomish County, through the City of Duvall, to its terminus at the junction with State Route 202 at Fall City. Within the City limits of Duvall, Main Street NE functions as the primary north-south corridor for both local and regional traffic. NE Woodinville-Duvall Road connects the cities of Woodinville and Duvall. This road carries high traffic volumes from Main Street NE westbound through King County to the Woodinville area. NE Virginia Street connects to Main Street NE at the intersection of NE Woodinville-Duvall Road and Main Street NE and is slightly offset from NE Woodinville-Duvall Road.

NE Cherry Valley Road is a collector arterial primarily under King County jurisdiction. NE Cherry Valley Road terminates at Main Street NE in Duvall at a skewed, stop-controlled intersection. A number of collector streets within Duvall serve local transportation needs: NE Stephens Street provides the primary east-west connection between the east side and west sides of Duvall; 275th Avenue NE has developed as the north-south arterial spine in central/eastern Duvall, serving many of the new housing developments in the City; Batten Road NE (284th Avenue NE) serves as the primary eastern connection between NE 150th Street and NE Big Rock Road (the road is primarily under King County jurisdiction within the UGA); and 1st Avenue NE is a collector arterial that terminates at NE Valley Street and NE Kennedy Drive and does not connect through Taylor Park. Additionally, 3rd Avenue NE (268th Avenue NE) is an important north-south connection between NE Cherry Valley Road and NE 143rd Place, and NE 150th Street is part of the NE Stephens Street/Bruett Road corridor that connects Main Street to residential development on the east side of the City and to Cedarcrest High School, and Bruett Road (NE 152nd Street) is the primary east-west connection between Historic Duvall and the eastern side of the City. A number of residential access streets in Duvall serve local needs.

b. Is the site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

Yes. King County Metro serves Duvall, providing bus service from central Duvall to the Cottage Lake Park and Ride and Redmond, Washington (Routes 224 and 232). In addition, the non-profit Snoqualmie Valley Transportation provides service (the Valley Shuttle, which makes approximately nine trips per day) between Duvall and Carnation, Fall City, Snoqualmie, and North Bend.

- c. **How many parking spaces would the completed project have? How many would the project eliminate?**

Not applicable; adoption of the updated SAO would not create or eliminate parking spaces.

- d. **Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe.**

No; the updated SAO does not require new transportation infrastructure improvements.

- e. **Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.**

No; the updated SAO would not use, nor occur within the vicinity of, these alternative forms of transportation.

- f. **How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.**

Adoption of the updated SAO will not affect the number of vehicular trips generated.

- g. **Describe proposed measures to reduce or control transportation impacts, if any.**

Adoption of the updated SAO will not affect transportation, so no measures to reduce impacts are proposed.

Public Services

- a. **Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally explain.**

Adoption of the updated SAO will not increase the need for public services.

- b. **Describe proposed measures to reduce or control direct impacts on public services.**

Not applicable.

Utilities

- a. **Underline utilities currently available at the site:**

Electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other

- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

No new utilities are proposed.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: 
Name (print): Lana Thomas
Title: Planning Director
Date: 9/27/17
Submitted: _____

SUPPLEMENTAL SHEET FOR NON-PROJECT ACTIONS

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

The updated SAO would not directly increase discharges to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise. All development and redevelopment in the City would be subject to the applicable local, state, and federal regulatory requirements, including building code, fire code, and surface water design standards, in addition to the provisions of the updated SAO.

Proposed measures to avoid or reduce such increase are:

Compared to the existing SAO, the updated SAO provides new and revised regulations that are more restrictive of activities that would result in adverse impacts to surface and groundwater. Updated regulations include additional standards to prevent the release of hazardous substances into the ground in designated critical aquifer recharge areas, and wider standard buffers for high-quality wetlands and streams. Additionally, proposed buffer widths and allowed impervious densities follow the recommendations of the City's adopted Watershed Plan (2015), by strengthening protections for watershed subbasins identified as priorities for protection/ restoration, while allowing greater development flexibility for subbasins that are identified as suitable for urban development.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

The updated SAO has been developed, in part, to protect native plant and animal species within sensitive areas and their buffers, in accordance with BAS and local conditions. As development occurs in accordance with the updated SAO, impacts to sensitive area functions will be avoided, minimized, and mitigated. These elements are described above in Section B of this checklist, as well as below.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

All new uses and developments must comply with the applicable regulations for protection of sensitive areas, including designated fish and wildlife habitat conservation areas. These regulations include requiring a habitat assessment for uses and developments that may affect habitats, maintaining a protective buffer of

undisturbed vegetation around designated habitats, and placing habitats in separate tracts to be protected in perpetuity. In general, the updated CAO provides additional protections for fish, wildlife, and their habitats, compared to the existing SAO. New and revised regulations include the adoption of the most-recent Washington State Department of Ecology wetland rating system, wider standard buffers for higher quality wetlands, a wider standard buffer for fish-bearing streams, designation and protection standards for wildlife habitat corridors, and higher mitigation standards for unavoidable impacts that occur in subbasins identified as priorities for protection/restoration in the City's adopted Watershed Plan (2015).

3. How would the proposal be likely to deplete energy or natural resources?

The updated SAO is not expected to result in any probable significant adverse environmental impacts related to the depletion of energy or natural resources.

Proposed measures to protect or conserve energy and natural resources are:

No specific measures are proposed.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

The updated SAO establishes regulations for the protection and conservation of environmentally sensitive areas. As required by WAC 365-195, the updated SAO is based on a review and synthesis of BAS (see Attachment A). Overall, the updated regulations provide for better protection of sensitive areas, and are restrictive of activities that would result in adverse impacts to these resources. In addition, the updated SAO is meant to complement county, state, and federal efforts to protect sensitive area functions and values.

Proposed measures to protect such resources or to avoid or reduce impacts are:

As stated above, the updated SAO consists of regulations to protect and reduce impacts to sensitive areas. Compared to the existing SAO, the updated SAO maintains and strengthens protection standards for sensitive areas.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed land uses within sensitive areas and their buffers would be subject to the updated SAO, similar to existing conditions. Along with a review of BAS, the updated SAO has been developed within the context of the City's Comprehensive Plan (2015) and Watershed Plan (2015). The updated SAO continues to permit uses that are allowed by the underlying zoning, provided they are consistent with the updated SAO's development standards.

Proposed measures to avoid or reduce shoreline and land use impacts:

Once adopted, the updated SAO will increase protections for sensitive areas within the City, consistent with BAS, the City's Comprehensive Plan and Watershed Plan, and the GMA. The updated SAO requires that unavoidable impacts to sensitive areas and their buffers be minimized and mitigated for, to ensure the protection of sensitive area functions and values. As stated above, the updated SAO contains provisions that follow the recommendations of the Watershed Plan, such as limiting impervious surface coverage and requiring additional compensatory mitigation (if unavoidable impacts are proposed) in watershed subbasins identified as priority for protection/restoration. Comparatively, impervious surface limits are higher and mitigation requirements are less stringent in subbasins designated as suitable for urban development.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

The updated SAO does not establish new patterns of land use or increased density of existing land use patterns. Therefore, adoption of the updated SAO is not expected to result in significant changes to, or increased demand for, public services or infrastructure.

Proposed measures to reduce or respond to such demand(s) are:

Since increased demands are not anticipated, no specific measures are proposed.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements of the protection of the environment.

The City's updated SAO was developed to be consistent, and work in conjunction with, other local, state, and federal programs that protect the functions and values of sensitive areas and protect the health and safety of Duvall residents. These programs include, but are not limited to, the following:

City Programs

- **DMC Title 14 – Unified Development Regulations:**
 - **Chapter 14.10 Zoning** – Establishes zoning districts and regulates land use in the City of Duvall. The regulations in the updated SAO apply as an overlay to the existing City zoning regulations.
 - **Chapter 14.40 Tree Protection** – Establishes regulations and standards to preserve, maintain, and protect the visual appearance and natural wooded character of the City of Duvall. The proposed removal of trees within sensitive areas and their buffers are subject to both the updated SAO and the City's tree protection regulations.

- **Chapter 14.60 SEPA** – Establishes procedures and policies to implement SEPA. All non-exempt City actions require environmental review under SEPA.
- **Chapter 14.66 Subdivisions, Short Subdivisions, Boundary Line Adjustments, and Binding Site Plans** – Establishes standards for the creation of new lots within Duvall, including standards to ensure that subdivisions are consistent with City Comprehensive Plan policies and other land development standards. Similar to City zoning regulations, the updated SAO would apply as an overlay to existing subdivision regulations.
- **Chapter 14.84 Floodplain Regulations** – Establishes policies, regulations, and land use controls to promote public health, safety, and general welfare; reduce the annual cost of flood insurance; and minimize public and private losses due to flood conditions in specific areas. The updated SAO states that frequently flooded areas shall be managed according to Chapter 14.84.
- **DMC Title 9, Chapter 9.06 Storm Drainage Utility** – Establishes policies and regulations for the comprehensive management of surface and stormwater for land use proposals and development projects that could have impacts to water quality, erosion, clearing and grading activities, flood hazard zones, or sensitive areas. These regulations would continue to apply within sensitive areas and their buffers.

State and Federal Regulations

A number of state and federal agencies also have jurisdiction over sensitive areas. Local development proposals commonly trigger requirements for state or federal permits when they impact wetlands or streams; potentially affect fish and wildlife listed under the federal Endangered Species Act (ESA); result in over one acre of clearing and grading; or affect the floodplain or floodway. As with local requirements, state and federal regulations apply throughout the City. The updated SAO states that applicants are responsible for complying with the relevant state and federal regulations, and that compliance with the updated SAO does not constitute compliance with other governmental regulations and permit requirements. Relevant state and federal regulations include, but are not limited to, the following:

- **Endangered Species Act** – The federal ESA addresses the protection and recovery of federally listed species and critical habitat. The ESA is jointly administered by the National Oceanic and Atmospheric Administration (NOAA) Fisheries (formerly referred to as the National Marine Fisheries Service), and the United States Fish and Wildlife Service (USFWS).
- **Clean Water Act (CWA)** – The federal CWA requires states to set standards for the protection of water quality for various parameters, and it regulates excavation and dredging in waters of the U.S., including wetlands. Certain

activities affecting wetlands or streams may require a permit from the U.S. Army Corps of Engineers and/or Washington State Department of Ecology under Section 404 and Section 401 of the CWA, respectively.

- **Nation Pollutant Discharge Elimination System (NPDES)** – The federal NPDES program is administered by the U.S. Environmental Protection Agency (EPA), with responsibility passed to the Washington State Department of Ecology, under the authority of the CWA. The NPDES program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Duvall’s municipal stormwater system is permitted under the Phase II Western Washington Municipal Stormwater Permit, and requires that the City maintain minimum technical requirements for new development and redevelopment, provide annual stormwater system reports, and meet other requirements.
- **Hydraulic Project Approval (HPA)** – The Washington Department of Fish and Wildlife (WDFW) regulates activities that use, divert, obstruct, or change the natural flow of the beds or banks of waters of the state and may affect fish habitat. Projects requiring construction below the ordinary high water mark of any stream could require an HPA from WDFW. Projects creating new impervious surface that could substantially increase stormwater runoff to waters of the state may also require approval.

REFERENCES

- City of Duvall. 2015. *City of Duvall 2015 Comprehensive Plan*. Adopted by City Council June 7, 2016, Resolution No. 16-09. Available at URL = <http://www.duvallwa.gov/DocumentCenter/Home/View/2974>.
- ESA (Environmental Science Associates) & Stratum Group. 2017. *Sensitive Areas Ordinance Update—Gap Analysis and Best Available Science Consistency Review*. Technical Memorandum prepared by Aaron Booy and Christina Hersum, ESA, and Dan McShane, Stratum Group. Submitted to Lara Thomas, City of Duvall. May 2, 2017.
- ESA (Environmental Science Associates). 2015. *City of Duvall Watershed Plan*. Prepared for the City of Duvall. Final plan dated August 12, 2015; adopted September 15, 2015. Available at URL = <http://www.duvallwa.gov/DocumentCenter/View/2440>.
- Sivinski, V., and B. Drager. 1997. *Cultural Resources Survey and Inventory for the City of Duvall*. Prepared by Artifacts Consulting and Drager Associates, Tacoma, WA, for the City of Duvall, WA. November 1997.

Attachment A:

City of Duvall SAO Update (DMC 14.42)

Gap Analysis and BAS Consistency Review

DMC 14.14 Multi-family Residential Zone (R12)

DMC 14.16 Multi-family Residential Zone (R20)

DMC 14.18 Mixed Used 12 (MU12)

DMC 14.19 Mixed Use Institutional (MUI)

DMC 14.20 Midtown (MT)

DMC 14.28 Commercial (CO)

DMC 14.30 Light Industrial (LI)

DMC 14.31 Parks and Open Space (PO)

DMC 14.32 Public Facilities (PF)

DMC 14.64 Additional Development Standards

Chapter 14.42 - SENSITIVE AREAS REGULATIONS

Working Draft Update – Draft #3, September 15, 2017 – *all updates completed for this Draft #3 are highlighted in yellow.*

14.42.010 - Purpose.

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

- A. Protect members of the public and public resources and facilities from injury, loss of life, property damage or financial losses due to flooding, erosion, landslides, seismic events, soil subsidence or steep slope failures;
- B. Protect unique, fragile and valuable elements of the environment including fish and wildlife and their habitats;
- C. Mitigate unavoidable impacts on environmentally sensitive areas by regulating alterations in and adjacent to sensitive areas;
- D. Prevent cumulative adverse environmental impacts to sensitive areas;
- E. Protect the public trust as to navigable waters and aquatic resources;
- F. Meet the requirements of the National Flood Insurance Program and maintain Duvall as an eligible community for federal flood insurance benefits;
- G. Alert members of the public including, but not limited to appraisers, owners, potential buyers or lessees to the development limitations of sensitive areas;
- H. Provide city officials with sufficient information to protect sensitive areas;
- I. Implement the policies of the State Environmental Policy Act, Revised Code of Washington (RCW) 43.21C, the Washington State Growth Management Act (GMA), and the Duvall comprehensive land use and utility plans which call for protection of the natural environment and the public health and safety;
- J. Protect wetlands, floodplains, critical aquifer recharge areas, and fish and wildlife habitat conservation areas and their buffers by applying the Best Available Science to ensure no net loss of ecological functions and values; and
- K. Allow for reasonable use of private property in accordance with DMC Section 14.42.070

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.020 - Applicability.

- A. When any provision of any other chapter of this code conflicts with this chapter, that which provides more protection to the sensitive areas shall apply unless specifically provided otherwise in this section; provided, however, that municipal provisions shall not conflict with preemptive controlling state regulations such as the Shoreline Master Program, Chapter 173-26 WAC.
- B. Until the requirements of these sensitive area regulations are fulfilled, the city shall not grant any approval or permission to alter the conditions of any land, water or vegetation, or to construct or alter any structure or improvements for an applicable development, project, or action.
- C. The following are applicable activities of developments, projects, and actions that must comply with all provisions of the sensitive area regulations, unless otherwise exempted by the chapter:
 - 1. Removing, excavating, disturbing or dredging soil, sand, gravel, minerals, organic matter or materials of any kind, clearing, grazing, or creating impervious surface;
 - 2. Dumping, discharging or filling with any material;
 - 3. Constructing, reconstructing, demolishing or altering the size of any structure or infrastructure, subject to the provisions for a nonconforming structure of DMC Chapter 14.83, provided that there is no additional impact on sensitive areas and/or buffer;
 - 4. Any other activity for which a city permit is required including but not limited to the following: Type I permits, building permits and other construction permits; and Types II, III permits, and Type IV permits in accordance with DMC Section 14.08.010(C).
- D. Altering sensitive areas and/or buffers is prohibited except when:
 - 1. Alteration is approved pursuant to the reasonable use provisions of section 14.42.070 of this Chapter or variance provisions of DMC-Section 14-42.070 DMC Chapter 14.70; or
 - 2. Alteration is necessary to accommodate an essential public facility or public utility where no feasible alternative location will accommodate the facility and the facility is located, designed, and constructed to minimize and where possible avoid sensitive area disturbance to the maximum extent feasible, pursuant to section 14.42.070 of this Chapter; or
 - 3. Alteration is part of an essential element of an activity allowed by this title and all feasible measures to avoid and minimize impacts have been employed. Such feasible measures shall include but not be limited to clustering where permitted by zoning and as appropriate to protect sensitive areas and buffers. The purposes of clustering shall be to minimize adverse effects of development on sensitive area functions and values, minimize land clearing, maintain soil stability, preserve native vegetation, maintain hydrology, and mitigate risk to life and property.
- E. Land that is located wholly within a sensitive area or buffer may not be platted for purposes of creating buildable lots. Land that is located partially within a sensitive area or its buffer may be platted provided that each resulting lot has sufficient buildable area outside of the sensitive area or buffer with provision for drainage, erosion control, vegetation maintenance and related features that will not adversely affect the sensitive area or its buffer.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.025 – Relationship to Other Regulations

- A. These sensitive areas regulations shall apply as an overlay and in addition to zoning and other regulations adopted by the City
- B. Where any individual sensitive area and associated buffer overlaps with an area adjoined by another type of sensitive area, the area of overlap shall have the buffer and meet the requirements that provide the most protection to the sensitive areas involved. When any provision of this Chapter or any

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existing regulation, easement, covenant, or deed restriction conflicts with this Chapter, that which provides more protection to the sensitive areas shall apply.

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

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

14.42.030 - Sensitive area review.

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

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

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

- a. Confirm the nature and type of the sensitive areas and associated buffers;
- b. Determine the need for sensitive area studies and the adequacy of any such studies submitted with the application;
- c. Determine whether the development proposal is consistent with these sensitive area regulations;
- d. Determine whether proposed alterations to sensitive areas are necessary;
- e. Determine if the mitigation and monitoring plans and bonding measures proposed by the applicant are sufficient to protect the public health, safety and welfare consistent with the goals, purposes, objectives and requirements of this overlay district.

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

34. 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.

45. 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.

66. 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 jurisdiction's permit. Such requirements shall be a condition of sensitive area approval and enforceable by the city. In the event that there is a conflict between permit requirements and the standards of this chapter, the more restrictive standards shall apply.
 3. The city shall notify the applicant in writing when subsection C of this section applies.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.040 - General exemptions.

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

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

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

Emergency actions that create an impact to a sensitive area or its buffer shall use reasonable methods to address the emergency; in addition, they must have the least possible impact to the sensitive area or its buffer. The person or agency undertaking such action shall notify the director within one working day following commencement of the emergency activity. Within thirty (30) days,

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

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

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

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

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

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

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

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.050 - Allowed activities.

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

- 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. Existing single family residences may be expanded, reconstructed, or replaced, provided all of the following are met:

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- 1. Expansion within a critical area buffer is limited to 500 square feet of footprint beyond the existing footprint.
- 2. The expansion extends no closer to critical area than the existing setback.
- 3. The proposal preserves the functions and values of wetlands, fish and wildlife habitat conservation areas, and their buffers.
- 4. The proposal includes on-site mitigation to offset any impacts.
- 5. The proposal will not significantly affect drainage capabilities, flood potential, and steep slopes and landslide hazards on neighboring properties, and

6. The expansion would not cause a tree within a buffer to be labeled as a hazardous tree and thus require the removal of the hazardous tree.

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

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

2. The removal from sensitive areas and buffers of hazard trees ~~and/or hazard tree limbs through pruning~~ that are posing a threat to public safety, or an imminent risk of damage to a permanent structure, provided that:
 - a. The applicant submits a ~~tree risk assessment~~ report from a certified arborist or professional forester that documents the hazard for any trees ~~that are not already dead or clearly dying and are potentially~~ posing a threat to public safety, or an imminent risk of damage to a permanent structure. ~~The tree risk assessment shall be conducted in accordance with the International Society of Arboriculture Best Management Practices Tree Risk Assessment (2013, or as updated), and provides a replanting schedule for the replacement trees in compliance with the replacement tree requirements of subsection (F)(2)(d) of this section:~~
 - b. ~~Tree cutting shall be limited to pruning and crown thinning wherever such measures would reduce the tree hazard to a risk rating of "low" according to the Tree Risk Assessment, unless otherwise justified by a certified arborist or professional forester. Where pruning or crown thinning is documented as not insufficient to reduce address the hazard to "low", trees may should be removed or converted to wildlife snags;~~
 - c. ~~If native vegetation is cut or removed from a sensitive area or buffer, it shall be left within the sensitive area or buffer where practicable unless removal is warranted due to safety considerations, the presence of an established disease infestation or other hazard, or because of access or maintenance needs if the area is a utility or access right-of-way.~~
 - d. ~~The landowner shall replace any trees that are removed with new trees at a ratio of one six replacement trees for each tree removed (16:1) in accordance DMC Section 14.40.030(D). Coniferous trees shall be preferred over deciduous trees for all replacement trees within sensitive areas and buffers, and shall be required unless a certified arborist or landscape architect determines that replacement with coniferous trees is not appropriate due to site conditions. Replacement trees within sensitive areas and buffers shall be species that are native and indigenous to the site, and shall be a minimum of a five (5) gallon container plant material size. Replacement trees may be planted at a different, nearby location if it can be determined that planting in the same location would create a new hazard or potentially damage the sensitive area. Replacement shall be in accordance with DMC Section 14.40.030(D).~~
 - e. ~~When permitted as an allowed activity consistent with the criteria of this section, removal of hHazard trees or trees that pose an imminent threat to life or property shall be completed may be removed in accordance with DMC Section 14.40.030, Tree protection standards.~~
3. Measures to control a fire or halt the spread of disease or damaging insects consistent with the state Forest Practices Act; Chapter 76.09 RCW, provided that the removed vegetation shall be replaced in-kind or with similar native species within one year in accordance with an approved restoration plan.

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

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.060 - Sensitive area studies.

- A. Required. An applicant for a development proposal that includes, or is adjacent to, sensitive areas or buffers, shall submit such studies as are required by the director to adequately evaluate the proposal and all probable impacts. The study shall be prepared by a qualified professional as defined below and with all associated costs, including independent review, paid for by the applicant.
1. A "qualified professional or qualified consultant" means a person with experience and training with expertise appropriate for the relevant sensitive area subject in accordance with WAC 365-195-905(4). A qualified professional must have obtained a B.S. or B.A. or equivalent degree in biology, soil science, engineering, environmental studies, fisheries, geology, geomorphology or related field, and related work experience and meet the following criteria:
 - a. A qualified professional for wetlands must have a degree in biology, ecology, soil science, botany, or a closely related field and a minimum of five years of professional experience in wetland identification and assessment in the Pacific Northwest.
 - b. A qualified professional for geologically hazardous areas must be a licensed engineering geologist or geotechnical engineer, licensed in the state of Washington.
 - c. A qualified professional for fish and wildlife habitat conservation areas must have a degree in wildlife biology, ecology, fisheries, or closely related field and a minimum of two years professional experience related to the subject species/habitat type.
 - d. A qualified professional for sensitive aquifer recharge areas means a Washington State licensed hydrogeologist, geologist, engineer, or other scientist with a minimum of two years professional experience in preparing hydrogeologic assessments in Washington.
 - e. A qualified professional for trees in sensitive areas means an individual with related training and experience to demonstrate competency in arboriculture or urban forestry with tree retention, protection, and planting expertise and must be certified by the International Society of Arboriculture.

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

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

1. The name and contact information of the applicant, a description of the proposal, and identification of the permit requested;
2. A copy of both the site survey and site plan for the development proposal that shows and labels all on-site sensitive areas and buffers. The site plan showing the development proposal, or a separate clearing and grading plan, shall show all on-site sensitive areas and proposed clearing and grading limits and construction stormwater best management practices (BMPs);
3. The dates, names, and qualifications of the persons preparing the study and documentation of any fieldwork performed on the site;
4. Identification and characterization of all sensitive areas, including wetlands, water bodies, wildlife corridors, landslide and/or erosion hazard areas, and associated buffers adjacent to the proposed project area;
5. A statement specifying the accuracy of the study, and all assumptions made and relied upon;
6. An assessment of the probable cumulative impacts to sensitive areas resulting from development of the site and the proposed development;
7. A description of reasonable efforts made to apply mitigation sequencing pursuant to DMC 14.42.130(B) to avoid, minimize, and mitigate impacts to sensitive areas.

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8. Plans for adequate mitigation, as needed, to offset any impacts, in accordance with DMC 14.42.130 (C) including, but not limited to:
- a. The impacts of any proposed development within or adjacent to a sensitive area or buffer on the critical area, and
 - b. The impacts of any proposed alteration of a sensitive area or buffer on the development proposal, other properties and the environment.
9. A discussion of the performance standards applicable to the sensitive area and proposed activity.
10. Financial guarantees to ensure compliance, as needed for any required mitigation, and
11. Any additional information required for specific sensitive areas within or adjacent to the proposed activity, as specified in this chapter.
- D. Unless otherwise provided, a sensitive area study may be supplemented by or composed in whole or in part, of any reports or studies required by other laws and regulations or previously prepared for and applicable to the development proposal site, as approved by the [director].
- EB. 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.
- EC. 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.
- GE. Independent Review. Based on a review of the information contained in the sensitive area study and the conditions of the development proposal site, the director may require independent review of any such study. This independent review shall be performed by a qualified professional approved by the city and paid for by the applicant. The purpose of such independent review is to assist the city in evaluating the effects on sensitive areas that may be caused by a development proposal and to facilitate the decision making process.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.070 - Reasonable use Exceptions

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

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- A. Public Agency and Utility Exception. If the application of this Chapter would prohibit a development proposal by a public agency or public utility, the agency or utility may apply for an exception pursuant to this section.
1. The public agency and utility exception shall apply to the department and include a sensitive areas study, including mitigation plan, if necessary, and any other related project documents, such as permit applications to other agencies, special studies, and environmental documents prepared pursuant to the State Environmental Policy Act (Chapter 43 21C RCW).
 2. The director may approve alterations to sensitive areas, buffers and sensitive area setbacks by an agency or utility not otherwise allowed by this chapter when the following criteria are met:
 - a. There is no other reasonable alternative to the activity or proposed development with less impact on the sensitive area, and
 - b. The activity or development proposal is designed to avoid, minimize, and mitigate the impact on environmentally sensitive areas consistent with the avoidance and mitigation sequencing requirements in this chapter, and, if applicable,
 - c. The proposed development or activity is of linear nature and is on an existing corridor or connects to public lands, trails, utility corridors, rights-of-way or other public infrastructure, or is required for functional reasons such as gravity flow.
- B. Reasonable Use Exception. A — If the application of the sensitive area regulations would deny all reasonable use of the property; development may be allowed if the development is consistent with the general purposes of the sensitive area regulations, is in the public interest, and a hearing examiner approves a reasonable use permit.
- B. Reasonable-Use Standards—To approve a reasonable use ~~the hearing examiner for~~ the city must find that the proposal is consistent with all of the following criteria:
1. There is no portion of the site not subject to sensitive area regulations where the provisions of the sensitive area regulations would not allow reasonable economic use, without a reasonable use permit, including agricultural use or continuation of legal nonconforming uses;
 2. There is no feasible on-site alternative to the proposed use or activities that will provide reasonable economic use, including location on any contiguous parcel that has been under the ownership or control of the applicant since the effective date of this chapter; other allowed uses; continuation of legal nonconforming uses; reduction in size, change in timing of activities, revision of road and lot layout, and/or related site planning considerations, that would allow a reasonable economic use with less adverse impacts to sensitive areas and associated buffers;
 3. The inability to derive reasonable economic use of the property is not the result of actions by the applicant in segregating or dividing the property and/or creating the condition of lack of use after the effective date of this chapter;
 4. All reasonable methods to avoid or reduce adverse effects on sensitive area functions and values have been employed, including locating activities as far as possible from sensitive areas and design that will result in the minimum alteration of sensitive areas and associated buffers, existing topography, vegetation, fish and wildlife resources, hydrological conditions, and geologic conditions. Where both sensitive areas and buffer areas are located on a parcel, buffer areas shall be disturbed in preference to the sensitive area;
 5. The project includes compensatory mitigation for unavoidable sensitive area and buffer impacts in accordance with the mitigation requirements of this chapter;
 6. The proposed activities will not result in adverse effects on endangered or threatened species as listed by the federal government or the state of Washington, or be inconsistent with an adopted recovery plan;
 7. The proposed activities will not result in damage to nearby public or private property and are not a threat to the health or safety of people on or off the site;

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

C. All applications for sensitive areas reasonable-use exceptions 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 – Residential Density and impervious surface coverage calculations credits.

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- A. Sensitive areas and their buffers may be used in the calculation of allowed residential density.
- AB. The city recognizes that full density as allowed by underlying zoning and minimum residential densities established by DMC Title 14 may not be attained on specific parcels where sensitive areas impose inherent limitations on development intensity. The following standards for determining residential site density shall supersede the calculation criteria within DMC 14.64.040 (Calculations – Gross usable area, residential).

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

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

- 1. Fractions of .50 or above shall be rounded up, and
- 2. Fractions of .49 or below shall be rounded down.

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

$20,000 \text{ SF} \times (6 \text{ units} / 43,560 \text{ SF}) = 2.75$, rounded up to 3 dwelling units.

- C. The calculation of net usable area for residential developments shall be made consistent with the subbasin management group within which the residential development is proposed, as provided

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within Table XX of this section. Subbasin management groups are established by DMC Chapter 14.XX (Watershed Management).

D. The city recognizes that full site impervious surface coverage for non-residential sites as otherwise allowed by DMC Title 14 cannot be attained on specific parcels where sensitive areas impose inherent limitations on developable area. For non-residential zoning districts, the maximum amount of impervious surface coverage shall be computed using the net usable area of a site as determined consistent with Table XX of this section. Subtraction of right-of-ways for residential binding site plans (as currently allowed in the code) shall also be allowed when calculating net usable area for impervious surface coverage.

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E. For purposes of this section, net usable area shall be determined using the standard buffer widths for sensitive areas (wetlands, streams, and landslide hazard areas) as provided in DMC 14.42.210, 14.42.320, and 14.42.430. Standard buffer widths shall not include any allowances for buffer averaging or buffer reduction provided in these sections of the code.

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Table XX. Calculations of Net Usable Area: Applicable to Determination of Density for Residential Development Sites, and Maximum Impervious Surface Coverage for Non-Residential Development Sites [ENTIRELY NEW TABLE]

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Subbasin Management Group	Calculation Method <i>Notes: Wetlands, streams, landslide hazard areas, and frequently flooded areas are the sensitive areas to be included in the area calculations. Only on-site areas are to be included.</i>
Group 3 (Urban Development)	Net Usable Area = Gross Site Area – (Sensitive Areas + 50% of Buffers)
Group 2C (Least Conservation)	Net Usable Area = Gross Site Area – (Sensitive Areas + Buffers)
Group 2B (Moderate Conservation)	Net Usable Area = Gross Site Area – (Sensitive Areas + 110% of Buffers)
Group 2A (Highest Conservation); Group 3 (Protect/Restore)	Net Usable Area = Gross Site Area – (Sensitive Areas + 125% of Buffers)

(Ord. 1056 § 1 Exh. A (part), 2007)

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

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

1. State the general presence of the sensitive area and/or buffer area on the property, and identify that there are limitations and restrictions on uses and actions in or affecting the sensitive area and/or buffer imposed by this code and by specific conditions of approval. The notice shall indicate that the restrictions run with the land and may be altered only in conjunction with

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amendment of this chapter or amendment of specific conditions of approval as provided by this chapter.

2. Provide specific responsibility for management of the sensitive area including, but not limited to, maintenance or replacement of vegetation to assure the long-term viability of a community of native vegetation, and invasive plant control.
3. Provide for the right of the public, and specifically the city of Duvall, to enforce the terms of the restrictions through civil infraction or other legal address.
4. If a site plan has been approved indicating the extent of the sensitive area and buffer and permit conditions, a copy of the site plan together with relevant survey information and permit conditions shall be included in the notice filed.

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

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

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

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

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.

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

(Ord. 1056 § 1 Exh. A (part), 2007)

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

- A. **Temporary Marking.** Prior to commencing construction activities on a development site, the applicant shall mark, as required by the director, sensitive areas in a highly visible manner, such as through the use of construction fencing. The marking is subject to inspection by the Director prior to the commencement of permitted activities. These areas must remain so marked until all development proposal activities on the site are completed.
- B. Silt fences and other temporary erosion and sediment control measures shall be installed and maintained on the site as determined to be necessary by the director and the public works director.
- C. **Survey Markers.** Permanent survey stakes using iron or cement markers as established by current survey standards shall be set delineating the boundary between adjoining property and the sensitive area tracts.
- D. **Permanent Signs.** The boundary between a sensitive area tract and adjacent land shall be identified using a permanent signs ~~in a design as approved by the city.~~
1. Permanent signs shall be made of an enamel-coated metal face and attached to a metal post or another non-treated material of equal durability. Signs must be posted at an interval of one (1) every fifty (50) feet, or one (1) per lot if the lot is less than fifty (50) feet wide, and must be maintained by the property owner in perpetuity. The signs shall be worded with language approved by the Director
 2. The provisions of this Subsection (1) may be modified as necessary to assure protection of sensitive features or wildlife.
 3. The homeowner's association and/or the owner of the adjacent developed property adjoining the sensitive areas tract shall be responsible for maintain.
- E. **Permanent Fencing.** If fencing is required, it shall be designed so that it does not interfere with species migration, including fish runs, and constructed so that it minimizes impacts to wetland buffers and associated habitat. The boundary between a sensitive area and adjacent rights-of-way/property shall be delineated with a peeler pole fence as set out in Figure 14.34.30 located in DMC Section 14.34.060; except that when a buffer is reduced in accordance with this chapter, a higher fence providing more of a barricade may be required by the director. ~~The homeowner's association and/or the owner of the adjacent developed property adjoining the sensitive areas tract shall be responsible for maintaining permanent fencing.~~

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.120 - Building setbacks.

- A. Buildings and other structures shall be set back a distance of ten (10) feet from the edges of all sensitive area buffers.
- B. The director may modify the building setback required for sensitive area buffers based on specific development plans that do not disturb sensitive areas.
- C. The following uses are allowed in the building setbacks required for sensitive area buffers:
1. Native landscaping, including retaining walls less than thirty (30) inches high provided construction of the retaining wall does not alter the buffer or sensitive area;
 2. Uncovered decks;
 3. Building overhangs not exceeding two feet;
 4. Impervious surfaces such as driveways, parking lots, roads, and patios provided that such surfaces conform to the applicable water quality standards and that construction equipment does not enter the buffer or sensitive area;

- 5. Clearing and grading not exceeding thirty (30) inches of cut or fill (predevelopment elevation) to facilitate the construction of subsections (C)(1) through (C)(4) of this section.
- D. Unless specified otherwise in the sensitive areas regulations, no building shall be setback less than ten (10) feet from the edge of the sensitive area.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.130 - Mitigation.

- A. Mitigation measures shall be implemented to protect sensitive areas and buffers from alterations occurring on all or portions of a site being developed. The mitigation measures required in subsections B through E of this section shall be implemented in conjunction with other applicable mitigation requirements outlined in the subsequent sections of this chapter.
- B. For purposes of this chapter, mitigation means the use of the following actions that are listed in descending order of preference:
 - 1. Avoiding the impact all together by not taking a certain action or parts of an action;
 - 2. Minimizing impact by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impact;
 - 3. Rectifying the impact by repairing, rehabilitating or restoring the sensitive areas;
 - 4. Reducing or eliminating the impact over time by prevention and maintenance operations;
 - 5. Compensating for the impact by replacing, enhancing or providing substitute areas and environments and replace the ecological processes and functions of the resource;
 - 6. Monitoring the impact and taking appropriate corrective measures.
- C. Mitigation Plan. A mitigation plan shall be required for the design, implementation, maintenance and monitoring of mitigation. A plan shall provide the following, in addition to criteria for the specific sensitive areas provided below:
 - 1. A description and evaluation of any sensitive areas that could be altered by the proposed development, including evaluation of ecological processes and functions based on best available science and detailed field assessment of the affected resources.
 - 2. A description and scaled drawings of the proposed mitigation activities including, but not limited to, clearing, grading/excavation, drainage alterations, planting, invasive plant management, installation of habitat structures, irrigation, and other site treatments.
 - 3. A description of the ecological functions and values that the proposed alteration may affect and of the specific ecological functions and values the proposed mitigation area(s) shall provide.
 - 4. A description of required or recommended mitigation ratios and an assessment of factors that may affect the success of the mitigation program.
 - 5. Specific measurable performance standards that the proposed mitigation action(s) shall achieve together with a description of how the mitigation action(s) will be evaluated and monitored to determine if the performance standards are being met.
 - 6. A description of potential courses of action, and any corrective measures to be taken if monitoring or evaluation indicates that project performance standards are not being met.
 - 7. Cost estimates for the installation of the mitigation program, monitoring, and maintenance if project performance standards are not being met.
- D. A performance assurance shall be provided to guarantee installation, [performance, maintenance and monitoring](#) and [performance](#) of mitigation actions.

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1. ~~Sensitive areas mitigation shall be completed and verified by the city prior to final building inspection. In the event that weather or seasonal conditions do not allow for completion of the mitigation, and at the planning director's discretion, the applicant shall be required to bond for such improvements in an amount equal to one hundred fifty (150) percent of estimated cost of the uncompleted actions or the estimated cost of restoring the functions and values of the sensitive area, whichever is greater. The applicant shall post a mitigation surety in the amount of one hundred twenty-five (125) percent of the estimated cost of the uncompleted actions or the estimated cost of restoring the functions and values of the sensitive area that are at risk, whichever is greater. The surety shall be based on an itemized cost estimate of the mitigation activity including clearing and grading, plant materials, plant installation, irrigation, weed management, monitoring, adaptive management, and other costs.~~
 2. ~~Performance Bond. The City shall require the applicant to bond for required sensitive areas mitigation in an amount equal to one hundred fifty (150) percent of estimated cost of labor and materials. The performance bond shall be held by the City for one full year after completion to ensure the mitigation performs as designed. Upon acceptance of mitigation performance after one full year, a maintenance and monitoring bond shall be required prior to the performance bond being released.~~
 3. ~~Maintenance and Monitoring Bond. A bond in an amount equal to one hundred (100) percent of the cost of the mitigation (labor and materials) and one hundred (100) percent of the cost of monitoring and maintenance throughout the remaining monitoring and maintenance period shall be required to be submitted and accepted by the City prior to release of the mitigation performance bond.~~
 24. ~~The surety~~All sureties shall be in the form of an assignment of funds or other means approved by the director.
 35. 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.~~
 56. Depletion, failure, or collection of surety funds shall not discharge the obligation of an applicant or violator to complete required mitigation, maintenance, or monitoring.
 67. 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.

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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 Duval.~~

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.140 - Enforcement.

- A. ~~When a critical area or its buffer has been altered in violation of this Title, all ongoing development work shall stop and the critical area shall be restored. The City shall have the authority to issue a stop work order to cease all ongoing development work, and order restoration, rehabilitation, or replacement measures at the owner's or other responsible party's expense to compensate for violation of provisions of this Title.~~
- B. ~~Requirement for Restoration Plan. All development work shall remain stopped until a restoration plan is prepared and approved by City. Such a plan shall be prepared by a qualified professional using the best available science and shall describe how the actions proposed meet the minimum requirements described in Subsection (C). The [director] shall, at the violator's expense, seek expert advice in determining the adequacy of the plan. Inadequate plans shall be returned to the applicant or violator for revision and resubmittal.~~
- C. ~~Minimum Performance Standards for Restoration~~
 1. ~~For alterations to critical aquifer recharge areas, frequently flooded areas, wetlands, and habitat conservation areas, the following minimum performance standards shall be met for the restoration of a critical area, provided that if the violator can demonstrate that greater functional and habitat values can be obtained, these standards may be modified.~~
 - a. ~~The historic structural and functional values shall be restored, including water quality and habitat functions.~~
 - b. ~~The historic soil types and configuration shall be replicated.~~
 - c. ~~The critical area and buffers shall be replanted with native vegetation that replicates the vegetation historically found on the site in species types, sizes, and densities. The historic functions and values should be replicated at the location of the alteration, and~~
 - d. ~~Information demonstrating compliance with the requirements in Section X (Mitigation Plan Requirements) shall be submitted to the [director].~~
 2. ~~For alterations to flood and geological hazards, the following minimum performance standards shall be met for the restoration of a critical area, provided that, if the violator can demonstrate that greater safety can be obtained, these standards may be modified.~~
 - a. ~~The hazard shall be reduced to a level equal to, or less than, the pre-development hazard.~~
 - b. ~~Any risk of personal injury resulting from the alteration shall be eliminated or minimized, and~~

c. The hazard area and buffers shall be replanted with native vegetation sufficient to minimize the hazard.

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

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

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

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

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.150 - Administrative rules.

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

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.200 - Wetlands—Designation, rating and mapping.

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

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- B. Wetlands shall be ~~designated in accordance with the approved federal wetland delineation manual and applicable regional supplements as set forth in WAC 173-22-035. Wetland delineations are valid for five years; after such date the City shall determine whether a revision or additional assessment is necessary, identified in accordance with the requirements of RCW 36-70A-175. Unless otherwise provided for in this chapter, all areas within the city meeting the criteria in the Washington State Wetlands Identification and Delineation Manual (Ecology Publication 96-04) or the US Army Corps of Engineers Wetlands Delineation Manual, 1987 Edition and corresponding guidance letters; regardless of any formal identification, are designated sensitive areas and are subject to the provisions of this chapter.~~
- C. The approximate location and extent of known or suspected wetlands are shown on the city's sensitive area maps. Other, unmapped wetlands may exist within the city. These maps are to be used as a guide and do not provide a definitive sensitive area designation.
- D. ~~Wetlands shall be rated according to the Washington State Department of Ecology wetland rating system found in the 2014 Washington State Wetland Rating System for Western Washington (Ecology Publication No. 14-06-029, or as revised and approved by Ecology). Wetlands shall be rated based on categories that reflect the functions and values of each wetland, with categories based on the criteria provided in the 2014 Washington State Wetland Rating System for Western Washington, as follows:~~

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

1. ~~Category I Wetlands. Category I wetlands are those wetlands of exceptional value in terms of protecting water quality, storing flood and stormwater, and/or providing habitat for wildlife as indicated by a rating system score of twenty three (23) ~~seventy (70)~~ points or more. These are wetland communities of infrequent occurrence that often provide documented habitat for sensitive, threatened or endangered species, and/or have other attributes that are very difficult or impossible to replace if altered.~~
2. ~~Category II Wetlands. Category II wetlands have significant value based on their function as indicated by a rating system score of twenty (20) to twenty-two (22) ~~between fifty-one (51) and sixty-nine (69)~~ points. They do not meet the criteria for Category I rating but occur infrequently and have qualities that are difficult to replace if altered.~~
3. ~~Category III Wetlands. Category III wetlands have important resource value as indicated by a rating system score of between sixteen (16) and nineteen (19) ~~thirty (30) and fifty (50)~~ points.~~
4. ~~Category IV Wetlands. Category IV wetlands are wetlands of limited resource value as indicated by a rating system score of less than sixteen (16) ~~thirty (30)~~ points. They typically have vegetation of similar age and class, lack special habitat features, and/or are isolated or disconnected from other aquatic systems or high quality upland habitats.~~

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.210 - Wetland buffer standards.

- A. Wetland Buffer Widths. The director shall have the authority to require buffers from the edges of all wetlands in accordance with the following:
1. Wetland buffers shall be established to protect the integrity, functions and values of the wetland. Wetland buffers shall be measured perpendicular to the wetland edge on all sides as marked in the field. Buffers shall not include areas that are functionally and effectively disconnected from the wetland by a road or other substantially developed surface of sufficient width and with use

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characteristics such that buffer functions are not provided. The Western Washington GMHB excluded roads as functionally isolating buffers as a general case, without findings that they truly interrupt buffer functions, in *ICCGMC v. Island County* 98-2-0023 (Final Decision and Order, 6-2-99)E.

2. The buffer standards required by this chapter presume the existence of a dense vegetation community in the buffer adequate to protect the wetland functions and values. When a buffer is unvegetated, sparsely vegetated, or vegetated predominantly with invasive species that do not perform needed functions lacks adequate vegetation, the director may require buffer planting or enhancement, and/or deny a proposal for buffer reduction or buffer averaging.
3. Wetland buffers identified in Table 1 are based on the category of wetland and the habitat score as determined by a qualified wetland professional using the 2014 Washington State Wetland Rating System for Western Washington (Ecology Publication No. 14-06-029). Wetland buffers have been established in accordance with the best available science. Most wetlands in Duvall are expected to have moderate to low habitat function and buffers shall be sufficient to protect habitat functions. The standard buffer width for Category I, II and III wetlands determined to have low to moderate habitat function scores shall be determined on a graduated scale based the table below. The applicant shall determine the habitat functions score using the 2004 Department of Ecology Washington State Wetland Rating System for Western Washington habitat functions worksheet (Ecology Publication #04-06-025):

Duvall Standard Wetland Buffer Widths Using a Graduated Scale Based on the Habitat Functions Score

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'	160'

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

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

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Category III (all)	60 ft	105 ft	165 ft	225 ft
Category IV (all)	4050 ft	4050 ft	4050 ft	4050 ft

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

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

Disturbance	Required Measures to Minimize Impacts
Lights	<ul style="list-style-type: none"> Direct lights away from wetland
Noise	<ul style="list-style-type: none"> Locate activity that generates noise away from wetland If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source Immediately adjacent to the out wetland buffer
Toxic runoff	<ul style="list-style-type: none"> Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered Establish covenants limiting use of pesticides within 150 feet of wetlands Apply integrated pest management
Stormwater runoff	<ul style="list-style-type: none"> Retrofit stormwater detention and treatment for roads and existing adjacent development Prevent channelized flow from lawns that directly enters the buffer Use Low Impact Development techniques (per PSAT publication on LID techniques)
Change in water regime	<ul style="list-style-type: none"> Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns
Pets and human disturbance	<ul style="list-style-type: none"> Use privacy fencing OR plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion Place wetland and its buffer in a separate tract or protect with a conservation easement
Dust	<ul style="list-style-type: none"> Use best management practices to control dust
Disruption of corridors or connections	<ul style="list-style-type: none"> Maintain connections to offsite areas that are undisturbed Restore corridors or connections to offsite habitats by replanting

- 65. Wetlands within twenty-five (25) feet of slopes at an inclination of forty (40) percent or more with a vertical elevation change of at least ten (10) feet, shall have the following minimum buffers:
 - a. The greater of the minimum for that wetland class, landslide hazard area, or twenty-five (25) feet beyond the top, toe and along the side of the slope.
 - b. The development review committee (DRC) may recommend buffer averaging instances where it will provide additional resource protection provided that the total area on-site contained in buffers remains the same.

B. Wetland Buffer Reduction. ~~Outright reduction of wetland buffer widths shall not be allowed within shoreline jurisdiction. Outside of shoreline jurisdiction, the director shall have the authority to reduce the standard buffer widths within Management Groups 2B, 2C, and 3 subbasins only, excluding the buffer of depressional wetlands, 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.

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

- 2. ~~The buffer of a Category I or II wetland can be reduced by twenty-five (25) percent of the standard buffer if criteria in subsection B of this section are met. Buffer reduction shall only be allowed when opportunity for wetland buffer averaging as provided in subsection C of section is determined unfeasible due to site constraints. The buffer of any wetland can be reduced by no more than the maximum allowances for subbasin management groups as detailed here:~~

	Subbasin Management Group		
	1 - Protect / Restore	2 (A, B, and C)	3 - Urban Development
Maximum reduction allowed for Category I and II wetlands	No reduction		
Maximum reduction allowed for Category III and IV wetlands	No reduction	15%	25%

- 3. ~~The buffer of a Category III or IV wetland shall not be reduced to less than fifty (50) percent of the standard buffer. Buffer reduction shall only be allowed when opportunity for wetland buffer averaging as provided in subsection C of section is determined unfeasible due to site constraints. In the limited instances where buffer reduction is approved, the director shall require enhancement throughout all remaining buffer and wetland areas on the development site consistent with all applicable mitigation requirements of this Chapter. In all instances, required enhancement shall meet a minimum enhancement area to reduced area ratio of three to one (3:1), even if achieving this enhancement ratio results in off-site enhancement within a location approved by the City.~~

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4. In the limited instances where buffer reduction is approved, the director shall require enhancement throughout all remaining buffer and wetland areas on the development site consistent with all applicable mitigation requirements of this Chapter. In all instances, required enhancement shall meet a minimum enhancement area to reduced area ratio of three to one (3:1), even if achieving this enhancement ratio results in off-site enhancement within a location approved by the City.

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

- a. During site construction:
 - i. Install and maintain adequate erosion and sediment control devices to prevent water quality impacts.
 - ii. Mitigate the noise impacts associated with equipment use during sensitive nesting or breeding times as needed to minimize impacts on wildlife in the immediate vicinity of the site.
 - iii. Install orange construction fencing around all sensitive areas that are not proposed to be disturbed to prevent inadvertent damage; and
 - iv. Providing temporary stormwater detention and treatment.
- b. The development shall be designed and operated so that the following measures are met:
 - i. Lights shall be directed away from the wetland and buffer.
 - ii. Facilities that generate substantial noise (such as some manufacturing, industrial, recreational facilities, loading docks, garbage pickup areas) shall be located away from the wetland and buffer.
 - iii. Vegetation maintenance plans and integrated pest management plans shall be established that include covenants or other enforcement mechanisms that limit use of fertilizers and pesticides within the wetland buffer width.
 - iv. Runoff into the buffer shall be infiltrated or treated, detained and dispersed into the buffer.
 - v. Fencing around the buffer shall be constructed to delineate the buffer edge and signs shall be posted at the outer edge of the sensitive area or buffer to clearly indicate the location of the sensitive area.
 - vi. The buffer shall be planted with native vegetation appropriate for the region and
 - vii. Low impact development techniques shall be used where appropriate.

C. Standards—Wetland Buffer Averaging. The director has the authority to average wetland buffer widths within Management Groups 2B, 2C, and 3 subbasins only, excluding the buffer of depressional wetlands, 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 buffer of any wetland can be averaged by no more than the maximum allowances for subbasin management groups as detailed here:

	Subbasin Management Group		
	1 - Protect / Restore	2 (A, B, and C)	3 - Urban Development

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Maximum reduction allowed for Category I and II wetlands.	No averaging	10%	25%
Maximum reduction allowed for Category III and IV wetlands.	No averaging	15%	25%

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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.

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

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

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

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

(Ord. 1056 § 1 Exh. A (part), 2007)

Table 3. Subbasin Management Group – Buffer Reduction and Averaging Standards [ENTIRE TABLE IS NEW]	Subbasin Management Group				
	1-Protect	2A—Highest	2B-Moderate	2C-Least	3—Urban

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	/Restore	Conservation	Conservation	Conservation	Development
Wetland buffer reduction (DMC 14.42.210.B)— maximum reduction allowed for Category I and II wetlands			No-reduction No-reduction 10% 15% 25%		
Wetland buffer reduction (DMC 14.42.210.B)— maximum reduction allowed for Category III and IV wetlands	No reduction	10% <u>No reduction</u>	15%	20%	25%
Wetland buffer averaging (DMC 14.42.210.C)— maximum reduction allowed for Category I and II wetlands-	No averaging	No-averaging	10%	15%	25%
Wetland buffer averaging (DMC 14.42.210.C)— maximum reduction allowed for Category III and IV wetlands	No averaging	10%	15%	20%	25%

14.42.220 - Wetland alterations.

Wetlands and associated buffer areas generally shall be preserved in a state that provides for a native vegetation community providing a range of ecological processes and functions. Wetlands and their buffers generally may not be altered except for the specific allowed uses enumerated below or for restoration or enhancement of impaired functions. Whenever wetland and/or wetland buffer alteration is proposed, mitigation for wetland impacts shall occur within a Group 1 or Group 2 (A, B, or C) subbasin identified by Chapter 14 XX (Watershed Management). If occurring within a Group 2 subbasin, mitigation actions should be consistent with opportunities identified in the 2015 Watershed Plan. The applicant shall prepare a mitigation plan and follow the mitigation sequencing requirements of DMC 14.42.130(B). Compensatory mitigation shall be provided for all adverse impacts to wetlands that cannot be avoided, and the amount and degree of alteration shall be limited to the minimum needed to accomplish the project purpose. Altered wetlands and buffers shall be restored to a natural state wherever feasible. Alterations shall adhere to applicable city, state, and federal requirements and permitting including, but not limited to, US Army Corps of Engineers and the Department of Ecology. The following activities may be permitted in wetlands and/or wetland buffers when all reasonable measures have been taken to avoid adverse effects on wetland functions and values and the requirements of this section have been fulfilled:

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

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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. In addition, wetland alteration is only allowed when consistent with applicability of subbasin management groups as detailed here.

	Subbasin Management Group		
	1-Protect /Restore	2 (A, B, and C)	3 – Urban Development
Where allowance applies:	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable per mitigation requirements of DMC 14.42.240

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. Utility lines and shall be designed and constructed to minimize physical, hydrologic and ecological impacts to the wetland, and meets all of the following:

1. The utility line is located as far from the wetland edge as possible and in a manner that minimizes disturbance of soils and vegetation.
2. Wetland alteration is only allowed when consistent with applicability of subbasin management groups as detailed here.

	Subbasin Management Group		
	1-Protect /Restore	2 (A, B, and C)	3 – Urban Development
Where allowance applies:	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable per mitigation requirements of DMC 14.42.240

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

43. 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. Roadway and bridge crossings impacting wetlands and associated buffers shall be narrowed to minimize ecological impacts, including through eliminated and/or reduced landscape strips and on-street parking requirements. In addition, wetland alteration is only allowed when consistent with applicability of subbasin management groups as detailed here.

	Subbasin Management Group		
	1-Protect /Restore	2 (A, B, and C)	3 – Urban Development
Where allowance applies:	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable per mitigation requirements of DMC 14.42.240

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- E. Access to private development sites may be permitted to cross Category II, III, 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. In addition, wetland alteration is only allowed when consistent with applicability of subbasin management groups as detailed here.

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	Subbasin Management Group		
	1 - Protect / Restore	2 (A, B, and C)	3 – Urban Development
Where allowance applies	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable per mitigation requirements of DMC 14.42.240

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

1. The wetland is classified as a Category IV or Category III with a habitat score of 3-4 points and.
2. The proposed facility is located in the outer portion (percent) of the buffer consistent with applicability of subbasin management groups as detailed here.

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	Subbasin Management Group		
	1 - Protect / Restore	2 (A, B, and C)	3 – Urban Development
Where allowance applies	Not applicable	20%	40%

Table 4 (Subbasin Management Group Alteration Standards): 3 Construction of the stormwater facility does not displace or impact a forested buffer community; and

4. There is no other feasible location for the stormwater facility and the facility is located, constructed, mitigated, and maintained in a manner that minimizes adverse effects on the buffer and adjacent sensitive areas wetland; and
 5. The wetland does not contain a breeding population of any native amphibian species, and
 6. The wetland lies in the natural routing of runoff directed to the stormwater management facility, discharge follows the natural routing, and discharge volumes are demonstrated to not result in adverse impacts to wetland hydrologic functions, and
 7. All regulations regarding stormwater and wetland management are followed, including provisions of the King County Surface Water Design Manual as adopted by DMC 9.06.030, and
- 3The stormwater facility is designed in accordance with city stormwater requirements and generally resembles natural wetlands. The facility shall not contain access roadways or retaining walls or slopes in excess of a 3:1 within the buffer and the discharge must meet water quality standards;
48. Low impact development approaches have been considered and implemented to the maximum extent feasible.

G. Stormwater conveyance or discharge facilities such as dispersion trenches, level spreaders, and outfalls may be permitted within a Category II, III, or IV wetland buffers when all the following are met:

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1. The proposed facility is located in the outer portion (percent) of the buffer consistent with applicability of subbasin management groups as detailed here:

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	Subbasin Management Group		
	1-Protect /Restore	2 (A, B, and C)	3 – Urban Development
Where allowance applies:	Not applicable	20%	40%

(Subbasin Management Group Alteration Standards) when all the following are met:

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

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

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

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

1. The proposed facility is located in the outer portion (percent) of the buffer consistent with applicability of subbasin management groups as detailed here:

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	Subbasin Management Group		
	1-Protect /Restore	2 (A, B, and C)	3 – Urban Development
Where allowance applies:	Consistent with the SMP.	20%	40%

12. Trails shall not exceed four feet in width and shall be made of pervious material where feasible.

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

34. The trails and other passive recreation facilities shall be constructed and maintained in manner that minimizes disturbance of the buffer and associated sensitive areas.

I. Category IV Wetlands Less Than 1,000 Square Feet. The director will allow alteration or displacement of isolated Category IV wetlands less than two one thousand (21,000) square feet when all of the following criteria are met as documented in a wetland sensitive area study and mitigation plan:

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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;

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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);

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43. Wetland alteration is only allowed when consistent with applicability of subbasin management groups as detailed here.

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	Subbasin Management Group		
	1-Protect /Restore	2 (A, B, and C)	3 – Urban Development
Where allowance applies	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable per mitigation requirements of DMC 14.42.240

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- 4. The wetland does not provide significant wildlife water quality, or water storage functions that would be difficult to replicate;
- 5. The wetland is not part of a wetland mosaic;
- 6. The wetland does not score 5 or more points for habitat function based on the Washington State Wetland Rating System for Western Washington, 2014 Update (Ecology Publication # 14-06-029, or as revised and approved by Ecology);
- 7. The wetland does not contain a Priority Habitat or a Priority Area for a Priority Species identified by the Washington Department of Fish and Wildlife, does not contain federally listed species or their critical habitat, and;
- 85. 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.

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J. Category IV Wetlands Less Than 4,000 Square Feet. Activities and uses that result in unavoidable impacts may be permitted in Category IV wetlands less than 4,000 square feet in size and associated buffers in accordance with an approved sensitive area report study and mitigation plan. In addition, wetland alteration is only allowed when consistent with applicability of subbasin management groups as detailed here.

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	Subbasin Management Group		
	1-Protect /Restore	2 (A, B, and C)	3 – Urban Development
Where allowance applies	Not applicable	Applicable only with 50% additional mitigation per DMC 14.42.240	Applicable per mitigation requirements of DMC 14.42.240

and only after All impact avoidance and minimization measures have beenhave to be evaluated consistent with DMC Section 14.42.130(C) and the applicant demonstrates that the proposed activity is the only reasonable alternative that will accomplish the applicant's objectives consistent with the sensitive area regulations and meet the criteria in subsections (1)(1) through (1)(84) of this section. Full compensation for the acreage and loss of functions for the wetland and the buffers shall be provided under the requirements established in DMC Section 14.42.240. Alterations shall adhere to applicable city, state, and federal requirements and permitting including, but not limited to, US Army Corps of Engineers and the Department of Ecology.

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

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

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- 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)

Table 4. Subbasin Management Group Alteration Standards [following table is all new] Wetland alteration allowances per DMC 14.42.220	Subbasin Management Group				
	1 – Protect/Restore	2A – Highest Conservation	2B – Moderate Conservation	2C – Least Conservation	3 – Urban Development
Surface water discharge into Category II, III, and IV wetlands and their buffers (DMC-14.42.220.B) – where allowance applies	Not applicable	Applicable only with 50% additional mitigation per DMC 14.42.240	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable	Applicable
Utility lines in Category II, III, IV wetlands and their buffers (DMC-14.42.220.C) – where allowance applies	Not applicable	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable only with 10% additional mitigation per DMC 14.42.240	Applicable
Public roads, bridges, and trails in Category II, III, and IV wetlands and their buffers (DMC-14.42.220.D) – where allowance applies	Not applicable	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable only with 10% additional mitigation per DMC 14.42.240	Applicable
Utility lines, public roads, bridges, and trails in Category I wetlands where allowed (DMC-14.42.220.C and D) – where allowance applies	Not applicable	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable only with 10% additional mitigation per DMC 14.42.240	Applicable
Private development access in Category II, III, or IV wetlands or their buffers (DMC-14.42.220.E) – where allowance applies	Not applicable	Applicable only with 50% additional mitigation per DMC 14.42.240	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable	Applicable
Stormwater management	Not allowed	10%	20%	30%	40%

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facilities-conveyance, or discharge facilities (DMC 14.42.220.F-G) – outer portion (percent) of the standard Category II, III or IV wetland buffer where facilities are allowed	within buffer				
Passive recreation facilities; or trails (DMC 14.42.220.H) – outer portion (percent) of the standard Category I–II, III, or IV wetland buffer where allowed	Not allowed within buffer <u>Consistent with the SMP</u>	10%	20%	30%	40%
Category IV Wetlands less than 1,200 square feet (DMC 14.42.220 I) – where allowance applies	Not applicable	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable	Applicable
Category IV Wetlands less than 4,000 square feet (DMC 14.42.220 J) – where allowance applies	Not applicable	Not applicable	Applicable only with 50% additional mitigation per DMC 14.42.240	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable
Category III Wetlands (DMC 14.42.220.K) – where allowance applies	Not applicable	Not applicable	Not applicable	Applicable only with 25% additional mitigation per DMC 14.42.240	Applicable only with 10% additional mitigation per DMC 14.42.240

14.42.230 - Wetland review and reporting requirements.

- A. The director shall require a site evaluation (field investigation) by a qualified professional to determine whether or not a regulated wetland is present and if so, its relative location in relation to the proposed project area on site. If the director determines that a wetland is likely to be present, the director shall require a sensitive area study pursuant to DMC Section 14.42.060. If no regulated wetlands are present, then the wetland review will be considered complete.
- B. A sensitive area study (wetland assessment study) describes the characteristics of the subject property and adjacent areas. The assessment shall be completed pursuant to DMC Section 14.42.060 and include the following:
 1. Existing physical features of the site including buildings, fences, and other structures, roads, parking lots, utilities, water bodies, etc.;
 2. Determination of the wetland category and standard wetland buffers as set forth in pursuant to DMC Section 14.42.200;
 3. Field Identification and Delineation of Wetland Boundaries. For on-site wetlands, the assessment shall include the dominant and subdominant plant species; soil type, color and texture; sources of hydrology (patterns of surface and subsurface water movement, precipitation, etc.), topography, and other pertinent information;

4. Identification of sensitive areas and buffers within three hundred (300) feet of the site and an estimate of the approximate acreage for each. The minimum assessment shall include a windshield survey;
5. A detailed description of the effects of the proposed development on wetland and buffer function and value, including the area of direct wetland disturbance; area of buffer reduction or averaging including documentation that functions and values will not be adversely affected by the reduction or averaging; effects of stormwater management; proposed hydrologic alteration including changes to natural drainage or infiltration patterns; effects on fish and wildlife species and their habitats; clearing and grading impacts; temporary construction impacts; and effects of increased noise, light or human intrusion;
6. [A description of the methodologies used to conduct the sensitive areas study, including references.](#)
7. [Wetland rating forms and datasheets, and](#)
86. A mitigation plan pursuant to DMC Sections 14.42.130(C) and 14.42.25040 if applicable.

(Ord. 1056 § 1 Ex. 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

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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			

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

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

* Ratio is the replacement area: impact area.

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

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Category	Creation	Restoration	Creation (R/C) and Rehabilitation (RH)	Creation (R/C) and Enhancement (E)	Enhancement (E) Only
Category IV	1.5:1	3:1	1:1 R/C and 1:1 RH	1:1 R/C and 2:1 E	6:1
Category III	2:1	4:1	1:1 R/C and 2:1 RH	1:1 R/C and 4:1 E	8:1

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2. The director shall have the authority to adjust the replacement ratios when one or more of the following apply:
 - a. When a combination of mitigation approaches is proposed, the area of altered wetland shall be replaced at a 1:1 ratio through reestablishment or creation, and the remainder of the area needed to meet the ratio can be replaced by enhancement at a 2:1 ratio.
 - b. When the project proponent has a demonstrated ability, based on past performance, to successfully design, construct, monitor and maintain wetland mitigation projects/sites.
 - c. When meeting the required ratios would adversely affect other natural and valuable characteristics of an otherwise appropriate and suitable mitigation site.
- D. Compensation for wetland buffer impacts shall occur at a minimum 1:1 ratio, except where higher ratios are required to compensate for limited wetland buffer reduction allowances. Compensatory mitigation for buffer impacts shall include enhancement of degraded buffers by planting native species, removing structures and impervious surfaces within buffers, and other measures.
- E. Mitigation banks shall not be subject to the replacement ratios outlined in the replacement ratio table in subsection B of this section, but shall be determined as part of the mitigation banking agreement and certification process.
- F. Buffers. Replacement wetlands established pursuant to these mitigation provisions shall have adequate buffers to ensure their protection and sustainability. The buffer shall be based on the category of the reestablished, created, rehabilitated, enhanced, or preserved wetland in DMC Section 14.42.210, provided that the director shall have the authority to approve a smaller buffer when existing site constraints (such as a road) prohibit attainment of the standard buffer.
- G. Adjustment of ratios set out in subsection B of this section. The director shall have the authority to adjust these ratios when a combination of mitigation approaches is proposed. In such cases, the area of altered wetland shall be replaced at a 1:1 ratio through reestablishment or creation, and the remainder of the area needed to meet the ratio can be replaced by enhancement at a 2:1 ratio. For example, impacts to one acre of a Category II wetland requiring a 3:1 ratio for creation can be compensated by creating one acre and enhancing four acres (instead of the additional two acres of creation that would otherwise be required).

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- H. **Location – Permittee Responsible Mitigation.** Compensatory mitigation shall be provided on-site or a city approved off-site location that will provide the greatest ecological benefit and have the greatest likelihood of success. Off-site mitigation for impacts within Subbasin Management Groups prioritized lower for protection and restoration of ecological functions may be encouraged to occur in Subbasin Management Groups 1 and 2A, provided that mitigation occurs as close as possible to the impact area and within the same sub-basin as the permitted alteration. This provision may be waived upon demonstration through a watershed or landscape-based analysis that mitigation within an alternative sub-basin of the same watershed would have greater ecological benefit. **Mitigation shall occur within Water Resource Inventory Area 7 (WRIA).**
- I. **Wetland Mitigation Banks.**
1. Credits from a wetland mitigation bank may be approved for use as compensation for unavoidable impacts to wetlands when.
 - a. The bank is certified under state rules.
 - b. The Administrator determines that the wetland mitigation bank provides appropriate compensation for the authorized impacts, and
 - c. The proposed use of credits is consistent with the terms and conditions of the certified bank instrument.
 2. Replacement ratios for projects using bank credits shall be consistent with replacement ratios specified in the certified bank instrument.
 3. Credits from a certified wetland mitigation bank may be used to compensate for impacts located within the service area specified in the certified bank instrument. In some cases, the service area of the bank may include portions of more than one adjacent drainage basin for specific wetland functions.
- J. **In-Lieu Fee.** The city does not anticipate development of a city-administered in-lieu fee program. To aid in the implementation of off-site mitigation, the City may develop an in-lieu fee program. This program shall be developed and approved through a public process and be consistent with federal rules, state policy on in-lieu fee mitigation, and state water quality regulations. If a King County or other approved in-lieu fee program is approved to provide credit for unavoidable impacts to wetlands occurring in Duvall, the city may allow use of the approved in-lieu fee program. An approved in-lieu-fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor, a governmental or non-profit natural resource management entity. Credits from an approved in-lieu-fee program may be used when paragraphs 1-6 below apply consistent with the following criteria.
1. The approval authority determines that it would provide environmentally appropriate compensation for the proposed impacts.
 2. The mitigation will occur on a site identified using the site selection and prioritization process in the approved in-lieu-fee program instrument.
 3. The proposed use of credits is consistent with the terms and conditions of the approved in-lieu-fee program instrument.
 4. Land acquisition and initial physical and biological improvements of the mitigation site must be completed within three years of the credit sale.
 5. Projects using in-lieu-fee credits shall have debits associated with the proposed impacts calculated by the applicant's qualified wetland scientist using the method consistent with the credit assessment method specified in the approved instrument for the in-lieu-fee program.
 6. Credits from an approved in-lieu-fee program may be used to compensate for impacts located within the service area specified in the approved in-lieu-fee instrument.

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

L. Timing:

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

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

(Ord. 1056 § 1 Ex. A (part), 2007)

14.42.250 - Wetland mitigation plan.

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

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

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

- a. The rationale for site selection;
- b. General description and scaled drawings of the activities proposed including, but not limited to, to clearing, grading/excavation, drainage alterations, planting, invasive plant management, installation of habitat structures, irrigation, and other site treatments associated with the development activities and proposed mitigation action(s);
- c. A description of the ecological functions and values that the proposed alteration will affect and the specific ecological functions and values the proposed mitigation area(s) shall provide, together with a description of required or recommended mitigation ratios and an assessment of factors that may affect the success of the mitigation program;
- d. Overall goals of the plan, including wetland function, value, and acreage;
- e. Description of baseline (existing) site conditions including topography, vegetation, soils, hydrology, habitat features (i.e., snags), surrounding land use, and other pertinent information;
- f. Field data confirming the presence of adequate hydrology (surface and/or groundwater) to support existing and compensatory wetland area(s);
- g. Nature of mitigation activities, including area of restored, created, enhanced and preserved wetland, by wetland type;
- h. Detailed grading and planting plans showing proposed post-construction topography; general hydrologic patterns; spacing and distribution of plant species, size and type of proposed planting stock, watering or irrigation plans, and other pertinent information;

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- i. A description of site treatment measures including invasive species removal, use of mulch and fertilizer, placement of erosion and sediment control devices, and best management practices that will be used to protect existing wetlands and desirable vegetation;
- j. A demonstration that the site will have adequate buffers sufficient to protect the wetland functions into perpetuity;
- k. A monitoring plan with specific measurable performance standards that the proposed mitigation action(s) shall achieve together with a description of how the mitigation action(s) will be evaluated and monitored. Performance standards shall be project specific and use best available science to aid the department in evaluating to determine if whether the performance standards are being met. The performance standards shall be tied to and directly related to the mitigation goals and objectives.
- l. A contingency plan to guide decisions for revising compensatory mitigation plans and implementing measures to address both foreseeable and unforeseen circumstances that adversely affect compensatory mitigation success. Contingency plans will necessarily lack specific measures to address underperformance, but should identify funding sources and responsible parties. Specific corrective measures shall be developed if and when underperformance details become clearer, and identification of potential courses of action and any corrective measures to be taken if monitoring or evaluation indicates that project performance standards are not being met. The performance standards shall be tied to and directly related to the mitigation goals and objectives.
- m. Cost estimates for the installation of the mitigation program, monitoring, and potential corrective actions if project performance standards are not being met.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.260 - Wetland mitigation monitoring.

- A. All compensatory mitigation projects shall be monitored for a period necessary to establish that performance standards have been met, but generally not for a period less than five (5) years. The director shall have the authority to extend the monitoring period and require additional monitoring reports for up to ten (10) years when any of the following conditions apply:
 - 1. The project does not meet the performance standards identified in the mitigation plan.
 - 2. The project does not provide adequate replacement for the functions and values of the impacted sensitive area.
 - 3. The project results in unanticipated changes to hydrology of the impacted and/or mitigated wetland.
 - 4. The project involves establishment of forested plant communities, which require longer time for establishment.
 - 5. The project involves wetland creation.
 - 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:

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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 and their submerged aquatic beds that provide fish or wildlife habitat;
 3. Fish and wildlife habitat corridors, as designated by the city

Waters of the state;

 34. State nNatural area preserves and natural resource conservation areas;
 54. Areas with which species listed under the Federal Endangered Species Act have a primary association;
 65. 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;

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- b. Propose relevant management strategies considered effective and within the scope of this chapter; and
 - c. Provide a map showing the species or habitat location(s).
2. Submitted proposals shall be reviewed by the city and may be forwarded to the state departments of fish and wildlife, natural resources, and/or other local, state, federal, and/or tribal agencies or experts for comments and recommendations regarding accuracy of data and effectiveness of proposed management strategies.
 3. If the proposal is found to be complete, accurate, and consistent with the purposes and intent of this chapter, the city council will hold a public hearing to solicit comment. Approved nominations will become designated locally important habitats or species and will be subject to the provisions of this chapter.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.310 - Fish and wildlife habitat conservation areas—Streams.

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

1. ~~Type S~~ ~~Type S s~~ Streams are under the jurisdiction of the Shoreline Management Act. ~~shoreline streams are those streams identified and regulated as shorelines of the state as defined by WAC 173-18-310-210 and/or designated in the Duvall shoreline master program, DMC Chapter 14.78. The Snoqualmie River is the only designated shoreline stream in Duvall.~~
2. ~~Type F – Salmon bearing~~ ~~Type F - Salmon bearing streams~~ Other fish bearing streams that do not meet the definition of shorelines of the state but have known or potential use by anadromous or resident fish ~~salmonid~~ species. The director shall make determinations of known or potential fish ~~salmonid~~ use in accordance with best available science and shall take into consideration factors such as species life cycle requirements, habitat suitability, channel gradient, presence or lack of barriers, and a reasoned evaluation of current, historic, and potential fish ~~salmonid~~ use by a qualified professional.
3. ~~Type F – Non-salmon bearing~~ ~~Type F – Non-salmon bearing streams are o~~Other non salmon bearing streams that do ~~support other resident fish species and that do~~ not meet the definition of shorelines of the state.
4. ~~Type Np~~ ~~Type Np streams are~~ Nonfish-bearing streams are those streams that have no known or potential use by anadromous or resident fish based on the stream character, hydrology and gradient, provided that human-made barriers shall not be considered a limit on fish use except when the director makes the following findings:
 - a. The human-made barrier is located beneath public infrastructure that is unlikely to be replaced and it is not feasible to remove the barrier without removing the public infrastructure, provided that the infrastructure is not identified for future modification in the capital facility or other plans of the public agency responsible for the infrastructure, and the facility will not exceed its design-life within the foreseeable future;
 - b. The human-made barrier is located beneath one or more dwelling units and it is not feasible to remove the barrier without removing the dwelling unit, the dwelling units are in a single-family zoning district, on a lot or lots not subject to subdivision, and the dwelling units are of a size and condition that removal or substantial remodel is not likely;
 - c. The human-made barrier is not identified for removal by a public agency or in an adopted watershed plan.

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

C. The director shall determine stream type in accordance with best available science by considering known and potential salmonid use. The director shall take into consideration current, historic, and

potential fish use and factors such as species life cycle requirements, habitat suitability, channel gradient, presence or lack of barriers, and type of barrier (manmade or natural) to make a reasoned evaluation. This may include consultation with federal, state and tribal biologists and/or other qualified professionals.

(Ord. 1056 § 1 Exh. A (part), 2007)

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

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

- A. Buffers shall be established for activities adjacent to as necessary to protect the integrity, functions and values of the resource. Buffer widths shall reflect the sensitivity of the species or habitat and the type and intensity of the adjacent human use or activity.
- B. Buffer Measurement. The standard buffer shall be measured landward horizontally on both sides of the stream from the ordinary high water mark as identified in the field. The required buffer shall be extended to include any adjacent regulated wetland(s), landslide hazard areas and/or erosion hazard areas and required buffers, but shall not be extended across roads or other lawfully established structures or hardened surfaces that are functionally and effectively disconnected from the stream.
- C. Standard Buffers. The standard buffer widths required by this section are based on scientific studies of the conditions necessary to sustain ecological functions and values to support anadromous and resident fish and presume the existence of a dense native vegetation community in the buffer zone adequate to protect the stream functions and values at the time of the proposed activity. Buffers shall be measured as follows:
 - 1. ~~Type S streams~~Streams under the jurisdiction of the Shoreline Management Act—~~one hundred fifty (150) feet~~consistent with DMC Chapter 14.78 (Shoreline Regulations);
 - 2. Type F - Salmon bearing streams—~~one hundred (100) feet~~ **125** feet;
 - 3. Type F -- Other fish bearing (non-salmon) streams—seventy-five (75) feet;
 - 4. Type Np and Type Ns Nonfish-bearing streams—fifty (50) feet;
 - 5. Nonfish-bearing Type Np and Ns streams in existing subdivisions:
 - a. Where streams have been placed in separate tracts, buffers will be provided by the tract, provided a minimum dimension of twenty-five (25) feet from the edge of the stream is provided;
 - b. Where streams have not been placed in separate tracts, or if a minimum dimension of twenty-five (25) feet from the edge of the stream is not provided, buffers will meet the dimensional requirements in subsection (C)(4) of this section unless existing structures are located within the buffer. In that case, the following provisions shall apply:
 - i. An inner riparian buffer shall be provided with a dense community of native trees, shrubs, and groundcover. The dimension of this buffer shall be a minimum of fifteen (15) feet, and may be expanded if sufficient clearance is available between the stream and existing primary structures;
 - 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.

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- 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 McGormick 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.
		Enhance the riparian zone with native trees and shrubs and remove invasive plants along full length and depth of buffer.

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		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.
		Provide resources for restoration of shoreline bank conditions on the Snoqualmie River, owned by the city of Duvall, equivalent to the area within the buffer provided under the standards above.
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.
		Enhance the riparian zone with native trees and shrubs and remove invasive plants along full length and depth of buffer. 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.
		Provide resources for restoration of shoreline bank conditions on the Snoqualmie River, owned by the city of Duvall, equivalent to the area within the buffer provided under the standards above.
Thayer Creek (Class 2) Between City ownership and Main	Varies, see column to the right, 75 feet at	Right Bank

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Street	minimum	
		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 5075-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 of Coe-Clemens Creek 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) and stormwater treatment strategies on the site to improve water quality such as replacing outfall pipes and drainage ditches with vegetated bioswales, requiring pervious pavement for

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		portions of the site, or any upgrading or retrofitting of older stormwater features that meet King County Stormwater Design Manual (KCSWDM) requirements. Encourage low impact development (LID) strategies.	Formatted: Highlight
Thayer Creek (Class 2) Main Street to NE 143rd	50-75 feet	Evaluate the necessity of preserving wetlands adjacent to the riparian corridor to maintain discharge for baseflow support in low streamflow periods.	Formatted: Highlight
		Provide a minimum buffer of 50-75 feet with development restrictions requiring wetland preservation with the following conditions:	Formatted: Highlight
		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, restoration of shoreline bank conditions on the Snoqualmie River, or enhancement of buffer areas in Reach 1 and portions of Reach 2 of Coe Clemons Creek, 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.	Formatted: Highlight
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		Encourage low impact development (LID) and stormwater treatment strategies on the site to improve water quality such as replacing outfall pipes and drainage ditches with vegetated bioswales, requiring pervious pavement for portions of the site, or any upgrading or retrofitting of older stormwater features that meet King County Stormwater Design Manual (KCSWDM) requirements. Encourage low impact development (LID) strategies.	
Thayer Creek (Class 2) 143rd to Big Rock Road	50-75 feet	Remove the fish-passage barrier of the existing farm pond.	Formatted: Highlight

		Provide a minimum buffer of 50-75 feet with the following conditions:	Formatted: Highlight
		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, restoration of shoreline bank conditions on the Snoqualmie River or enhancement of buffer areas in Reach 1 and portions of Reach 2 of Coe Clemons Creek, 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.	Formatted: Highlight Formatted: Highlight Formatted: Highlight
		Encourage low impact development (LID) and stormwater treatment strategies on the site to improve water quality such as replacing outfall pipes and drainage ditches with vegetated bioswales, requiring pervious pavement for portions of the site, or any upgrading or retrofitting of older stormwater features that meet King County Stormwater Design Manual (KCSWDM) requirements. Encourage low impact development (LID) strategies.	
Thayer Creek (Class 2) South of Big Rock Road	50-75 feet	Provide a buffer of 50-75 feet.	Formatted: Highlight Formatted: Highlight
		Enhance the riparian zone with native trees and shrubs and invasive plant removal along the full length and depth of the riparian buffer.	
		Removal of fish passage barrier created by existing 12' culvert, associated berm and artificial pond.	Formatted: Highlight
		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) and stormwater treatment strategies on the site to improve water quality such as replacing outfall pipes and drainage ditches with vegetated bioswales, requiring pervious pavement for portions of the site, or any upgrading or retrofitting of older stormwater features that meet King County Stormwater Design Manual (KCSWDM) requirements. 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.
		Enhance the riparian zone with native trees and shrubs and remove invasive plants along full length and depth of 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.
		Provide resources for restoration of shoreline bank conditions on the Snoqualmie River, owned by the city of Duvall, equivalent to the area within the buffer provided under the standards above.
Coe-Clemons Creek (Class 2) Trail	100 feet	Provide a 100-foot-wide riparian buffer to maintain the off-channel functions of the stream. This buffer may be

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Embankment to Main Street		increased to 150 feet to accommodate mitigation from Reaches 4 through 7 of Coe-Clemmons Creek.
		Enhance the riparian zone with native trees and shrubs and remove invasive plants along full length and depth of 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.
		Provide resources for restoration of shoreline bank conditions on the Snoqualmie River, owned by the city of Duvall, equivalent to the area within the buffer provided under the standards above.
Coe-Clemmons Creek (Class 2) SR 203 to 3rd Ave NE	Varies, see column to the right, <u>75 feet at minimum</u>	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

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		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) and stormwater treatment strategies on the site to improve water quality such as replacing outfall pipes and drainage ditches with vegetated bioswales, requiring pervious pavement for portions of the site, or any upgrading or retrofitting of older stormwater features that meet King County Stormwater Design Manual (KCSWDM) requirements. 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 restoration of shoreline bank conditions on the Snoqualmie River, or 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

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		support downstream fish use.
		Encourage low impact development (LID) and stormwater treatment strategies on the site to improve water quality such as replacing outfall pipes and drainage ditches with vegetated bioswales, requiring pervious pavement for portions of the site, or any upgrading or retrofitting of older stormwater features that meet King County Stormwater Design Manual (KCSWDM) requirements. 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) and stormwater treatment strategies on the site to improve water quality such as replacing outfall pipes and drainage ditches with vegetated bioswales, requiring pervious pavement for

		portions of the site, or any upgrading or retrofitting of older stormwater features that meet King County Stormwater Design Manual (KCSWDM) requirements. 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) and stormwater treatment strategies on the site to improve water quality such as replacing outfall pipes and drainage ditches with vegetated bioswales, requiring pervious pavement for portions of the site, or any upgrading or retrofitting of older stormwater features that meet King County Stormwater Design Manual (KCSWDM) requirements. 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) and stormwater treatment strategies on the site to improve water quality such as replacing outfall pipes and drainage ditches with vegetated bioswales, requiring pervious pavement for portions of the site, or any upgrading or retrofitting of older stormwater features that meet King County Stormwater Design Manual (KCSWDM) requirements. 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) and stormwater treatment strategies on the site to improve water quality such as replacing outfall pipes and drainage ditches with vegetated bioswales, requiring pervious pavement for portions of the site, or any upgrading or retrofitting of older stormwater features that meet King County Stormwater Design Manual (KCSWDM) requirements. 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) and stormwater treatment strategies on the site to improve water quality such as replacing outfall pipes and drainage ditches with vegetated bioswales, requiring pervious pavement for portions of the site, or any upgrading or retrofitting of older stormwater features that meet King County Stormwater Design Manual (KCSWDM) requirements. Encourage low

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impact development (LID) strategies.

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

1. The buffer reduction shall not adversely affect the habitat functions and values of the adjacent stream. In all instances where an existing buffer is comprised of predominantly native and woody vegetation, the director shall assume that buffer reduction is not feasible without adversely affecting the functions and values of the adjacent stream, and shall deny requests for buffer reduction;
2. The in no instances shall standard buffers shall not be reduced to less than the maximum buffer reduction allowances in Table 5 than fifty (50) percent of the standard buffer. The buffer of any stream can be reduced by no more than the maximum allowances for subbasin management groups as detailed here!

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	Subbasin Management Group		
	1 Protect /Restore	2 (A, B, and C)	3 – Urban Development
Maximum reduction allowed for streams.	No reduction	No reduction	20%

3. Buffer reduction shall only be allowed when opportunity for stream buffer averaging as provided in subsection G of section is determined unfeasible due to site constraints.
34. The slopes adjacent to the stream within the buffer area are stable and the gradient does not exceed thirty (30) percent;
45. 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);
56. 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 of any stream can be averaged no more than the maximum allowance for subbasin management groups as detailed here.

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	Subbasin Management Group		
	1-Protect /Restore	2-(A, B, and C)	3 – Urban Development
Maximum reduction allowed for buffer averaging	No averaging	10%	25%

- 43. The buffer averaging is necessary due to site constraints caused by existing physical characteristics such as slope, soils, or vegetation;
- 4. ~~The At any point within the averaged buffer, the minimum width shall not be reduced to less than the maximum buffer averaging allowances for each subbasin management group in Table 5. buffer width may be reduced by twenty-five (25) percent of the standard width if the criteria in subsection G of this section are met.~~
- 5. The slopes adjacent to the stream within the buffer area are stable and the gradient does not exceed thirty (30) percent;
- 6. The applicant implements all reasonable measures to reduce the adverse effects of adjacent land uses and ensure no net loss of functions and values in conjunction with a sensitive area mitigation study. The specific measures that shall be implemented include, but are not limited to, those in DMC Section 14.42.210(B)(4);
- 7. Stream buffer averaging shall not be allowed if the performance-based stream buffers are implemented pursuant to DMC Section 14.42.330(E);
- 8. ~~The applicant shall demonstrate that the proposed buffer averaging is not detrimental to the stream system.~~

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

JI. 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.

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

Table 5. Subbasin Management Group - Buffer Reduction and Averaging Standards for Streams
[NEW TABLE]

	Subbasin Management Group		
	1-Protect /Restore	2B-Moderate Conservation	3 – Urban Development

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Stream buffer reduction (DMC 14.42.320.F) – maximum reduction allowed:	No reduction	10% No reduction	205%
Stream buffer averaging (DMC 14.42.320.G) – maximum reduction allowed:	No averaging	10%	3025%

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(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 [the mitigation sequencing requirements of DMC 14.42.130\(B\) are followed](#), all reasonable measures have been taken to avoid adverse effects on species and habitats, compensatory mitigation is provided for all adverse impacts that cannot be avoided, and the amount and degree of the alteration are limited to the minimum needed to accomplish the project purpose. [In addition, compensatory mitigation for stream impacts allowed through this provision shall occur within a Group 1 or Group 2 \(A, B, or C\) subbasin identified by Chapter 14.XX \(Watershed Management\). If occurring within a Group 2 subbasin, mitigation actions shall be consistent with opportunities identified in the 2015 Watershed Plan.](#)

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- A. Developments that meet the reasonable use standards set forth in DMC Section 14.42.070
- B. Relocation of streams, or portions of streams, when there is no other feasible alternative and when the relocation will result in equal or better habitat and water quality and quantity, and will not diminish the flow capacity of the stream or other natural stream processes, provided that the relocation has a state hydraulic project approval, all other applicable permits, and that relocation of the Snoqualmie River shall be prohibited.
- C. Road, trail, bridge, and right-of-way crossings provided they meet the [limitations within Table 6 and the following criteria:](#)

1. [Alteration is consistent with applicability of subbasin management groups as detailed here:](#)

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	Subbasin Management Group		
	1-Protect/Restore	2 (A, B, and C)	3 – Urban Development
Where allowance applies:	Applicable only with 50% additional mitigation per DMC 14.42.380	Applicable only with 10% additional mitigation per DMC 14.42.240	Applicable per mitigation requirements of DMC 14.42.240

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- 21. There is no other feasible alternative route with less impact on sensitive areas.
- 22. The crossing minimizes interruption of natural processes such as the downstream movement of wood and gravel and the movement of all fish and wildlife. Bridges are preferred for all stream crossings and should be designed to maintain the existing stream substrate and gradient, provide adequate horizontal clearance on each side of the ordinary high water mark and adequate vertical clearance above ordinary high water mark for animal passage. If a bridge crossing is not feasible, culverts shall be designed according to applicable state and federal guidance criteria for fish passage as identified in [Washington Department of Fish and Wildlife's Design of Road Culverts for Fish Passage \(Bates et al.,](#)

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2003) and/or National Marine Fisheries Services' Anadromous Salmonid Passage Facility Design (NMFS, 2008), in fish passage design at road culverts, WDFW March 1999, and/or the National Marine Fisheries Service Guidelines for Salmonid Passage at Stream Crossings, 2000, (and subsequent revisions) and in accordance with a state hydraulic project approval. The applicant or property owner shall maintain fish passage through a bridge or culvert.

- 43. 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.
- 54. Crossings shall be limited to the minimum width necessary. Common crossings are the preferred approach where multiple properties can be accessed by one crossing.
- 65. Access to private development sites may be permitted to cross streams, if there are no feasible alternative alignments. Alternative access shall be pursued to the maximum extent feasible, including through the provisions of RCW 8.24. Exceptions or deviations from technical standards for width or other dimensions, and specific construction standards to minimize impacts may be specified, including placement on elevated structures as an alternative to fill, if feasible.

D. Stormwater management facilities limited to open and vegetated detention and treatment facilities/treatment ponds, media filtration facilities and infiltration basins may be permitted in a standard stream buffer, subject to the limitations within Table 6 and all of the following standards and limitations. 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. Alteration is allowed within outer portion (percent) of the standard stream buffer consistent with applicability of subbasin management groups as detailed here:

	Subbasin Management Group		
	1 - Protect /Restore	2 (A, B, and C)	3 - Urban Development
Where allowance applies:	Not allowed within buffer	15%	35%

- 2. 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;
- 32. 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;
- 43. 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;
- 54. Low impact development approaches have been considered and implemented to the maximum extent feasible.

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

- 1. Alteration is allowed within outer portion (percent) of the standard stream buffer consistent with applicability of subbasin management groups detailed here:

	Subbasin Management Group

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	1-Protect /Restore	2 (A, B, and C)	3 – Urban Development
Where allowance applies:	Consistent with SMP standards	25%	50%

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- 2. Due to topographic or other physical constraints there are no feasible locations for these facilities in the outer buffer area or outside the buffer;
 - 32. 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;
 - 43. The discharge outlet is in an appropriate location and is designed to prevent erosion and promote infiltration;
 - 54. The discharge meets freshwater state water quality standards, including total maximum daily load (TMDL) standards as appropriate at the point of discharge. Standards should include filtration through mechanical or biological means, vegetation retention, timely reseeding of disturbed areas, use of grass-lined bioswales for drainage, and other mechanisms as appropriate within approved stormwater "special districts."
- F. Clearing and grading, when allowed as part of an authorized use or activity or as otherwise allowed in these standards, may be permitted provided that the following shall apply:
- 1. Grading is allowed only during the designated dry season, which is typically regarded as April 1st to October 1st of each year, provided that the city may extend or shorten the designated dry season on a case-by-case basis, based on actual weather conditions.
 - 2. Appropriate erosion and sediment control measures shall be used at all times. The soil duff layer shall remain undisturbed to the maximum extent possible. Where feasible, disturbed topsoil shall be redistributed to other areas of the site.
 - 3. The moisture-holding capacity of the topsoil layer shall be maintained by minimizing soil compaction or reestablishing natural soil structure and infiltrative capacity on all areas of the project area not covered by impervious surfaces.
- G. Stream bank stabilization, shoreline protection, and public or private launching ramps may be permitted subject to all of the following standards:
- 1. Natural shoreline processes will be maintained to the maximum extent practicable. The activity will not result in increased erosion and will not alter the size or distribution of shoreline or stream substrate;
 - 2. No adverse impact to fish or wildlife habitat conservation areas or associated wetlands will occur;
 - 3. No alteration of juvenile fish migration corridors will occur;
 - 4. No net loss of riparian habitat function will occur;
 - 5. Nonstructural measures, such as placing or relocating the development further from the shoreline, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient;
 - 6. Stabilization is achieved through bioengineering or soft armoring techniques in accordance with Washington Department of Fish and Wildlife's Integrated Streambank Protection Guidelines and an applicable hydraulic permit issued by the Washington Department of Fish and Wildlife;
 - 7. Hard bank armoring may occur only when the property contains an existing permanent structure(s) that is in danger from shoreline erosion caused by riverine processes and not erosion caused by upland conditions, such as the alteration of natural vegetation or drainage, and the armoring shall not increase erosion on adjacent properties and shall not eliminate or reduce sediment supply;

- 8. Normal sloughing, erosion of steep bluffs, or shoreline erosion itself, without a scientific or geotechnical analysis, is not demonstration of need;
- 9. The armoring will not adversely affect fish and wildlife habitat conservation areas or mitigation will be provided to compensate for adverse effects where avoidance is not feasible.

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

- 1. Alteration is allowed within outer portion (percent) of the standard stream buffer consistent with applicability of subbasin management groups detailed here:

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	Subbasin Management Group		
	1-Protect/Restore	2 (A, B, and C)	3 – Urban Development
Where allowance applies:	Consistent with SMP standards.	20%	40%

- 2. There is no other feasible alternative route with less impact on the sensitive area;
- 32. The trail minimizes disruption of natural processes, such as wood recruitment, and natural wildlife movement patterns;
- 43. Trails in riparian (stream) buffers shall be located on in the outer portion fifty twenty-five (50/25) percent of the standard buffer consistent with Table 6 this section of the code, except for limited viewing platforms and crossings; shall not exceed four (4) feet in width and shall be made of pervious material where feasible;
- 54. The trail is constructed and maintained in manner that minimizes disturbance of the buffer and associated sensitive areas;
- 65. Preference shall be given to community trails and trails constructed of pervious materials.

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- I. New utility lines and facilities may be permitted when all of the following criteria are met:
 - 1. There is no feasible alternative outside of sensitive area buffers and impacts to fish and wildlife habitat shall be avoided to the maximum extent possible.
 - 2. Where feasible, installation shall be accomplished by boring beneath the scour depth and of the stream or water body and the width of the channel migration zone where present.
 - 3. The utilities shall cross streams at an angle greater than sixty (60) degrees to the centerline of the channel or perpendicular to the channel centerline whenever boring under the channel is not feasible.
 - 4. Crossings shall be contained within the footprint of an existing road or utility crossing where possible.
 - 5. The utility installation shall not increase or decrease the natural rate or opportunity of channel migration.
- J. New public flood protection measures and expansion of existing ones may be permitted, subject to DMC Chapter 14.25, a state hydraulic project approval and other permits, provided that mitigation is provided to minimize adverse effects on stream hydrology and that bioengineering or soft armoring techniques shall be used where feasible. Hard bank armoring may occur only in situations where soft approaches do not provide adequate protection.
- K. Instream structures, such as, but not limited to, high flow bypasses, dams, and weirs, shall be allowed only as part of a watershed restoration project as defined pursuant to and upon acquisition of any required state or federal permits. The structure shall be designed to avoid adverse effects on stream flow, water quality, or other habitat functions and values.

(Ord. 1056 § 1 Exh. A (part), 2007)

Table 6. Subbasin Management Group Alteration Standards following table is all new! Stream Wetland alteration allowances per DMC 14.42.33220	Subbasin Management Group				
	1 – Protect/Restore	2A – Highest Conservation	2B – Moderate Conservation	2C – Least Conservation	3 – Urban Development
Public roads, bridges, trails, and right-of-way crossings (DMC-14.42.330 C) – where allowance applies.	Applicable only with 50% additional mitigation per DMC 14.42.380	Applicable only with 25% additional mitigation per DMC 14.42.380	Applicable only with 10% additional mitigation per DMC 14.42.380	Applicable	Applicable
Stormwater management facilities (DMC 14.42.330 D) – outer portion (percent) of the standard stream buffer where facility may be allowed	Not allowed within buffer	10% Not allowed within buffer	20/15%	30/25%	40/35%
Stormwater conveyance and/or discharge facilities (DMC-14.42.330-E) – outer portion (percent) of the standard stream buffer where facility may be allowed	Consistent with SMP standards	15%	25%	40%	50%
Passive recreation facilities, or trails (DMC-14.42.330-H) – outer portion (percent) of the standard buffer where facility may be allowed	Consistent with SMP standards	10%	20%	30%	40%

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

- A. Buffer Measurement. The standard buffer shall be measured landward horizontally perpendicular to the shore of the pond or lake. The required buffer shall be extended to include any adjacent regulated wetland(s), landslide hazard areas and/or erosion hazard areas and required buffers, but shall not be extended across roads or other lawfully established structures or hardened surfaces that are functionally and effectively disconnected from the habitat, pond or lake.
- B. Buffer Widths.
 - 1. Lake Rasmussen—buffers shall extend fifty (50) feet from the ordinary high water mark;
 - 2. Other lakes— buffers shall extend fifty (50) feet from the ordinary high water mark unless the director determines that a narrower or wider buffer is appropriate based on the results of a sensitive area study.
- C. Allowed Uses. Allowed uses within natural ponds and their buffers shall be the same as those in DMC Section 14.42.330 for streams.

(Ord. 1056 § 1 Ex. A (part), 2007)

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

- A City-established fish and wildlife habitat corridors shall link sensitive areas and remaining undeveloped lands, maintaining physical connections for fish and wildlife across the city and associated subbasins, minimizing habitat fragmentation city-wide.
 - 1. Figure ES-6 of the 2015 Comprehensive Plan (Environment and Sustainability Element) details the location of fish and wildlife habitat corridors.
 - 2. All fish and wildlife habitat corridors shall be established with a 700-foot wide fish and wildlife habitat corridor management zone, extending 350 feet in all directions from the linear habitat corridors.
- B Corridor Management. Administrative rules established by the Director under the authority of DMC 14.42.150 shall be implemented and enforced to mitigate impacts of development activities within fish and wildlife habitat corridor management zones. Administrative rules for habitat corridor management shall.
 - 1. Establish a uniform system to evaluate and rate existing corridor conditions surrounding a development site, and on-site conditions within a development site; and
 - 2. Ensure that the extent of required management measures is commensurate with the extent and ecological quality of the project site area and the ecological quality of existing corridor linkages to off-site fish and wildlife habitat areas; and
 - 3. Ensure that management measures are differentiated to account for the opportunities provided by larger scale development types, including subdivisions and binding site plans, compared to smaller developments.
- C Wherever measures to protect and/or restore habitat corridors are required, a Habitat Management Plan (HMP) shall be prepared. A HMP shall.
 - 1. Document conditions of fish and wildlife habitat corridors based on the assessment required by administrative rules under DMC 14.42.350.B, and
 - 2. Identify measures being implemented to comply with administrative rule requirements, including a site plan identifying locations, design, specification, and details as necessary for habitat corridor measures.
 - 3. Be completed consistent with applicable requirements of DMC 14.42.370.
- D Development outside of a fish and wildlife habitat corridor.
 - 1. Development on properties located entirely outside of designated habitat corridor management zones is not required to evaluate habitat conditions or implement habitat corridor management measures.
 - 2. Applicants proposing development on properties located outside of designated habitat corridor management zones are encouraged to work with the City to minimize impacts to existing

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vegetation, habitat areas, and/or restore onsite habitat consistent with approaches in administrative rules established consistent with 14.42.350.B.

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

- ~~1— Development proposals that meet the minimum requirements for protection of habitat corridors shall be provided a XX% reduction in required rear-yard setbacks.~~
- ~~2— Development proposals that exceed minimum requirements for protection of habitat corridors by 30% shall be provided an additional XX% reduction in required setbacks, which may be applied to either the rear-yard or front-yard.~~

~~OTHER INCENTIVE OPTIONS FOR CONSIDERATION:~~

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

14.42.360 360 - Other fish and wildlife habitat conservation areas.

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

Fish and Wildlife Habitat Conservation Area	Buffer Requirement
<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>

Locally Important <u>species and</u> habitat areas	The need for and dimensions of buffers for locally important species or habitats shall be determined on a case-by-case basis, according to the needs of specific species or habitat area of concern. The director shall coordinate with <u>King County</u> , 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.
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- B. Alterations that occur within a locally important habitat area or that may affect a locally important species as defined herein shall be subject to review on a case-by-case basis. The director shall have the authority to require an assessment of the effects of the alteration on species or habitats and may require mitigation to ensure that adverse effects do not occur. This standard is intended to allow for flexibility and responsiveness with regard to locally important species and habitats.

(Ord. 1056 § 1 Exh. A (part), 2007)

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

A. City-established fish and wildlife habitat corridors link sensitive areas undeveloped lands maintain physical connections for fish and wildlife. Minimize habitat fragmentation city-wide.

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

B.

1.

_____ a Habitat Management Plan (HMP) A HMP document condition of fish and wildlife habitat corridors

_____ Development outside of a fish and wildlife habitat corridor.

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

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

14.42.360 370 - Fish and wildlife habitat conservation areas—Review and reporting requirements.

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

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the site evaluation determines that the species or habitat is present, the director shall require a sensitive areas ~~assessment-report~~study (habitat assessment).

- B. Waivers.** The director may waive the report study requirement for a single-family development that involves less than five thousand (5,000) square feet of clearing and/or vegetation removal and will not directly disturb the designated stream or pond buffer area, designated species, or specific areas or habitat features that comprise the fish and wildlife habitat conservation area (nest trees, breeding sites, etc.) as indicated by a site plan or scaled drawing of the proposed development.
- C. Habitat Assessment.** In addition to the general sensitive area study requirements of DMC 14.42.060, sensitive area studies for fish and wildlife habitat conservation areas must meet the requirements of this section. A sensitive areas study for a fish and wildlife habitat conservation area shall contain an assessment of habitats including the following site- and proposal- related information at a minimum. The sensitive areas report shall describe the characteristics of the subject property and provide other pertinent information including but not limited to:
1. Description of habitats and species; review of historical aerial photos or other available public records; description of existing topography, hydrology, soils, and vegetative features; existing physical features of the site such as buildings, fences roads, parking lots, utilities, etc.;
 2. Identification of any species of local importance, priority species, or endangered, threatened, sensitive, or candidate species that have a primary association with habitat on or adjacent to the project area, and assessment of potential project impacts to the use of the site by the species.
 3. A discussion of any federal, state, or local special management recommendations, including Washington Department of Fish and Wildlife habitat management recommendations, that have been developed for species or habitats located on or adjacent to the project area.
 24. The report shall specifically describe proposed development activities, including, but not limited to: type and extent of clearing and grading, temporary construction activities, type and extent of permanent structures;
 5. The report shall also describe, at a minimum, the proposed development's direct and indirect potential impacts on: fish and wildlife species, habitat areas, and/or buffers, including the area of direct disturbance, natural drainage or infiltration patterns, surface or subsurface hydrology, and local and regional stormwater management. The analysis shall consider the effects of increased noise, light or human intrusion.
 6. A discussion of measures, including avoidance, minimization, and mitigation, proposed to preserve existing habitats and restore any habitat that was degraded prior to the current proposed land use activity and to be conducted in accordance with mitigation sequencing [DMC 14.42.130(B)], and and measures to avoid, minimize and/or mitigate adverse impacts of the proposed development.
 7. A discussion of ongoing management practices that will protect habitat after the project site has been developed, including proposed monitoring and maintenance programs.
 - ~~3. The report shall also describe, at a minimum, the proposed development's impact on: fish and wildlife species, habitat areas, and/or buffers, including the area of direct disturbance, natural drainage or infiltration patterns, surface or subsurface hydrology, and local and regional stormwater management. The analysis shall consider the effects of increased noise, light or human intrusion.~~

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.370 380 - Fish and wildlife habitat conservation areas—Management standards.

- A. Activities that adversely affect fish and wildlife habitat conservation areas and/or their buffers should generally be avoided through site design, including clustering. Unavoidable impacts to designated species or habitats shall be compensated for through habitat creation, restoration and/or

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enhancement to achieve no net loss of habitat functions and values in accordance with the purpose and goals of this chapter.

- B. When compensatory mitigation is required, the applicant shall submit a mitigation plan in accordance with Section 14.42.130 with sufficient information to demonstrate that the proposed activities are logistically feasible, constructible, ecologically sustainable, and likely to succeed. Specific information to be provided in the plan shall include, but not be limited to:
1. General description and scaled drawings of the activities proposed including, but not limited to, to clearing, grading/excavation, drainage alterations, planting, invasive plant management, installation of habitat structures, irrigation, and other site treatments associated with the development activities and proposed mitigation action(s);
 2. A description of the functions and values that the proposed mitigation area(s) shall provide, together with a description of required and an assessment of factors that may affect the success of the mitigation program; and
 3. A description of known management objectives for the species or habitat.
- C. Required mitigation shall be completed as soon as possible following activities that will disturb fish and wildlife habitat conservation areas and during the appropriate season. Mitigation shall be completed prior to use or occupancy of the activity or development. Construction of mitigation projects shall be timed to reduce impacts to existing wildlife and flora.
- D. The director shall have the authority to require a monitoring plan with specific measurable performance standards that the proposed mitigation action(s) shall achieve together with a description of how the mitigation action(s) will be evaluated and monitored. Performance standards shall be project-specific and use best available science to aid the department in evaluating whether the performance standards are being met. The performance standards shall be tied to and directly related to the mitigation goals and objectives. Monitoring reports shall be submitted on an annual basis for a minimum of five years and up to ten years, or until the department determines that the mitigation project has achieved success criteria based on the performance standards.
- E. A contingency plan to guide decisions for revising compensatory mitigation plans and implementing measures to address both foreseeable and unforeseen circumstances that adversely affect compensatory mitigation success. Contingency plans will necessarily lack specific measures to address underperformance, but should identify funding sources and responsible parties. Specific corrective measures shall be developed if and when underperformance details become clearer. The director shall have authority to require monitoring of mitigation activities and submittal of annual monitoring reports to ensure and document that the goals and objectives of the mitigation are met. The frequency and duration of the monitoring shall be based on the specific needs of the project as determined by the director.
- F. All mitigation areas and associated buffers shall be permanently protected and managed to prevent degradation and ensure protection of FWHCA functions and values into perpetuity. Permanent protection shall be achieved through a site protection mechanism (e.g., conservation easement, restrictive covenant) in accordance with DMC Section 14.42.100.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.400 - Geologically hazardous areas—Designation and mapping.

- A. The purpose of this chapter is to reduce risks to human life and safety and reduce the risk of damage to structures and property from geologic hazards, and to allow for natural geologic processes supportive of fish and wildlife habitat. It is also meant to regulate and inform land use and planning decisions. It is recognized that the elimination of all risk from geologic hazards is not practical to achieve but the purpose of this chapter is to reduce the risk to acceptable levels. The approximate location and extent of known and suspected geologically hazardous areas are shown in maps created and/or published by the U.S. Geological Survey, Washington State

Department of Natural Resources, King County, City of Duvall, as well as other reputable sources. Other unmapped geologically hazardous areas exist in Duvall including those that are designated in this chapter. This chapter does not imply that land outside mapped geologically hazardous areas or uses permitted within such areas will be without risk. This chapter shall not create liability on the part of the city or any officer or employee thereof for any damages that result from reliance on this chapter or any administrative decision lawfully made hereunder.

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

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

- a. Slopes exceeding forty (40) percent with a vertical relief of ten (10) or more feet except ~~areas composed of competent rock and~~ properly engineered slopes designed and approved by a geotechnical engineer licensed in the state of Washington and experienced with the site geologic conditions;
- b. Potentially unstable slopes resulting from ~~rapid river or~~ stream incision, ~~river or~~ stream bank erosion include slopes exceeding ten (10) feet in height adjacent to streams, and lakes with more than a thirty (30) percent gradient adjacent to streams and tributaries including but not limited to Rasmussen Creek, Coe-Clemens Creek, Thayer Creek, and Cherry Creek;
- c. Slopes between fifteen (15) and forty (40) percent in which the slope intersects a geologic contact between that have a relatively permeable geologic unit overlying a relatively impermeable unit and have springs or groundwater seeps. This includes slopes where the contact daylight is obscured by soil cover;
- d. Areas that have shown evidence of historic failure, deformation, or instability, including but not limited to back-rotated or down-dropped benches on slopes; areas with structures that exhibit structural damage such as settling and racking of building foundations; and areas that have toppling, leaning, or bowed trees caused by ground surface movement, or areas with ground fracturing, caused by ground-surface movement;
- e. Areas that show past sloughing or calving of bluff sediments, resulting in a vertical or steep bluff face slope with little or no vegetation;
- f. Deep seated landslide areas characterized by one or more of the following features: scalloped ridge crests at the top of the slope, crescent shaped depressions, ground fractures, head scarps, side scarps, ponds or sag areas on mid slopes, benches and scarps on mid slope areas, landslide toes, or hummocky terrain. These features may be evident in aerial images, topographic maps, lidar imagery or on the ground.
- g. Areas below unstable slopes or that have been identified as landslide hazard areas that could be impacted by landslide run out.

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Areas that are at risk of mass-wasting due to seismic forces:

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

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

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

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

Areas designated as having "high" or "moderate to high" liquefaction susceptibility by the Landslide Susceptibility Map of King County, WA (Palmer and others, 2004) or other credible sources.

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

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3. **Erosion Hazard Areas.** Erosion hazard areas are those areas of Duvall susceptible to erosion because of any combination of soil, slope (gradient), slope aspect, structure, hydrology, human disturbance, or other physical factors. Potential erosion hazard areas are:

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a. Slopes exceeding forty (40) percent with a vertical relief of ten (10) or more feet with soils consisting of predominantly medium sand or finer grained units.

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b. Slopes above streams and tributaries including but not limited to Rasmussen Creek, Coe-Clemmons Creek, Thayer Creek, and Cherry Creek identified by the U.S. Department of Agriculture's Natural Resources Conservation Service as having a "severe" or "very severe" rill and inter-rill erosion hazard. Erosion hazard areas are also those areas impacted by shoreland and/or stream bank erosion containing soils that may experience severe to very severe erosion hazard including the following: 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);

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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.

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~~The approximate location and extent of known and suspected geologically hazardous areas are shown on 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 § 14.42.A (part), 2007)~~

14.42.420 - Geologically hazardous areas—General standards.

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

- A. Alterations ~~including but not limited to all new development, construction of buildings, driveways, structures, building additions, and other features~~ shall be directed toward portions of parcels or parcels under contiguous ownership that are not subject to, or at risk from, geologic hazards and/or are outside any associated buffer established by this chapter.
- B. Critical facilities, include, but are not limited to, schools, nursing homes, hospitals, police, fire and emergency response installations, and installations that produce, use, or store hazardous materials shall not be located in geologically hazardous areas if there is a feasible alternative location outside geologically hazardous areas that would serve the intended service population. If allowed, the facility shall be designed and operated to minimize the risk and danger to public health and safety to the maximum extent feasible.
- C. Land that is located wholly within a landslide or erosion hazard area, or its buffer may not be subdivided to create buildable parcels entirely within the hazardous area. Land that is located partially within a hazard area or its buffer may be divided provided that each resulting lot has sufficient buildable area outside of the hazardous area with provision for drainage, erosion control and related features that will not adversely affect the hazard area or its buffer.
- D. Allowed developments shall be engineered and/or constructed to minimize risk to health and safety, and protect the building and occupants from the hazard, and to avoid or compensate for impacts to other sensitive areas such as wetlands and fish and wildlife habitat conservation areas.
- E. Clearing and grading ~~within landslide hazard or erosion hazard areas~~ shall be allowed from May 1st to September 30th of each year provided that the city may extend or shorten the dry season on a case-by-case basis depending on actual weather conditions, except that timber harvest, not including brush clearing or stump removal, may be allowed pursuant to an approved forest practice permit issued by the Washington State Department of Natural Resources. Clearing and grading may be allowed between October 1st and April 30th only upon written approval by the department of public works.
- F. Utility lines and pipes shall be permitted in ~~erosion and~~ landslide hazard areas only when the applicant demonstrates that no other practical alternative is available. The line or pipe shall be located above ground and properly anchored and/or designed so that it will continue to function in the event of an underlying slide. Stormwater conveyance shall be allowed only through a high-density polyethylene pipe with fuse-welded joints, or similar product that is technically equal or superior.
- G. ~~Point discharges from surface water facilities and roof drains onto or upstream from an erosion or landslide hazard area shall be prohibited unless conveyed downslope to a point where there are no erosion hazards and discharged in accordance with standards for wetlands and streams.~~

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- G. Access roads and trails that are engineered and built to standards that avoid the need for major repair or reconstruction beyond that which would be required in nonhazard areas may be permitted only if the applicant demonstrates that no other feasible alternative exists, including through the provisions of RCW 8.24. If such access through sensitive areas is granted, exceptions or deviations from technical standards for width or other dimensions, and specific construction standards to minimize impacts may be specified.
- HG. On-site sewage disposal systems, including drain fields, shall be prohibited within erosion and landslide hazard areas and related buffers.
- JL. 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.
- KJ. A qualified professional, licensed in the state of Washington, shall review projects in geologically hazardous areas to ensure that they are properly designed and constructed to minimize the hazard.

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.430 - Geologically hazardous areas—Landslide hazard area standards.

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

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

- B. Alterations of a landslide hazard area and/or buffer may only occur for activities for which a sensitive area report is submitted and meets the following criteria:
 1. Reasonable development cannot be accommodated on portions of the site not subject to landslide hazards. Structures and improvements shall be clustered to avoid geologically hazardous areas and other sensitive areas. ~~Development within buffer areas shall be preferred over development within landslide hazard areas;~~

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2. Areas that are directly adjacent to a wetland, stream, pond or lake are not eligible for alteration of landslide areas ~~with a gradient of forty-(40) percent or more~~ but may be subject to alteration of buffers;
 3. The development will not increase surface water discharge or sedimentation to adjacent properties beyond predevelopment conditions;
 4. The development will not increase erosion ~~or risk~~ or sedimentation ~~risk or delivery~~, decrease slope stability, or result in greater risk or a need for increased buffers on neighboring properties;
 5. Such alterations will not adversely impact other sensitive areas;
 6. ~~For sites requiring slope mitigation and/or engineering solutions for stabilization,~~ 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 ~~ground~~ acceleration as established by the current version of the International Building Code. Measures to maintain slope stability, such as drainage systems, must be of a design that will assure operation without facilities requiring regular maintenance that would jeopardize stability if the facility fails.
- C.** ~~Point discharges from surface water facilities and roof drains onto or upstream from a potential landslide hazard area shall be prohibited unless conveyed downslope to a point where there are no erosion hazards and discharged in accordance with standards for wetlands and streams.~~
- D.** ~~Utility lines and pipes that are above-ground, properly anchored and/or designed may be permitted when the applicant demonstrates that no other feasible alternative is available to serve the affected population and that all reasonable measures have been taken to minimize risks and other adverse effects. It must be demonstrated that they will continue to function in the event of a slope failure or movement of the underlying materials and will not increase the risk or consequences of static or seismic slope instability or result in a risk of mass wasting.~~
- E. Buffer Requirements.** A buffer shall be established from all edges of landslide hazard areas. The size of the buffer shall be determined by the public works director ~~based on the findings and recommendations of a qualified professional.~~ The buffer may be increased where the public works director determines a larger buffer is necessary to prevent risk of damage to proposed and existing development.
1. ~~The goal of the buffer is to eliminate or minimize the risk of property damage, death, or injury resulting from landslides caused in whole or part by the development based upon review of and concurrence with a sensitive area report prepared by a qualified professional.~~
 2. ~~The buffer size shall include consideration of the hydrologic conditions of landslide hazard areas including any hydrologic contribution of development or construction to the landslide hazard areas or areas above or below the landslide hazard areas that may affect slope stability of the landslide hazard area or landslide runoff dynamics.~~
 3. ~~The buffer size shall include consideration of the vegetation on landslide hazard areas and in areas above and below the landslide hazard area that may affect the slope stability of the landslide hazard area or landslide runoff dynamics. The public works director shall have the authority to require vegetation or other measures to protect and improve slope stability and shall have the authority to require a notice on the title conservation-easement or other method to ensure vegetation is maintained.~~
 4. ~~Minimum buffer. 1. Minimum Buffer a. For all development proposals, the minimum buffer width from the top and toe/lateral edges of a potential landslide hazard areas 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~~

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~~resources. The buffer distance from the top of slope shall be equal to the greater of: a. 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 b. A horizontal distance from the top of the slope equal to the vertical height of the slope; or c. a minimum of 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: A horizontal distance equal to the vertical height of the slope; or c. Fifty (50) feet from the toe of the slope. 2. Buffer Reduction. The minimum buffer from the toe of potential landslide hazard area slope shall be the greater of: a horizontal distance equal to the total height of the slope, or 50 feet as measured from the top of the slope. The minimum buffer width may be reduced to a minimum of ten (10) feet based on analysis of specific development plans provided by a qualified professional that demonstrates to the public works director's satisfaction that the reduction will adequately protect the proposed development, adjacent developments, uses and other nearby sensitive areas, and will not result in reduced slope stability consistent with criteria E 1. through E 3 of this subsection.~~

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~~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. Site Plan Application Review. For site plan applications overlapping potential erosion hazard areas, the public works director shall require sufficient technical information on potential erosion hazards, including any potential on-site and off-site impacts, to ensure that future site development would not increase potential for erosion and would be consistent with DMC Chapter 10.12 (Cleaning and Grading) and DMC Chapter 9.06 (Storm Drainage Utility).~~
- ~~B. Erosion and Sediment Control Plan. Erosion and sediment control plan requirements set forth in DMC Chapter 9.06 shall be required to ensure potential erosion hazards are addressed during project construction.~~

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

- ~~1. Minimized in moderate surface erosion areas retained to provide multiple benefits including reduction of stormwater runoff and reduction erosion potential;~~
- ~~2. Prohibited in severe erosion areas to provide multiple benefits including reduction of stormwater runoff and reduction erosion potential and long-term stability of sensitive slopes in all but exceptional cases. The severe erosion hazard area and buffer shall include woody vegetation and undergrowth adequate to stabilize the soil and prevent erosion. If the designated erosion hazard area and buffer area lacks adequate woody vegetation, the public works director shall have the authority to require vegetation restoration other measures to improve slope stability.~~

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

- ~~1. For moderate surface erosion hazard areas, development is allowed if the criteria in DMC Sections 14.42.420 and 14.42.430(B)(1) through (5) are met.~~
- ~~2. For severe surface erosion hazard areas, development is allowed if additional criteria in DMC Sections 14.42.420 and 14.42.430(B)(1) through (6) are met.~~

C. Buffer Requirements—Buffer requirements are as follows:

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

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

~~(Ord –1056 § 1 Exh –A (part) –2007)~~

14.42.450 - Geologically hazardous areas—Seismic hazard areas standards.

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

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

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.460 - Geologically hazardous areas review and reporting requirements.

- A. When city, county, state or other sensitive area maps or other sources of credible information indicate that a site proposed for development or alteration is or may be located within a geologically hazardous area ~~or could impact a geologic hazard area~~ the director shall have the authority to require the submittal of a geologic ~~at hazard~~ assessment report.
- B. A geological ~~hazard~~ assessment report is an investigation process to evaluate the geologic characteristics of the subject property and adjacent areas. The geological assessment shall include field investigation and may include the analysis of historical aerial photographs ~~and lidar derived images~~, review of public records and documentation, and interviews with adjacent property owners. ~~Geologic hazard assessment reports shall be prepared, stamped, and signed by a qualified professional. A geological assessment for a specific site may be valid for a period of up to five years when the proposed land use activity and site conditions affecting the site are unchanged. However, if any surface and subsurface conditions associated with the site change during that five-year period, the applicant may be required to submit an amendment to the report.~~ The report shall include the following, provided that the director may determine that any portion of these requirements is unnecessary given the scope and/or scale of the proposed development:
 1. ~~include a discussion of all geologically hazardous areas on the site and any geologically hazardous areas off site potentially impacted by the proposed project. If the affected area extends beyond the subject property, the geology hazard assessment may utilize existing data sources pertaining to that area.~~
 2. ~~Clearly state that the proposed project will not decrease slope stability or pose an unreasonable threat to persons or property either on or off site and provide a rationale as to those conclusions based on geologic conditions and interpretations specific to the project.~~
 3. ~~Provide adequate information to determine compliance with the requirements of this article.~~
 4. ~~Generally follows the guidelines as applicable set forth in the Washington State Department of Licensing Guidelines for Preparing Engineering Geology Reports in Washington (2006). In some cases, such as when it is determined that no landslide or erosion risk is present, a full report may not be necessary to determine compliance with this article, and in those cases a letter or abbreviated report may be provided.~~

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5. If a landslide hazard is identified, provide minimum setback recommendations for avoiding the landslide or erosion hazard, recommendations on stormwater management and vegetation management and plantings, other recommendations for site development so that the frequency or magnitude of landsliding or erosion on or off the site is not altered, and recommendations are consistent with this article.
6. For projects in or affecting landslide hazard areas the report shall also include:
- 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.
 - Description of the run-out hazard of landslide debris to the proposed development that starts upslope (whether part of the subject property or on upslope properties) and/or the impacts of landslide run-out on down slope properties and sensitive areas.
7. For projects in seismic hazard areas, the report shall also include a detailed engineering evaluation of expected ground displacements or other liquefaction and/or dynamic settlement effects and proposed mitigation measures to ensure an acceptable level of risk for the proposed structure type or other development facilities such as access roads and utilities.

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

2 A scaled site plan showing

- 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.
- The location of existing and proposed structures, fill, access roads, storage of materials, and drainage facilities, with dimensions indicating distances to the floodplain.
- The existing site topography preferably accurate to within two-foot contours; and
- 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 with 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 ~~Frequently Flooded Areas~~—Designation and mapping.

~~Flood hazard~~Frequently flooded areas are those areas of Duvall subject to inundation by the base flood. Management of ~~flood hazard~~frequently flooded areas shall be in accordance with DMC Chapter 14.84 of this title in addition to the following provisions:

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

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.600 - Critical aquifer recharge areas—Designation and mapping.

A. Critical aAquifer recharge areas (CARAs) susceptible to degradation or depletion because of hydrogeologic characteristics are those areas meeting the criteria established by the state Department of Ecology Critical Aquifer Recharge Areas – Guidance Document, January 2005, Publication #05-10-028 (Guidance Document for the Establishment of Sensitive Aquifer Recharge Area Ordinances, July 2000, Publication No. 97-30, Version 4-0). The approximate location and extent of CARAs are shown on the City sensitive areas inventory map for CARAs. CARAs Sensitive aquifer recharge areas shall be classified as follows:

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

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.610 - Critical aquifer recharge areas standards.

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

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

14.42.620 – Critical aquifer recharge areas allowed activities.

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

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

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

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.630 - Critical aquifer recharge areas review.

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

1. Activities that include the use of hazardous substances, other than household chemicals used according to the directions specified on the packaging for domestic applications.
2. The use of injection wells proposed as part of a stormwater management system.
3. All storage tanks and storage facilities for hazardous substances and/or hazardous wastes provided that:
 - a. The tanks must comply with Department of Ecology regulations contained in WAC 173-360 and 173-303 as well as International Building Code requirements.
 - b. All new underground tanks and facilities shall be designed and constructed so as to prevent releases due to corrosion or structural failure for the operational life of the tank, or have a secondary containment system to prevent the release of any stored substances.

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- c. All new aboveground storage tanks and facilities shall be designed and constructed so as to prevent the release of a hazardous substance to the ground, groundwaters, or surface waters by having primary and secondary containment.
 - 4. Use of reclaimed wastewater must be in accordance with adopted water or sewer comprehensive plans that have been approved by the state Departments of Ecology and Health.
 - 15. Any other activity determined by the Director likely to have an adverse impact on ground water quality or quantity or on the recharge of the aquifer.
- A. The following development activities, when proposed in moderate or high susceptibility critical aquifer recharge areas, have the potential to adversely affect groundwater quality and/or quantity and shall require submittal of a sensitive areas assessment report:
- 1. Any development with an on-site domestic septic system at a gross density greater than one system per residence per acre.
 - 2. All storage tanks and storage facilities for hazardous substances and/or hazardous wastes provided that:
 - a. The tanks must comply with Department of Ecology regulations contained in WAC-173-360 and 173-303 as well as International Building Code requirements.
 - b. All new underground tanks and facilities shall be designed and constructed so as to prevent releases due to corrosion or structural failure for the operational life of the tank, or have a secondary containment system to prevent the release of any stored substances.
 - c. All new aboveground storage tanks and facilities shall be designed and constructed so as to prevent the release of a hazardous substance to the ground, groundwaters, or surface waters by having primary and secondary containment.
 - 3. Vehicle repair, servicing and salvaging facilities, provided that the facility must be conducted over impermeable pads and within a covered structure capable of withstanding normally expected weather conditions. Chemicals used in the process of vehicle repair and servicing must be stored in a manner that protects them from weather and provides containment should leaks occur. Dry wells shall not be allowed on sites used for vehicle repair and servicing. Dry wells existing on the site prior to facility establishment must be abandoned using techniques approved by the state Department of Ecology prior to commencement of the proposed activity.
 - 4. Use of reclaimed wastewater must be in accordance with adopted water or sewer comprehensive plans that have been approved by the state Departments of Ecology and Health.
 - 5. Any other development activity that the director determines is likely to have a significant adverse impact on groundwater quality or quantity, or on the recharge of the aquifer. The determination must be made based on credible scientific information.
- B. Level One Hydrogeologic Assessment. A level one hydrogeologic assessment shall include the following site and proposal-related information at a minimum.
- 1. Available information regarding geologic and hydrogeologic characteristics of the site including the surface location of all critical aquifer recharge areas located on site or immediately adjacent to the site, and permeability of the unsaturated zone.
 - 2. Ground water depth, flow direction, and gradient based on available information.
 - 3. Currently available data on wells and springs within 1,300 feet of the project area.
 - 4. Location of other critical areas, including surface waters, within 1,300 feet of the project area.
 - 5. Available historic water quality data for the area to be affected by the proposed activity, and
 - 6. Best management practices proposed to be utilized.

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

The sensitive area study above shall contain the following:

1. Available information regarding geologic and hydrogeologic characteristics of the site including the surface location of all critical aquifer recharge areas located on site or immediately adjacent to the site, and permeability of the unsaturated zone.
 2. Groundwater depth, flow direction and gradient based on available information;
 3. Currently available data on wells and springs within one thousand three hundred (1,300) feet of the project area;
 4. The presence and approximate location of other sensitive areas, including surface waters, within one thousand three hundred (1,300) feet of the project area based on available data and maps;
 5. Existing and available historic water quality data for the area to be affected by the proposed activity;
 6. Proposed best management practices to be used in developing and operating the project;
 7. The effects of the proposed project on the groundwater quality and quantity, including:
 - a. Potential effects on stream flow, wetlands and/or other resources, and on ecosystem processes;
 - b. Predictive evaluation of groundwater withdrawal effects on nearby wells and surface water features; and
 - c. Predictive evaluation of contaminant transport based on potential releases to groundwater
 8. A spill plan that identifies equipment and/or structures that could fail, resulting in an impact. Spill plans shall include provisions for emergency response provisions as well as regular inspection, repair, and replacement of structures and equipment that could fail.
- DC. If the applicant can demonstrate through a valid hydrogeological assessment that geologic and soil conditions underlying their property do not meet the criteria for low, moderate, or high susceptibility, the property shall not be considered a critical aquifer recharge area.**

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

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

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

B. Vehicle Repair and Servicing.

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

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

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

(Ord. 1056 § 1 Exh. A (part), 2007)

14.42.700 - Definitions.

As used in this chapter:

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

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

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

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

"Agricultural activities" means those activities directly pertaining to the production of crops or livestock including but not limited to cultivation, harvest, grazing, animal waste storage and disposal, fertilization, the operation and maintenance of farm and stock ponds or drainage ditches irrigation

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systems, canals, and normal maintenance, repair, or operation of existing serviceable structures, facilities, or improved areas. Activities that bring an area into agricultural use are not agricultural activities.

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

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

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

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

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

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

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

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

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

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

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

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

"Buffer (the buffer zone)" means ~~the vegetated area adjacent to the outer boundaries of sensitive areas that separates and protects sensitive areas from adverse impact associated with adjacent land~~

~~uses the area contiguous with a sensitive area that maintains the functions and/or structural stability of the sensitive area.~~

"City" means Duvall, Washington.

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

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

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

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

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

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

"Creation" means the manipulation of a non-wetland (upland) site for purposes of establishing wetland functions and characteristics where none previously existed. Activities could include, but are not limited to, excavation of upland soils to elevations that will produce a wetland hydroperiod, create hydric soils, and support the growth of wetland plant species. Creation results in a gain in wetland acres.

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

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

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

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

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

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

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

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

"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;

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6. Unimpeded passage (i.e., due to suitable gradient and lack of barriers) for upstream and downstream migrating juveniles and adults.

"Flood or flooding" means a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland waters and/or the unusual and rapid accumulation of runoff of surface waters from any source.

"Floodplain" means the total land area adjoining a river, stream, watercourse, or lake subject to inundation by the base flood.

"Floodway" means the channel of a river or other watercourse and the adjacent land area that must be reserved in order to discharge the base flood without cumulatively increasing the surface water elevation more than one foot. Also known as the "zero rise floodway."

"Forested wetland" means a wetland with at least thirty (30) percent of the surface area covered by woody vegetation greater than twenty (20) feet in height, excluding monotypic stands of red alder or cottonwood that average eight inches diameter at breast height or less.

"Frequently flooded areas" means lands in the floodplain subject to a one percent or greater chance of flooding in any given year and those lands that provide important flood storage, conveyance and attenuation functions, as determined by the city in accordance with WAC 365-190-080(3). Classifications of frequently flooded areas include, at a minimum, the one hundred (100) year floodplain designations of the Federal Emergency Management Agency and the National Flood Insurance Program.

"Function and value" means the beneficial roles served by sensitive areas and the values people derive from these roles including, but not limited to, water quality protection and enhancement, fish and wildlife habitat, food chain support, flood storage, conveyance and attenuation, groundwater recharge and discharge, erosion control, wave attenuation, protection from hazards, providing historical and archaeological resources, noise and visual screening, open space, and recreation. These beneficial roles are not listed in order of priority.

"Function assessment or functions and values assessment" means a set of procedures, applied by a qualified consultant, to identify the ecological functions being performed in a wetland or other sensitive area, usually by determining the presence of certain characteristics, and determining how well the sensitive area is performing those functions. Function assessments can be qualitative or quantitative and may consider social values potentially provided by the wetland or other sensitive area. Function assessment methods must be consistent with best available science.

"Functions" means the processes or attributes provided by areas of the landscape (e.g., wetlands, rivers, streams, and riparian areas) including, but not limited to, habitat diversity and food chain support for fish and wildlife, groundwater recharge and discharge, high primary productivity, low flow stream water contribution, sediment stabilization and erosion control, storm and floodwater attenuation and flood peak desynchronization, and water quality enhancement through biofiltration and retention of sediments, nutrients, and toxicants. These beneficial roles are not listed in order of priority.

"Game fish" means those species of fish that are classified by the Washington Department of Wildlife as game fish (WAC 232-12-019).

"Geologically hazardous areas" means areas that because of their susceptibility to erosion, sliding, earthquake, or other geological events, pose unacceptable risks to public health and safety and may not be suited to commercial, residential, or industrial development.

"Gradient" means a degree of inclination, or a rate of ascent or descent, of an inclined part of the earth's surface with respect to the horizontal; the steepness of a slope. It is expressed as a ratio (vertical to horizontal), a fraction (such as meters/kilometers or feet/miles), a percentage (of horizontal distance), or an angle (in degrees).

"Grading" means any excavating or filling of the earth's surface or combination thereof.

"Groundwater" means all water that exists beneath the land surface or beneath the bed of any stream, lake or reservoir, or other body of surface water within the boundaries of the state, whatever may

be the geological formation or structure in which such water stands or flows, percolates or otherwise moves (Chapter 90.44 RCW).

"Growing season" means the portion of the year when soil temperatures are above biologic zero (forty-one (41) degrees Fahrenheit).

"Growth Management Act" means RCW 36.70A, and 36.70B, as amended.

"Hazard tree" means any tree that is susceptible to immediate fall due to its condition (damaged, diseased, or dead) or other factors, and which because of its location is at risk of damaging permanent physical improvements to property or causing personal injury.

"Hazardous substance" means any liquid, solid, gas, or sludge, including any material, substance, product, commodity, or waste, regardless of quantity, that exhibits any of the physical, chemical or biological properties described in WAC 173-303-090 or 173-303-100.

"Hydraulic project approval (HPA)" means a permit issued by the state Department of Fish and Wildlife for modifications to waters of the state in accordance with Chapter 75.20 RCW.

"Hydric soil" means a soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part. The presence of hydric soil shall be determined following the methods [in the approved federal wetland delineation manual and applicable regional supplements described in the Washington State Wetland Identification and Delineation Manual \(RCW 36.70A.175\)](#).

"Hydrologic soil groups" means soils grouped according to their runoff-producing characteristics under similar storm and cover conditions. Properties that influence runoff potential are depth to seasonally high water table, intake rate and permeability after prolonged wetting, and depth to a low permeable layer. Hydrologic soil groups are normally used in equations that estimate runoff from rainfall, but can be used to estimate a rate of water transmission in soil. There are four hydrologic soil groups:

1. Low runoff potential and a high rate of infiltration potential;
2. Moderate infiltration potential and a moderate rate of runoff potential;
3. Slow infiltration potential and a moderate to high rate of runoff potential; and
4. High runoff potential and very slow infiltration and water transmission rates.

"Hydrophytic vegetation" means macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

"Hyporheic zone" means the saturated zone located beneath and adjacent to streams that contain some proportion of surface water from the surface channel. The hyporheic zone serves as a filter for nutrients, as a site for macroinvertebrate production important in fish nutrition and provides other functions related to maintaining water quality.

"Impervious surface" means a hard surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development or that causes water to run off the surface in greater quantities or at an increased rate of flow compared to natural conditions prior to development. Common impervious surfaces may include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled macadam or other surfaces which similarly impede the natural infiltration of stormwater. Impervious surfaces do not include surface created through proven low impact development techniques.

"Infiltration" means the downward entry of water into the immediate surface of soil.

"In-kind compensation" means [compensatory mitigation that involves the same wetland type and functions as the lost or degraded wetland, for example, the same hydrogeomorphic \(HGM\) subclass \(e.g., riverine flow-through, depressional outflow, flats, etc.\), plant community, and Cowardin class \(e.g., palustrine emergent, palustrine forested or estuarine wetlands\)](#) to replace sensitive areas with substitute

~~areas whose characteristics and functions closely approximate those destroyed or degraded by a regulated activity.~~

"Lake" means a naturally or artificially created body of deep (generally greater than 6.6 feet) open water that persists throughout the year. A lake is larger than a pond, greater than one acre in size, equal or greater than 6.6 feet in depth, and has less than thirty (30) percent aerial coverage by trees, shrubs, or persistent emergent vegetation. A lake is bounded by the ordinary high water mark or the extension of the elevation of the lake's ordinary high water mark with the stream where the stream enters the lake.

"Landfill" means a disposal facility or part of a facility at which solid waste is permanently placed in or on land including facilities that use solid waste as a component of fill.

"Landslide" means a general term covering a wide variety of mass movement landforms and processes involving the downslope transport, under gravitational influence of soil and rock material en masse; included are debris flows, debris avalanches, earthflows, mudflows, slumps, mudslides, rock slides, and rock falls.

"Landslide hazard areas" means areas that, due to a combination of site conditions like slope inclination and relative soil permeability are susceptible to mass wasting.

"Maintenance and repair" means work required to keep existing improvements in their existing operational state. This does not include any modification that changes the character, scope, or size of the original structure, facility, utility or improved area.

"Mass wasting" means downslope movement of soil and rock material by gravity. This includes soil creep, erosion, and various types of landslides, not including bed load associated with natural stream sediment transport dynamics.

"Mature forested wetland" means a wetland with an overstory dominated by mature trees having a wetland indicator status of facultative (FAC), facultative-wet (FACW), or obligate (OBL). Mature trees are considered to be at least twenty-one (21) inches in diameter at breast height.

"Mean annual flow" means the average flow of a river, or stream (measured in cubic feet per second) from measurements taken throughout the year. If available, flow data for the previous ten (10) years should be used in determining mean annual flow.

"Mitigation" means individual actions that may include a combination of the following measures, listed in order of preference:

1. Avoiding an impact altogether by not taking a certain action or parts of actions;
2. Minimizing impacts by limiting the degree or magnitude of an action and its implementation;
3. Rectifying impacts by repairing, rehabilitating, or restoring the affected environment;
4. Reducing or eliminating an impact over time by preservation and maintenance operations during the life of the action;
5. Compensating for an impact by replacing or providing substitute resources or environments; and
6. Monitoring the mitigation and taking remedial action when necessary.

"Mitigation bank" means a site where wetlands or similar habitats are restored, created, enhanced, or in exceptional circumstances, preserved, expressly for the purpose of providing compensatory mitigation in advance of authorized impacts to aquatic resources.

"Mitigation bank instrument" means the documentation of agency and bank sponsor concurrence on the objectives and administration of the bank. The "bank instrument" describes in detail the physical and legal characteristics of the bank, including the service area, and how the bank will be established and operated.

"Mitigation bank sponsor" means any public or private entity responsible for establishing and, in most circumstances, operating a bank.

"Mitigation plan" means a detailed plan indicating actions necessary to mitigate adverse impacts to sensitive areas.

"Monitoring" means evaluating the impacts of development proposals over time on the biological, hydrological, pedological, and geological elements of such systems and/or assessing the performance of required mitigation measures throughout the collection and analysis of data by various methods for the purpose of understanding and documenting changes in natural ecosystems and features, and includes gathering baseline data.

"Native vegetation" means plant species that are indigenous to the King County and the local area.

"No net loss" means the maintenance of the aggregate total of the city's sensitive area functions and values as achieved through a case-by-case review of development proposals. Each project shall be evaluated based on its ability to meet the no net loss goal.

"Off-site mitigation" means to replace sensitive areas away from the site on which a sensitive area has been adversely impacted by a regulated activity.

"Ordinary high water mark" means the mark or line on all lakes, rivers, streams and tidal water that will be found by examining the beds and banks and ascertaining where the presence and action of waters are so common and usual and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland in respect to vegetation (RCW 90.58.030(2)(b)).

"Pond" means an open body of water, generally equal to or greater than 6.6 feet deep, that persists throughout the year and occurs in a depression of land or expanded part of a stream and has less than thirty (30) percent aerial coverage by trees, shrubs, or persistent emergent vegetation. Ponds are generally smaller than lakes. Farm ponds are excluded from this definition.

"Potable" means water that is suitable for drinking by the public (Chapter 246-290 WAC).

Practical Alternative. See "Feasible alternative."

"Preservation" means actions taken to ensure the permanent protection of existing, ecologically important sensitive areas and/or buffers that the city has deemed worthy of long-term protection.

"Primary association" means the use of a habitat area by a listed or priority species for 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 dependant 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

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consolidation relief, site plan review, permits or approvals authorized by a comprehensive plan or subarea plan.

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

1. A qualified professional for wetlands must have a degree in biology, ecology, soil science, botany, or a closely related field and a minimum of five years of professional experience in wetland identification and assessment in the Pacific Northwest.
2. A qualified professional for habitat conservation areas must have a degree in wildlife biology, ecology, fisheries, or closely related field and a minimum of five years professional experience related to the subject species/habitat type.
3. A qualified professional for geologically hazardous areas must be a professional engineering geologist or geotechnical engineer, licensed in the state of Washington.
4. A qualified professional for critical aquifer recharge areas means a Washington State licensed hydrogeologist, geologist, or engineer.

"Reasonable use" means a mechanism by which a local jurisdiction may grant relief from code requirements where compliance would leave no minimum economic use to which a property owner is entitled under applicable state and federal constitutional provisions in order to avoid a taking and/or violation of substantive due process/reasonable use of the property.

"Recharge" means the process involved in the absorption and addition of water from the unsaturated zone to groundwater.

"Reestablishment" means the manipulation of a former wetland site with the goal of restoring natural or historic wetland characteristics and functions that are no longer present. Reestablishment activities could include, but are not limited to, grading/excavation, removing fill material, plugging ditches, breaking drain tiles, and planting. Reestablishment results in a gain in wetland acres and functions.

"Rehabilitation" means the manipulation of the physical or hydrological characteristics of an existing degraded wetland for the purposes of repairing natural or historic functions and processes. Activities could involve, but are not limited to, breaching a dike to reconnect wetlands to a floodplain or other activities that restore the natural water regime. Rehabilitation results in a gain in wetland functions and processes but does not result in a gain in wetland acres.

"Repair or maintenance" means an activity that restores the character, scope, size, and design of a serviceable area, structure, or land use to its previously authorized and undamaged condition. Activities that change the character, size, or scope of a project beyond the original design and drain, dredge, fill, flood, or otherwise alter sensitive areas are not included in this definition.

"Resident fish" means a fish species that completes all stages of its life cycle within freshwater and frequently within a local area.

Restoration. See "Reestablishment."

"Rills" means steep-sided channels resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery. Rill erosion tends to occur on slopes, particularly steep slopes with poor vegetative cover.

"Riparian corridor or riparian zone" means the area adjacent to a water body that contains vegetation that influences the aquatic ecosystem and fish habitat by providing shade, fine or large woody material, nutrients, organic debris, sediment filtration, and terrestrial insects (fish prey production). Riparian areas include those portions of terrestrial ecosystems that significantly influence exchanges of energy and matter with aquatic ecosystems (i.e., zone of influence). Riparian zones provide important wildlife habitat.

They provide sites for foraging, breeding and nesting; cover to escape predators or weather; and corridors that connect different parts of a watershed for dispersal and migration.

"Riparian vegetation" means vegetation that tolerates and/or requires moist conditions and periodic free flowing water thus creating a transitional zone between aquatic and terrestrial habitats which provides cover, shade and food sources for aquatic and terrestrial insects for fish species. Riparian vegetation and their root systems stabilizes stream banks, attenuates high water flows, provides wildlife habitat and travel corridors, and provides a source of limbs and other woody debris to terrestrial and aquatic ecosystems, which, in turn, stabilize stream beds.

"Salmonid" means a species of the family Salmonidae, the salmon, trouts, chars, and whitefishes.

"Scrub-shrub wetland" means a wetland with at least thirty (30) percent of its surface area covered by woody vegetation less than twenty (20) feet in height as the uppermost strata.

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

"Sensitive areas" means any of the following areas or ecosystems, critical aquifer recharge areas, fish and wildlife habitat conservation areas, geologically hazardous areas, frequently flooded areas, and wetlands, as defined in RCW 36.70A and this Chapter. Sensitive areas are synonymous with and commonly referred to as critical areas, including within RCW 36.70A.

"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).

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"Shorelines of the state" means the total of all "shorelines," as defined in RCW 90.58.030(2)(d), and "shorelines of statewide significance" within the state, as defined in RCW 90.58.030(2)(c).

"Single-family development" means the development of a single-family residence permanently installed and served with utilities on a lot of record.

"Site" means any parcel or combination of contiguous parcels, or right-of-way or combination of contiguous rights-of-way under the applicant's ownership or control where the proposed project impacts an environmentally sensitive area.

"Slope" means:

1. Gradient;
2. The inclined surface of any part of the earth's surface, delineated by establishing its toe and top and measured by averaging the inclination over at least ten (10) feet of vertical relief.

"Soil" means all unconsolidated materials above bedrock described in the soil conservation service classification system or by the unified soils classification system.

"Sphagnum bog" means a type of wetland dominated by mosses of the genus Sphagnum that form peat. Sphagnum bogs are very acidic, nutrient poor systems, fed by precipitation rather than surface inflow, with specially adapted plant communities.

"Streams" are those areas where surface waters produce a defined channel or bed. A defined channel or bed is an area that demonstrates clear evidence of the annual passage of water and includes, but is not limited to, bedrock channels, gravel beds, sand and silt beds, and defined-channel swales. The channel or bed need not contain water year-round. This definition includes drainage ditches or other artificial water courses where natural streams existed prior to human alteration, and/or the waterway is used by anadromous or resident salmonid or other fish populations.

"Structure" means a permanent or temporary building or edifice of any kind, or any piece of work artificially built up or composed of parts joined together in some definite matter whether installed on, above, or below the surface of the ground or water, except for vessels.

"Toe" means the lowest part of a slope or cliff; the downslope end of an alluvial fan, landslide, etc.

"Top" means the top of a slope; or in this chapter it may be used as the highest point of contact above a landslide hazard area.

"Unavoidable" means adverse impacts that remain after all appropriate and practicable avoidance and minimization measures have been implemented.

"Utilities" means all lines and facilities used to distribute, collect, transmit, or control electrical power, natural gas, petroleum products, information (telecommunications), water, and sewage.

"Watershed" means a geographic region within which water drains into a particular river, stream or body of water.

"Well head protection area" means the area (surface and subsurface) managed to protect groundwater based public water supplies.

"Wet meadow" means palustrine emergent wetlands, typically having disturbed soils, vegetation, or hydrology.

"Wet season" means the period generally between November 1st and March 30th of most years when soils are wet and prone to instability. The specific beginning and end of the wet season can vary from year to year depending on weather conditions.

"Wetland" means areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined

swales, canals, detention facilities, retention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. However, wetlands include those artificial wetlands intentionally created to mitigate wetland impacts.

"Wetland buffer" means a designated area contiguous or adjacent to a wetland that is required for the continued maintenance, function, and ecological stability of the wetland.

"Wetland class" means the general appearance of the wetland based on the dominant vegetative life form or the physiography and composition of the substrate. The uppermost layer of vegetation that possesses an aerial coverage of thirty (30) percent or greater of the wetland constitutes a wetland class. Multiple classes can exist in a single wetland. Types of wetland classes include forest, scrub/shrub, emergent, and open water.

"Wetland delineation" means the precise determination of wetland boundaries in the field according to the application of specific methodology as described in the [approved federal wetland delineation manual and applicable regional supplements](#); 1997-Washington State Wetland Delineation Manual or 1987 Edition, as amended, Corps of Engineers Wetlands Delineation Manual and the mapping thereof.

"Wetland edge" means the boundary of a wetland as delineated based on the definitions contained in this chapter.

Wetland Enhancement. See "Mitigation."

"Wetland mitigation bank" means a site where wetlands and buffers are restored, created, enhanced, or in exceptional circumstances, preserved expressly for the purpose of providing compensatory mitigation in advance of authorized impacts to similar resources.

Wetland Restoration. See "Mitigation" and "Reestablishment."

"Windthrow" means a natural process by which trees are uprooted or sustain severe trunk damage by the wind.

"Wood waste" means solid waste consisting of wood pieces or particles generated as a by-product or waste from the manufacturing of wood products, handling and storage of raw materials and trees and stumps. This includes but is not limited to, sawdust, chips, shavings, bark, pulp, hog fuel, and log sort yard waste, but does not include wood pieces or particles containing chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenate.

(Ord. 1056 § 1 Exh. A (part), 2007)

memorandum

date July 20, 2017

to Lara Thomas, City of Duvall
Project Advisory Group, Sensitive Areas and Tree Protection Updates

from Aaron Booy and Christina Hersum, ESA
Dan McShane, Stratum Group (section on Geologically Hazardous Areas)

subject Sensitive Areas Ordinance Update - Gap Analysis and Best Available Science Consistency Review

The City of Duvall (City) is in the process of updating its Sensitive Areas Ordinance (SAO, Duvall Municipal Code [DMC] Chapter 14.42) in accordance with the requirements of the Growth Management Act (GMA) (RCW 36.70A)¹. The GMA requires cities to consider best available science (BAS) in the development of critical areas policies and regulations. In 2004 and 2005, the City reviewed the best available science and conducted a major update of its SAO to comply with the GMA. More recently, the City completed a comprehensive update to its Shoreline Master Program (SMP), which was approved by the Duvall City Council earlier this year and is pending approval from the Washington State Department of Ecology (Ecology) before becoming effective. The City expects the current SAO update to be relatively limited in scope and focused primarily on clarifying definitions and terms, streamlining the code, and ensuring consistency with the City's recently adopted Comprehensive Plan and Watershed Plan.

ESA reviewed portions of the City's SAO for consistency with the current scientific literature and applicable regulatory agency guidance. Specifically, we reviewed the SAO sections for General Provisions (DMC 14.42.100 to 150), Wetlands (DMC 14.42.200 to 260), Fish and Wildlife Habitat Conservation Areas (DMC 14.42.300 to 370), Flood Hazard Areas (DMC 14.42.500), and Critical Aquifer Recharge Areas (DMC 14.42.600 to 620).. As a subconsultant to ESA, the Stratum Group reviewed the provisions for Geologically Hazardous Areas (DMC 14.42.400 to 460). The Stratum Group is a geologic assessment firm specializing in review and management of landslide, erosion, and other geologically hazardous areas

In general, the latest BAS documents pertaining to sensitive areas have been prepared by state agencies as guidance to local governments. The ESA team also reviewed recently updated critical area codes from other neighboring jurisdictions (e.g., King County) and evaluated the code for areas where Duvall could achieve greater consistency with current standards and practices.

Our recommendations also reflect our professional judgment and experience assisting numerous cities and counties with sensitive areas management, code interpretation and administration.

¹ The City is completing the SAO update concurrently with an update to Tree Protection standards (DMC 14.40); this memo is focused only on updates to Sensitive Areas standards, except where standards are integrated between the two code chapters for protection of trees where occurring within Sensitive Areas.

BAS Review and Gap Analysis Methods

ESA and the Stratum Group conducted a line-by-line review of the current SAO for the purposes of identifying areas of inconsistency with agency guidance and BAS. We also focused on specific areas of concern identified by Watershed Plan and by City staff during scoping for this current code update project.

To organize our assessment of the City's SAO and Tree Protection Ordinance, we developed a gap analysis matrix (attached to this memo) to identify gaps and document consistency between SAO and Tree Protection provisions and GMA regulations, relevant agency guidance, and BAS published since 2005. Since that time new scientific findings have been published describing methods for improving the success of compensatory wetland mitigation, buffer effectiveness, and ecological functions of floodplains, among other topics. The gap analysis matrix provides an assessment of general consistency and the corresponding rationale and source for each gap identified. In addition to identifying provisions inconsistent with state law or recent science, our review identified several areas where the protection of critical areas could be improved by adding, removing, clarifying, and rearranging sections and subsections of the code to make them clearer and easier to implement. We categorized our assessment as follows:

- **Gap or Missing protection.** New code provision should be added to ensure compliance with GMA and BAS.
- **Consistency with BAS.** Code provision either does or does not, in our opinion, meet best available science or state guidance. Existing provision would result in detrimental impacts to critical areas and their functions and values.
- **Comprehensive Plan /Watershed Plan consistency.** The City recently adopted the 2015 Comprehensive Plan and 2015 Watershed Plan, both of which provide updated policy direction and recommended actions for Sensitive Areas management.
- **Clarity/ User friendliness.** Code provision is difficult to administer due to clarity, readability, and understandability.
- **Internal consistency.** Code provision is redundant (included in multiple sections) or is located in an inappropriate section.
- **Update to reflect current City procedures.** Code provision may not accurately reflect the current administrative procedures used by City staff in implementing the SAO and Tree Protection Ordinance.

The basis for each item identified is explained in the matrix and a citation is provided where applicable. Recommendations for revising the actual code language to achieve compliance or improve consistency will be provided in a separate document, per Task 2 of our scope of work.

Overall Code Structure and Definitions

The organization and content of the City's SAO regulations in DMC 14.42 is xx.

In general, the Duvall SAO reasonably clear and has a comparable structure with state guidelines. As detailed below, the wetlands, fish and wildlife habitat conservation areas, and geologically hazardous areas regulations, as well as several associated definitions sections, need to be updated in a few key areas to improve their consistency with BAS and current agency guidelines.

Best Available Science and Code Consistency Review

The following sections highlight gaps in the current SAO and Tree Protection Ordinance and areas that are inconsistent with BAS. They also summarize key best available science documents for each critical area. A complete list of references consulted during our review is provided at the end of this memo.

Wetlands

Wetlands are specifically identified for protection as a critical area under the GMA ([WAC 365-190-090](#)). The City's current SAO provides standards for protection of wetlands in DMC 14.42.200-260. ESA's review finds that the wetlands section of the SAO needs to be updated in a few key areas to improve its consistency with BAS and current agency guidelines, as detailed in the attached matrix. A summary of key gaps are as follows (a complete list is in the attached matrix):

- Current regulations refer to outdated manuals for wetland delineation and wetland rating. These manuals have been replaced with revised and newer versions.
- Current provisions for buffer reductions with enhancement or for buffer averaging allow for more reduction and/or averaging than suggested by BAS (Bunten et al., 2012).

Wetland Model Code

The wetland model code found in the *Critical Areas Assistance Handbook: Protecting Critical Areas Within the Framework of the Washington Growth Management Act* (CTED, 2007) was updated in 2012 to address small cities. The updated model code *Wetland Guidance for CAO Updates, Western Washington Version* (Bunten et al., 2016) and is considered Ecology's BAS for wetland regulations.

Wetland Delineation and Rating

In 2010, the US Army Corps of Engineers (Corps) released the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Corps, 2010). The regional supplement updates portions of the *1987 Corps' Wetland Delineation Manual* and provides additional technical guidance and updated procedures for identifying and delineating wetlands. State law requiring the *Washington State Wetlands Identification and Delineation Manual* (Ecology, 1997) was repealed in 2011, and the state manual is no longer valid. State law now requires that wetland delineations follow the Regional Supplement (WAC 173-22-035).

Ecology released an update to the state wetland rating system, the *Washington State Wetland Rating System for Western Washington: 2014 Update* (Hruby, 2014), which went into effect January 2015. The rating system is still a four-tier system and most of the material in the 2014 updated manual remains the same as the 2004 manual. The updated wetland rating system includes a new scoring range (i.e., between 9 and 27 under the updated system versus 1 to 100 in the 2004 system) that is based on a qualitative scale of functions from high, medium, or low. The new approach to scoring wetland functions on a high, medium, or low scale is more scientifically supportable than Ecology's 2004 rating system (Hruby, 2014). The 2014 system also includes new sections for assessing a wetland's potential to provide functions and values on a landscape scale.

Buffer Effectiveness

The guidance document, *Wetlands in Washington State – Vol. 1 A Synthesis of the Science* (Sheldon et al., 2005), synthesizes literature related to wetland buffers and buffer effectiveness among other wetland-related topics. In 2013, Ecology published *Update on Wetland Buffers: The State of the Science, Final Report* which updated the 2005 synthesis with a literature review of scientific documents published between 2003 and 2012 (Hruby, 2013). The 2013 update reviewed each of the conclusions in the Sheldon et al. (2005) report and referenced 144 scientific articles.

The updated buffer synthesis confirmed that buffers perform an important water quality function by trapping pollutants before they reach a wetland. Generally, the wider the buffer, the more effective it is at protecting water quality; however, recent research reveals that several other factors contribute to the effectiveness of buffers in protecting water quality functions. These factors include slope, type of vegetation, surface roughness, soil properties, and type and concentration of pollutants. Specifying only the width of a buffer as a means for protecting water quality functions can be complicated and may not address these other factors (Hruby, 2013). With respect to protecting habitat quality, research in the past decade reveals that wider buffers are needed to protect wetland-dependent species, many of which require larger areas of relatively undisturbed uplands for survival (Hruby, 2013). Previously, Sheldon et al. (2005) recommended buffer widths between 50 and 300 feet for the protection of wildlife habitat, depending on site specific factors. The more recent recommendations specify buffer widths that go beyond 300 feet for many wildlife species. The *Planner's Guide to Wetland Buffers for Local Governments* prepared by the Environmental Law Institute (42) recommends a range of 100–1000ft for wildlife, 30–100ft for sediment removal, 100–180ft for nitrogen removal, and 30–100ft for phosphorus removal.

Ecology's model code outlines a buffer width approach (Table XX.1) based on a wetland's category and wildlife habitat point score, and requires the use of minimization measures (Table XX.2) to reduce impacts of adjacent land use on the wetland (Bunten et al., 2016). Using this approach, Ecology suggests that a buffer width only be reduced when minimization measures have been successful at reducing since the buffer widths in Table XX.1 already represent a 25 percent reduction in recommended buffer width from Ecology's *Wetlands in Washington State - Volume 2: Guidance for Protecting and Managing Wetlands* (xx). In addition, Table XX.1 of the model code requires the protection of a habitat corridor between wetlands scoring 5 or more habitat points and any other WDFW designated Priority Habitat. While this requirement is practical for rural jurisdictions, Ecology acknowledges it would be difficult to apply in urban areas. For these situations where a wildlife corridor cannot be protected and minimization measures cannot be implemented, Ecology recommends an alternative approach (Table XX.3) that requires wider buffers than those in Table XX.1 where impacts to wetland functions are potentially greater (Ecology, 2016).

Granger et al. (2005) notes that for some situations where the buffer is composed of non-native vegetation, and therefore providing limited functions and values, simply applying a fixed width buffer may fail to provide the necessary characteristics to protect a wetland's functions. In these cases, it can be better to restore the buffer through enhancement activities.

Mitigation for Wetland Impacts

One of the topics that has evolved the most since Duvall's last code update is wetland mitigation. Mitigation includes avoiding, minimizing, rectifying, reducing, and compensating for impacts. According to data analyzed by the National Research Council (NRC), compensatory mitigation efforts, particularly on-site mitigation installed by the permittee, have poor success rates and have not achieved the national policy of "no net loss" of wetland area and functions (NRC, 2001).

To address these mitigation deficiencies, in early 2008 the Corps and Environmental Protection Agency (EPA) released revised regulations governing compensatory mitigation for authorized impacts to waters of the US, including wetlands. The Federal Rule, formally known as the *Compensatory Mitigation for losses of Aquatic Resources; Final Rule*, lays out criteria and performance standards designed to improve the success and quality of mitigation activities (Corps, 2008).

The 2008 Rule outlines a mitigation hierarchy, with preference for formally-approved mitigation banks over ILF programs and ILF programs over permittee-responsible mitigation (mitigation performed by a private party, usually the permit applicant). These different forms of mitigation are defined as follows:

- *Mitigation Banks*—restoring, establishing, enhancing, and/or preserving aquatic resources through funds paid to a public or private Sponsor to satisfy compensatory mitigation requirements for Corps permits. At banks, the Sponsor has already secured a mitigation site and initiated mitigation activities before fees are accepted. Typically, mitigation banks exist at one location and the Corps does not have authority over bank expenditures.
- *In-Lieu Fee (ILF) Programs*—restoring, establishing, enhancing, and/or preserving aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation requirements for Corps permits. In-lieu fee programs accept mitigation fees before securing and implementing projects. These programs implement mitigation at multiple sites as funds become available and after the Corps approves project funding.
- *Permittee-responsible Mitigation using a Watershed Approach* – when a mitigation bank or ILF program is not available, then a permittee-responsible mitigation may be considered using a watershed approach. The goal is to maintain and improve the quality and quantity of aquatic resources within the watershed where the impact occurs through meaningful mitigation constructed by the project applicant.

Alternative forms of mitigation do not change the requirements for permit applicants to follow the prescribed “mitigation sequence” of avoid, minimize, rectify, reduce, and compensate for impacts. Each of these steps still is required, but the above types of compensatory mitigation must be used, if available, instead of traditional on-site mitigation projects. In 2015, the Corps permit system was analyzed to determine how the 2008 Rule has affected the number or type of compensatory mitigation projects (IWR 2015). The report states that over the past 5 years, the Corps issued 56,400 permits or authorizations each year nationally, with only 10% of these authorizations actually requiring compensatory mitigation. As a result of the 2008 rule, project impacts are being avoided and minimized with fewer projects requiring compensatory mitigation at banks.

Currently in Duvall, there are two formally-approved mitigation banks that include the city and surrounding areas within their service areas (the Snohomish Basin Mitigation Bank, located downstream of Duvall in the lower Snoqualmie River floodplain, and the Skykomish Mitigation Bank, located along the Skokomish River immediately downstream of Monroe). In the last several years, the City has allowed use of the Snohomish Basin Mitigation Bank to satisfy compensatory mitigation requirements under SAO wetland requirements. Allowance has occurred when the applicant has demonstrated that bank mitigation credit will “provide equivalent or greater replacement of sensitive area functions and values when compared to conventional on-site mitigation” (DMC 14.42.130.E). In addition, King County has an ILF program (the King County Mitigation Reserves Program) that potentially could provide mitigation receiving sites eligible for impacts in the City, although to date no such sites exist. According to the 2008 Mitigation Rule overseeing authorized impacts to waters of the US (requiring Corps permits), applicants for permittee-responsible mitigation must demonstrate that the mitigation project uses a watershed approach.

Other BAS for compensatory mitigation is provided in a two-part guidance document published by Ecology, in coordination with the Corps and EPA. The document was intended to improve the quality, consistency, and effectiveness of compensatory mitigation in Washington State. *Wetland Mitigation in Washington State—Part 1: Agency Policies and Guidance* (Ecology Publication #06-06-011a, March 2006a) provides regulatory background and outlines information that regulatory agencies use. Some of this information has been superseded by the 2008 Federal Rule; however, the wetland mitigation ratio recommendations are still pertinent. *Wetland Mitigation in Washington State—Part 2: Developing Mitigation Plans* (Ecology Publication #06-06-011b, March 2006b) provides specific technical guidance on developing a compensatory wetland mitigation plan.

Mitigation Ratios

Ecology's *Guidance for Protecting and Managing Wetlands* (Granger et al. 2005) provides current BAS guidance on ratios for compensatory mitigation which are used by most local jurisdictions (Appendix 8-C). As an alternative to using mitigation ratios, Ecology developed *Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington* (Hruby, 2012) as a tool for determining how much compensatory mitigation is needed to replace lost wetland functions and values. Termed the "Credit-Debit Method," this manual uses a functions- and values-based approach to score functions lost at the project site (i.e., "Debits") compared to functions gained at a mitigation site (i.e., "Credits"). A mitigation project is considered successful when the "credit" score for a compensatory mitigation project is higher than the "debit" score. Based on our local experience, the Corps and Ecology are increasingly relying on the Credit-Debit Method instead of mitigation ratios alone.

Comprehensive Plan and Watershed Plan Consistency

The wetlands section of DMC 14.42 could be more consistent with the policies of the Duval Comprehensive Plan, some policies that are not represented in the current SAO include:

- ES 16.2 Preserve wetland systems by maintaining native vegetation between nearby wetlands and between wetlands and nearby streams and other wildlife habitat areas.
- ES 16.3 Use multiple tools to achieve wetland protection and restoration, including property acquisition, voluntary enhancement, property developer incentives and code requirements.
- ES 16.5 Prohibit stormwater management facilities within wetlands and limit such facilities within wetland buffers; ensure that wetland hydrology and water quality is maintained as adjacent development occurs.
- ES 16.6 For significantly altered or isolated wetlands with limited ecological functions, consider allowances for land development provided that adequate compensatory mitigation is provided.

The Watershed Plan recommends adding buffer allowances to DMC 14.42.210 (Wetland buffer standards) that are specific to each subbasin management group within the City (SA-5 Action). Implementing these variable buffer allowances (and restrictions) are intended to protect wetlands and watershed-level functional processes across the City, and especially in areas where these processes are most important (and frequently, most intact). For example, within Watershed Management Groups 1 and 2A, very limited wetland buffer modifications (e.g., buffer reduction or buffer averaging, and/or allowances for certain uses within buffer areas) should be allowed, except through a variance process. Within Management Groups 2B and 2C, buffer modifications should become progressively more available, while still limited, as the relative conservation value of the subbasin decreases. Within Management Group 3 subbasins, the greatest allowances for wetland buffer modifications should be provided. The recommended reductions of the Watershed Plan are consistent with 2012 Ecology guidance for protection of wetlands (Bunten et al., 2012); however even limited reduction allowances have

been removed from the updated 2016 Ecology guidance (Bunten et al., 2016). That said, the updated 2016 Ecology guidance does maintain allowances for impacts to Category IV wetlands that are small in size and isolated, and that do not provide other more important or unique habitat functions. Our understanding is that these allowances are intended to recognize that small, isolated, and lower value wetlands do occur within urbanizing areas, and that some allowance for impacts to such features may be warranted in these areas (where higher intensities of development are planned for) as long as adequate mitigation is provided.

In addition to revised buffer allowances, the Watershed Plan also recommends adding wetland mitigation site protection mechanisms to DMC 14.42.100 (Notice on title-plat map-site plan) and DMC 14.42.240 (Wetland mitigation) (SA-4 Action). The Watershed Plan recognizes that the Corps also requests that permittees place mitigation sites in a conservation easement or similar site protection mechanism (e.g., restrictive covenant). These site protection mechanisms are easier to legally enforce compared with tracts or notice to title, and should be the preferred protection mechanism required for wetland mitigation sites, and their associated buffers.

Fish and Wildlife Habitat Conservation Areas

Fish and wildlife habitat conservation areas (FWHCAs) are specifically identified for protection as a sensitive area under the GMA ([WAC 365-190-130](#)). The current SAO provides standards for protection of fish and wildlife habitat conservation areas in OMC 14.42.300-370.

Our review of these sections identified the following key gaps or inconsistencies (a complete list is in the attached matrix):

- Stream typing system and definitions are not fully consistent with state law use of DNR stream typing system.
- Current buffer reduction allowances on streams using enhancement or buffer averaging provide a greater degree of buffer width reduction (or averaging) than recommended by BAS for protection of aquatic resources and riparian processes (Bunten et al., 2016).

Stream Typing

State law refers to the use of the Washington Department of Natural Resources (DNR) stream typing system in Title 222 WAC, the forest practices regulations. The stream typing system codified in DMC 14.42.310 establishes a system that is generally consistent with the DNR stream typing system, but that does not include the same naming system, or the exact same definitions.

Current DMC 14.42 stream type with definitions	Proposed Name per DNR Stream Typing	Notes
<i>Streams under the jurisdiction of the Shoreline Management Act... ..as designated in the Duvall shoreline master program, DMC Chapter 14.78. The Snoqualmie River is the only designated shoreline stream in Duvall.</i>	Type S	<ul style="list-style-type: none"> • No need for definition change.
Salmon bearing streams - Other fish bearing streams that do not meet the definition of shorelines of the state but have known or potential use by	Type F – Salmon Bearing	<ul style="list-style-type: none"> • Type F represents all waters (perennial or seasonal) that are known to be used by fish <u>OR</u> contain fish habitat as defined by DNR criteria.

Current DMC 14.42 stream type with definitions	Proposed Name per DNR Stream Typing	Notes
<i>anadromous or resident [salmonid] fish species.</i>		<ul style="list-style-type: none"> DNR definition for Type F within WAC does not differentiate between salmon bearing and nonsalmon bearing streams.
Other fish bearing streams - Other nonsalmon bearing streams that do not meet the definition of shorelines of the state.	Type F – Nonsalmon bearing	<ul style="list-style-type: none"> Type F represents all waters (perennial or seasonal) that are known to be used by fish <u>OR</u> contain fish habitat as defined by DNR criteria. DNR definition for Type F within WAC does not differentiate between salmon bearing and nonsalmon bearing streams.
Nonfish-bearing streams - 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 [specific findings about the nature of the human-made barrier, detailed by DMC 14.42.310.A.4.].	Type Np – Nonfish-bearing perennial	<ul style="list-style-type: none"> Type Np represents perennial waters (flowing waters throughout the year under normal rainfall) that do not contain fish or fish habitat.
	or Type Ns – Nonfish-bearing intermittent	<ul style="list-style-type: none"> DMC 14.42 does not currently differentiate between nonfish-bearing streams of perennial vs. intermittent flows; opportunity for differentiation during code update. Type Ns represents intermittent waters that do not contain fish or fish habitat and have intermittent flows

Buffer Widths and Buffer Allowances

There are two separate stream buffer width provisions codified in DMC 14.42.320.C and 14.42.320.E; one is for standard measurements while the other is for performance-based measurements and is administered by the Director. The performance-based buffer provisions also include management measures with site-specific goals and objectives, and conceptual designs for four streams in the City, including: Thayer Creek, Coe-Clemons Creek, Cherry Creek Tributary A, and Cherry Creek Tributary B. These provisions are supported by recommendations from the *Fish Habitat Restoration Plan* (Herrera, 2002) prepared for the City to improve fish habitat conditions in these streams and comply with Endangered Species Act (ESA) requirements for protecting listed fish species habitat.

Recent WDFW publications do not provide any new or updated science on stream buffers and recommended widths. In general, the most recent recommendations for stream buffer widths vary from 75 feet to well over 300 feet to protect a suite of riparian ecological functions (Brennan et al., 2009; May, 2003; Knutson and Naef, 1997). Some of these riparian ecological functions (e.g., elk habitat, migratory corridors, and protections for specific priority species) may not be applicable to the urban or suburban land use setting. Specific to salmonids, Ecology has published guidance on minimum riparian buffer widths for implementing riparian restoration or planting projects that use water quality-related state and federal pass-through grants or loans (Appendix L in Ecology, 2013). The buffer widths are recommended by the National Marine Fisheries Service (NMFS) to help protect and recover Washington’s salmon populations. NMFS recommends a 100-foot minimum buffer for surface waters that are currently or historically accessed by anadromous or listed fish species and a 50-foot buffer for surface waters that do not have current or historical access. The standard buffer widths currently

adopted by DMC 14.42.320.C (ranging from 100 feet for salmon-bearing stream to 25 feet for nonfish-bearing streams occurring within existing subdivisions²) are somewhat below Ecology and NMFS recommendations.

In general, the standards related to wetland buffer reductions and averaging discussed earlier are deemed to be applicable to fish and wildlife habitat conservation area buffers, although specific requirements for streams supporting salmonids may be warranted. Many of Duvall's streams have experienced alteration from historic land use and development practices, providing opportunity for both in-channel and riparian enhancements as surrounding areas redevelop. From project permitting experience over the last 10 years, City staff and the City's environmental on-call consultant have recognized that performance-based stream buffer standards have been especially effective in incentivizing property developers to improve stream and riparian habitats.

Updating the performance-based stream buffer standards will be necessary to reflect development that has occurred, and stream enhancement measures that have already been implemented. In addition, the mitigation measures outlined in Ecology's model code (Table XX.2; Bunten et al., 2016) can also be used to minimize impacts to fish and wildlife habitat conservation areas. Low Impact Development (LID) strategies, which are mainly geared towards improving water quality and hydrology, can also have secondary benefits to wildlife (WDFW, 2009)

Salmon and Fish Habitat and Biodiversity

State, federal, and tribal agencies have prepared many of the latest documents pertaining to protecting salmon and fish habitat. In 2009, the Washington Department of Fish and Wildlife (WDFW) published *Land Use Planning for Salmon, Steelhead and Trout: A Land Use Planner's Guide to Salmonid Habitat Protection and Recovery* as part of an initiative to integrate local planning programs with salmon recovery efforts. The guidance provides science-based management recommendations in the form of model policies and regulations to be used by local jurisdictions during GMA and SMA planning and periodic updates. Recommendations are organized by topic areas that include specialized management programs (e.g., stormwater) or habitat elements (e.g., nearshore areas) to protect salmonid habitat function from development impacts.

Another WDFW document relates to managing biodiversity and habitat quality in developing areas and is called *Landscape Planning for Washington's Wildlife: Managing for Biodiversity in Developing Areas* (WDFW, 2009). The document provides information to planners and others that can be used to minimize the impacts of development to wildlife and to conserve biodiversity. It includes science-based recommendations regarding planning for biodiversity at the watershed scale and at the site and sub-division scale including habitat management plans (HMP) and vegetation plans.

Wildlife Habitat Connectivity

Existing City provisions in the SAO do not include protection for wildlife habitat corridors, however the Watershed Plan and 2015 Comprehensive Plan have directed the City to do so. See discussion on next page for details, as well as review of wildlife habitat corridor BAS provided in the separate memorandum from ESA, titled *Wildlife Habitat Corridor Assessment and Management* (May 2, 2017 draft).

² The SAO required buffer for the Snoqualmie River (the only SMA designated shoreline within the City) will be superseded by the City's updated SMP; final adoption of the updated SMP is anticipated by June 2017.

Comprehensive Plan and Watershed Plan Consistency

The Comprehensive Plan policies and goals relevant to the FWHCAs section of DMC 14.42 that are not represented in the sensitive areas regulations include:

Goal ES 9: *Value and support environmental quality and support choices that minimize impacts to the environment.*

- ES 19.1 Connect wildlife habitats within Duvall and within the region to achieve a continuous wildlife and watershed network. Habitat corridors may include preserved public or private open space, utility rights-of-ways, riparian corridors, wetland buffers or other features.
- ES 19.6 Minimize impacts from public projects, especially utility and transportation projects, on wildlife corridors and habitat connectivity.

The Watershed Plan recommended action, SA-1 Identify and Protect Habitat Corridors, is relevant to the FWHCAs section of the SAO. It calls for requiring a two-step process to identify and assess fish and wildlife habitat corridors: 1) establish a habitat corridor map that shows areas where site evaluation would be required; and 2) evaluate the onsite habitat corridor through addition of new criteria within DMC 14.42 and/or use of a rating form. Establishing fish and wildlife habitat corridors between sensitive areas and undeveloped land was identified in the Watershed Plan as important to maintaining physical connections for fish and wildlife throughout the watershed and minimizing habitat fragmentation city-wide. A map presenting initial fish and wildlife habitat corridors, with corridors along stream riparian areas, wetlands, and forested uplands was prepared as part of the Watershed Plan. The map identifies 350-foot wide habitat corridors throughout the city and urban growth areas³.

See the separate memorandum from ESA, titled *Wildlife Habitat Corridor Assessment and Management* (May 2, 2017 draft), for additional details on incorporating new protections for wildlife habitat corridors.

Frequently Flooded Areas

Frequently flooded areas are specifically identified for protection as a critical area under the GMA ([WAC 365-190-110](#)). The current SAO provides reference to standards for protection of frequently flooded areas in DMC 14.84 (Floodplain Regulations) for identification, reporting, and protection of floodplains that meet minimum NFIP and Washington State criteria. Our review of this chapter identified the following key gaps (a complete list is in the attached matrix):

- Current flood hazard regulations do not go beyond the FEMA minimum requirements for floodplain management as recommended by Ecology and BAS.
- Current flood hazard regulations focus chiefly from the perspective of flood effects on human health, safety, and property, and the effects of human activities on flooding. As discussed below, floodplains perform a variety of beneficial functions and recent BAS and guidance from state and federal agencies emphasize ecological functions.

³ Habitat corridors totaling 350 feet in width typically provide sufficient area for many species of wildlife to migrate, breed, and forage (Hennings and Soll, 2010).

Ecology and FEMA Guidance

In 2015, Ecology released *Guidance to Local Governments on Frequently Flooded Areas Updates in CAOs* that contains a useful summary of BAS sources for updating the designation and mapping of frequently flooded areas and new information that focuses on improving habitat in floodplains (Ecology, 2015). As noted in Ecology (2015), Ecology and FEMA encourage local governments to go beyond the FEMA minimum requirements for floodplain management, whenever possible. Greater protection from floods may be a policy objective that should be incorporated into a local jurisdiction's critical areas regulations. For example, some jurisdictions use the "flood of record" elevations to regulate the minimum elevation of structures, where the record flood is higher than the 100-year flood elevation used by FEMA (called the Base Flood Elevation [BFE]). Additionally, some jurisdictions require that structures be built two (or three) feet above the BFE or flood of record, rather than the minimum FEMA standards.

Ecological Functions of Floodplains

Due to the 2009 Biological Opinion (BiOp) by the National Marine Fisheries Service (NMFS) regarding protection of some federally listed species under the Endangered Species Act, there is a requirement by FEMA to assess the effects of floodplain development on habitat used by listed species. This new standard for protection is now required for National Flood Insurance Program (NFIP) participating communities (NMFS 2009; FEMA 2013). Although limited in Duvall, floodplains perform a variety of beneficial functions including providing for natural flood and erosion control, water quality maintenance, groundwater recharge, biological productivity, fish and wildlife habitat (Steiger et al., 2005), production of wild and cultivated products, recreational opportunities, and areas for scientific study and outdoor recreation (Kusler, 2011). Floodplains typically contain several major types of habitats including aquatic, riparian, wetland, and upland habitat. Thus, recent BAS and regional guidance for protection of ecological functions within a floodplain emphasize the importance of other critical areas (including wetlands, streams, riparian areas, and FWHCAs) within floodplains, and emphasizes the need to protect these areas from development (PSP, 2010; NMFS, 2009).

Relationship to SMP

The large majority of the City's 100-year floodplain, as designated by FEMA, is within the City's shoreline jurisdiction (shoreline areas associated with the Snoqualmie River). These areas will be regulated consistent with updated Shoreline Master Program (SMP) requirements, which will be fully adopted and become effective by June 2017 (local adoption has occurred, and Ecology's review and approval is anticipated later in May 2017). The updated SMP details that most Snoqualmie River floodplain areas are protected as City-owned open space, and designates these areas as "Passive Recreation and Conservancy" and "Public Recreation". The updated SMP includes standards that restrict development and redevelopment from occurring where it would require structural flood hazard reduction measures. Levees are to be prohibited, and fill within floodplain areas will only be permitted with limited allowed uses, and only when hydrologically better compensatory flood storage is provided (SMP Section 3.3, Table 1). Further, the updated SMP only permits structural flood control works, such as flood curtains or walls, to the east of the Snoqualmie Valley Trail when necessary to protect allowed development, and only when documented that net loss to ecological functions would occur consistent with WAC 173-26-201(2).

Comprehensive Plan and Watershed Plan Consistency

The Comprehensive Plan include policy ES 15.1, which state that "New floodplain development should generally be limited to passive park and utility uses, and should be consistent with the City's shoreline management standards."

New analysis and recommendations for frequently flooded areas were excluded from discussion in the Watershed Plan because they are adequately protected by the City's recently updated Shoreline Master Program, as well as through the City's compliance with Federal Emergency Management Agency guidance for protection of endangered species within floodplain areas.

Critical Aquifer Recharge Areas

Critical aquifer recharge areas (CARAs) are specifically identified and addressed as a critical area under the current SAO in DMC 14.42.600-620. The following paragraphs describe the City's approach to CARAs and summarize important BAS sources for CARA protection.

The City's mapped CARAs are predominantly located outside of the city limits and urban growth area. In general, most are located within the Snoqualmie River floodplain and extend upslope from the Cherry Creek floodplain into the Cherry Creek Tributary subbasin. Despite their location primarily outside City limits and UGA areas, CARAs in the Duvall vicinity do provide domestic water supplies for rural residents, and for agricultural uses; however once ground water is contaminated it is difficult, costly, and sometimes impossible to clean up. Preventing contamination is necessary to maintain groundwater domestic and agricultural supplies and to avoid extreme costs (or the loss of this resource) necessary if contamination were to occur (CTED, 2007).

The risk of ground water contamination depends on two main components. One set of conditions relates to the ground itself and how easy it is for water to pass through to ground water – this is the component that is identified through development of critical aquifer recharge area mapping. CARA mapping has been completed for the City, and represent the areas where underlying soils and geologic conditions allow for groundwater recharge (and correspondingly have a higher chance for contamination).

The other component relates to how likely it is for potential contaminants to reach ground water. The amount of potential contaminant material, chemical composition, and how the material is handled all contribute to this component, and are the key area where CARA standards are necessary to ensure that the potential is minimized. CARA regulations to minimize the potential for aquifer contamination have not changed significantly in the last ten years, and remain focused on ensuring that uses and activities with higher potential for contamination are appropriately evaluated (or prohibited) when occurring in CARAs.

Ecology has published guidance to assist local jurisdictions with developing protection measures in their CAO that includes an 8-step process for identifying, characterizing, and managing groundwater withdrawals and recharge impacts (Ecology, 2005). The guidance also includes BAS sources for protecting CARAs.

Geologically Hazardous Areas

Geologically hazardous areas are specifically identified as a critical area under the GMA ([WAC 365-190-120](#)) and notes four categories; erosion hazards, landslide hazards, seismic hazards, and areas subject to other geological events such as coal mine hazards and volcanic hazards. Duvall's sensitive areas code identifies regulations for landslide hazard areas, seismic hazard areas and erosion hazard areas. Our review found that the code needs to be updated in a few key areas to improve its consistency with the GMA, BAS literature, the City of Duvall Watershed Plan and the City of Duvall Comprehensive Plan, as detailed in the attached matrix. A summary of key gaps follows:

Erosion Hazard Areas

Soil erosion is a process in which individual soil particles are detached and moved by natural agents such as wind, rain, frost action, or surface water flows. Erosion poses a potential public health and safety hazard and over time can also undermine improvements such as building foundations, roads, and sidewalks. Eroded sediment entering bodies of water at greater rates than natural background can negatively impact ecosystem functioning, adding additional fine sediments to stream beds that degrade salmon spawning habitats. Increased stream sediment loads can also lead to downstream deposition causing increased flood frequency and stream channel changes. This can impact stream culverts at road crossings, limit conveyance capacity, restrict fish passage, and increase potential for infrastructure damage during storm events. A local (and recent) example of this was the old, undersized 6'-by-6' culvert where Coe-Clemmons Creek crosses under Main Street. While too small for the size of the stream, the culvert was further impacted by increased sediment and debris loads from upstream erosion within Taylor Park. Until the culvert was replaced in October 2015 with a much larger (25'-wide by 12'-high) culvert, stream flows were frequently forced through an opening less than 6-inches high.

King County mapped erosion hazard areas include those soils identified by U.S. Department of Agriculture (1973 and 1992) as susceptible to erosion with loss of vegetative cover, grading and land use changes (see Figure 3-1). These erosion hazard areas occur within the city, urban growth areas (UGAs) and surrounding area, with the largest concentration on steeper slopes along the northern edge of the city and areas surrounding the Coe-Clemmons Creek basin. Increased steam flows in these drainages can increase the rate of erosion and areas susceptible to erosion. Erosion along streams can also lead to up-slope instability and increasing the potential for landslides.

The City's current SAO (DMC 14.42.400) identifies erosion hazard areas based on slope and soil type with reference to the Natural Resources Conservation Services (NRCS). The soil types listed in DMC 14.42.400A.3.a. as erosion hazard area soils are not actually present within the City. However, there are other soil types present within the City that meet erosion hazard criteria [placeholder for examples of these soil types].

The City's standards for erosion hazard areas cross reference with landslide hazard area standards within the code. However, the landslide hazard area standards are only partially applicable to erosion hazard areas. More specific standards for soils susceptible to surface erosion would better address this hazard. In fact, based on review of other adopted land use standards in the Duvall Municipal Code, the existing protections applicable to land clearing, filling and grading, and stormwater management standards are more appropriate and effective in ensuring appropriate construction practices and development in areas susceptible to surface soil erosion.

Watershed Plan Consistency for Erosion Hazard Areas: Currently, stream erosion hazard areas are not recognized as specific erosion hazard areas in the City's code. Providing specific protections for stream drainages susceptible to erosion would be consistent with the City's Watershed Plan. Strategy SA-7 of the Watershed Plan calls for improving tree protection of geologic hazards and geologic hazard buffer areas. Retention of forested buffers around erosion susceptible stream slopes will minimize increases to stream peak discharges that cause increased erosion. This will be particularly true in the sub-basin Management Groups 1 and 2A areas per the recommended code changes under SA-7.

Landslide Hazard Areas

King County recently performed a County-wide landslide hazard assessment using LiDAR (light detecting and ranging) imagery of river valley slopes - *Mapping of Potential Landslide Hazards along River Corridors of King County* (King County, 2016). The mapping assessment identified several deep-seated landslide areas on slopes along the northeast side of the City, above Cherry Valley. While other deep-seated landslides were identified

outside City limits there were some located below upland areas and slopes that are within City limits. The mapping assessment did not cover the steep slopes of Coe-Clemmons Creek, potentially because the area was outside the geographic focus of the study. That said, review of LiDAR imagery is consistent with the south slope in the steep ravine as being a deep-seated landslide. The LiDAR mapping assessment also identifies the presence of alluvial fans at the lower end of streams as they reach the Cherry Valley floodplain on the northeast side of the City and the Snoqualmie River floodplain on the west side of the City (associated with lower Coe-Clemmons Creek).

Areas of potential shallow landslides are identified on the steep slopes above Cherry Valley within the City and northeast of the City as well as within steep sided streams in upland areas of the City, such as the steep slopes of Coe-Clemmons Creek (King County, 2016 and LiDAR review by Stratum Group). Factors that impact the stability of shallow soils include soil cohesion, soil thickness, saturated soil thickness, and angle of internal friction as well as the slope angle. Slope angles are often used to identify potential shallow landslide hazard areas. King County (2016) used methodologies adopted from Burns et al., (2012) to map potential shallow landslide areas with slopes greater than 28.3 degrees (54 percent) as having a severe landslide hazard potential. Slopes between 23.7 degrees and 28.3 degrees were identified as having a moderate landslide hazard potential. Slopes meeting these criteria are present in the areas of the City described above.

The current SAO language used for landslide hazard area designations is commonly used by many jurisdictions across Washington State. Recent detailed mapping, LiDAR, and other resources are currently missing from the code and should be incorporated into the code language. In addition, the current landslide hazard areas map used by the City does not distinguish between potential shallow landslide hazard areas and potential deep-seated landslide hazard areas.

Watershed Plan Consistency for Erosion Hazard Areas: Potential landslide hazard areas can be impacted by increased groundwater in potentially unstable slopes. To prevent an increased frequency of landslides, the City should ensure requirements that maintain the natural hydrologic regime of water reaching landslide hazard areas. Strategy SA-7 of the Watershed Plan calls for improving tree retention and specifically recommends that reducing landslide buffers should be discouraged. It provides specific recommendations and suggestions for slopes within Management Groups 1 and 2A in the northern part of the City and UGA; areas just north of the City, extending down slopes to the Cherry Valley, are where the large majority of landslide hazard areas in the Duvall vicinity are located. The Watershed Plan recommendations are a good approach to reducing the potential impacts to landslide prone slopes in these areas.

Seismic Hazard Areas

The City is located in an area of relatively high seismic risk (Petersen et al., 2014; and UW Shake Map Scenarios, 2014). Atwater (1992) and Atwater et al., (1995) identified the potential for very large seismic events [placeholder for Richter scale range] on the outer Washington coast that would generate very large earthquakes of long duration, with regional impacts including impacts to the Duvall area. Palmer et al., (2004) delineated areas potentially susceptible to soil liquefaction during earthquakes and hence more susceptible to damage to structures and infrastructure. Low areas along the floors of the Snohomish River and Cherry Creek Valleys are identified as potentially susceptible to soil liquefaction (Palmer et al., 2004).

In 1996, a magnitude 5.3 earthquake was centered in the Duvall area. The *Geologic Map of the Carnation 7.5-minute Quadrangle, King County, Washington* (Dragovitch et al., 2010) denotes several fault zones running through and in close proximity to the City. Highly disrupted older geologic units were identified along the base of Cherry Valley's slope on the northeast side of the City that have been interpreted as seismically induced; review of the larger area around Duvall and Northeast King County show evidence of large localized earthquakes. That said, no post glacial surface ruptures are evident in the LiDAR imagery of the Duvall area.

The City's Comprehensive Plan Policy ES 13.4 aims to "Support and promote seismic/liquefaction hazard preparedness efforts." The City can implement this policy through its SAO by adopting the International Building Code to address structure specific seismic hazards, and by ensuring that seismic hazard area designations are consistent with those identified on the City's seismic hazard map. DMC 14.42.460.B.9 already requires that projects in seismic hazards include a detailed engineering evaluation of expected liquefaction effects; this code section would likely be an appropriate location of for adoption of pertinent International Building Code standards.

Sensitive Areas Inventory Maps

The City recently compiled updated GIS data for sensitive areas mapping during the Watershed Plan and Comprehensive Plan development updates, resulting in updated sensitive areas inventory maps. ESA reviewed each data source as indicated in the table below. The City has generally complete and reliable inventory data for sensitive areas including fish and wildlife habitat conservation areas (streams and wildlife habitat corridors), wetlands, frequently flooded areas, and critical aquifer recharge areas. There is opportunity to update inventory mapping for geologically hazardous areas, focused on use of digital elevation models (DEM) from LiDAR imagery data to identify potential landslide hazard areas. Key data sources, some of which include existing mapping of shallow and deep-seated landslide areas, include King County (2016) and Dragovitch et al. (2010).

Next Steps

The attached matrix contains a variety of gaps or missing provisions in the City's currently adopted Sensitive Areas code. City Staff and the project Advisory Committee have used this BAS Review and the gap analysis list to determine strategies for revising the code.

The May 2017 Working Draft Gap Analysis Matrix is available at this link:

[GapAnalysisMatrix_ReviewDraft_May2017.docx](#)

Note – this is the same version that was provided to the Advisory Committee to initiate review, and does not provide the comments that were received. All Advisory Committee comments (along with ESA and City staff responses) will be provided with proposed redline Sensitive Areas Code updates in the weeks ahead.

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**City of Duvall
Sensitive Areas Ordinance (SAO) and Tree Protection Update
Gap Analysis Matrix – WORKING DRAFT
May 2, 2017**

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.010-150 General Provisions					
14.42.010 Purpose	Could be revised to be more consistent.	Section could be better aligned with the policies and objectives in the City's Comprehensive Plan.	Revise section to be more consistent with language used in the revised Comprehensive Plan	Internal consistency. CTED, 2007	
14.42.020 Applicability	Consistent with BAS/GMA.				
14.42.030 Sensitive Area Review	Consistent with BAS/GMA.				
14.42.040 General Exemptions	Inconsistent with guidance.	Code does not include requirements for minimizing impacts to sensitive areas.	Consider revising the introductory language to: "All exempted activities shall use reasonable methods to avoid or minimize impacts to	Sensitive area impacts resulting from exempt activities	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.040 (B) General exemptions	Could be revised to be more consistent with GMA	Code exempts maintenance of irrigation and drainage ditches.	<p>sensitive areas, and that alteration of a sensitive area that is not a necessary outcome of the exempted activity shall be restored at the responsible party's expense.</p> <p>The following developments, activities, and associated uses shall be exempt from the requirements of this chapter, provided that they are otherwise consistent with the provisions of other local, state, and federal laws and requirements:"</p> <p>Change "irrigation and drainage ditches" to "irrigation and drainage ditches that do not meet the criteria for being considered a fish and wildlife habitat area" to ensure consideration of anadromous salmonids.</p>	<p>WAC 365-190</p> <p>In some environments, existing drainage ditches may be completely manmade, or may be streams that were historically straightened and ditched,</p>	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.040 (D) Exemptions	Could be revised to be more consistent.	Code exempts maintenance of farm ponds, fish ponds, and livestock water ponds.	Change "farm ponds, fish ponds, and livestock water ponds" to "farm ponds, fish ponds, and livestock water ponds that do not meet criteria for being considered a fish and wildlife habitat area."	that may still provide fish habitat. In some environments, manmade wetlands or ponds may be ponds that were historically straightened and ditched, which may still provide fish habitat.	
	Could be revised to be more consistent	Code exempts maintenance of existing, lawfully established landscaping and gardens within sensitive areas or their buffers. While maintaining this exemption is reasonable, code could be clarified to indicate that exemption is not applicable if property redevelopment or expansion of structures occurs.	Consider updating exemption to make it clear that exemption does not apply if redevelopment or expansion of existing structures occurs. Sensitive area buffers and landscaping serve different purposes, which may be at odds.	Improve clarity.	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.050(F) Allowed Activities	Could be revised to be more consistent with BAS.	Section F(1) does not provide recommendations or resources for controlling state listed noxious weeds and invasive species. BAS provides suggestions for several strategies for controlling noxious weeds and invasive species including but not limited to: hand removal, chemical treatment, shading, or other techniques may be appropriate depending on the species and situation.	Revise Section F(1) to include additional information regarding noxious weed and invasive species removal. See Footnote 1 for example language.	Bunten et al., 2012	
14.42.060 (D) Sensitive Area Studies	Could be revised to be more consistent with BAS.	Code specifies that contents for sensitive area studies are provided in following sections of chapter, but there is no language describing general requirements for sensitive area reports.	Consider adding a list of minimum report contents. This will apply to all sensitive areas. The Commerce Example Code Provisions contain a set of report requirements that are commonly used by local jurisdictions (see X.10.0 in CTED, 2003).	Ecology and WDFW recommend that requirements for sensitive areas reports be included in administrative sections of the sensitive areas code. Sources: <i>Wetlands in Washington State, Volume</i>	

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14.42.070 Reasonable Use	Consistent with BAS/GMA.			2: <i>Guidance for Protecting and Managing Wetlands Ecology Publication #05-06-008 (Granger et al. 2005). Critical Areas Assistance Handbook: Protecting Critical Areas within the Framework of the Washington Growth Management Act (CTED 2003).</i>	
14.42.080 Appeals	Consistent with BAS/GMA.				

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.090 Density Credits	Consistent with BAS/GMA.				
14.42.100 Notice on Title	Inconsistent with BAS.	Code does not include provisions for establishing site protection mechanisms for mitigation sites.	Add provisions requiring mitigation site protection mechanisms (e.g. conservation easement, restrictive covenant).	City of Duvall Watershed Plan (ESA, 2015)	
14.42.110 Temporary marking, permanent survey marking and signs	Could be revised to be more consistent with BAS.	Code includes provisions for permanent fencing as a form of wetland protection.	Consider clarifying that fencing, if required, should be designed so it doesn't interfere with wildlife migration and should be constructed in a way that minimizes impacts to the wetland buffer, and associated habitat.	Improve consistency with BAS.	
14.42.120 Building Setbacks	Consistent with BAS/GMA; internal consistency issue with Landscaping Standards	Building setbacks required by this section extend 10 feet from the edges of all sensitive areas buffers. Portions of the City's Landscaping Standards (DMC Chapter 14.38) require a 15 foot wide landscape area extending from the edge of sensitive areas.	Revise DMC Chapter 14.42 and Chapter 14.38 so they provide corresponding building setback / landscape area width requirements.	Internal consistency within DMC Title 14.	
14.42.130 Mitigation	Consistent with BAS/GMA.				

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.140 Enforcement	Could be revised to be more consistent with guidance.	Code does not include provisions for the City to authorize a stop work order, or require a restoration plan for unauthorized alterations.	Consider including additional enforcement provisions for the Director; see Footnote 2 for example language.	CTED, 2003	
14.42.150 Administrative Rules	Consistent with BAS/GMA.				
14.42.200-260 Wetlands					
14.42.200(A) Designation, Rating, and Mapping	Could be more revised to be more consistent with GMA.	The wetland definition is not entirely consistent with the RCW/Ecology guidance definition.	Update definition to be consistent with RCW/Ecology guidance. See Footnote 3 for example language.	RCW 36.70A.030; Bunten et al., 2012	
14.42.200(B) and (D) Designation, Rating, and Mapping	Inconsistent with BAS	Section B and D reference outdated wetland delineation and rating manuals.	Revise Sections B and D to refer to the approved federal wetland delineation manual and applicable regional supplements, and the updated scoring system using the Washington State Rating System for Western Washington: 2014 Update.	Compliance with federal and state requirements (WAC 173-22-035, WAC 365-190-090)	Corps of Engineers Regulatory
	Could be more consistent with BAS.	Section B does not specify how long a wetland delineation is valid.	Section B could be improved for consistency with BAS by specifying that wetland		

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.210 Wetland Buffer Standards	Inconsistent with BAS.	Code does not include provisions for wetland buffer modifications specific to subbasin Management Groups identified in the Watershed Plan.	Revise to include provisions for specific wetland buffer modifications.	City of Duvall Watershed Plan (ESA, 2016)	
14.42.210(A) Wetland Buffer Standards	Inconsistent with BAS	Section A(3) buffer widths and habitat scores refer to the previous wetland rating system habitat scoring method. The rating system has been updated and scoring amounts have changed.	Revise Section A to refer to the Washington State Rating System for Western Washington: 2014. Update and to reflect recent BAS updates to buffers; for example, as shown in Table XX.1 in Ecology's wetland guidance document (Bunten et al., 2012). Ecology's example wetland buffer system contains provisions for increasing or decreasing buffer widths based upon the number of habitat points received; therefore the	Hruby, 2014; Bunten et al., 2012	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.210(B) and (C) Wetland Buffer Standards	Inconsistent with BAS	Section B(3) and C(4) allows for reducing wetland buffers greater than 25 percent and is not consistent with BAS.	Update provisions for buffer reduction to be no greater than 25 percent of the standard buffer width. If suggested revisions are made to include specific modifications per subbasin Management Group as identified in the Watershed Plan, then this may not be necessary.	Bunten et al., 2012	
14.42.220 Wetland Alterations	Could be revised to be more consistent.	Section does not refer to mitigation sequencing requirement.	Revise to include a reference to the mitigation sequencing provision in DMC 14.42.130(B).	Bunten et al., 2012 and consistency with federal and state standards.	
14.42.220(F) Wetland Alterations	Inconsistent with BAS.	Section F allows for stormwater management facilities to be located within the outer 50 percent of standard wetland buffers. It also allows for facilities to be located in buffers of Category II wetlands.	Remove provision or review "Allowed Buffer Uses" in Bunten et al. (2012).	Bunten et al., 2012	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.220(H) Wetland Alterations	Inconsistent with BAS.	Section H allows for a trail to be located in the outer 50 percent of the standard buffer area and is inconsistent with BAS.	Remove provision or review "Allowed Buffer Uses" in Bunten et al. (2012).	Bunten et al., 2012.	
14.42.230 Wetland Review and Reporting Requirements	Could be revised to be more consistent.	Section 6(B.6) references the wrong code section (DMC 14.42.240) for mitigation plan requirements.	Revise to include correct code reference (DMC 14.42.250).	Improve clarity	
14.42.230 (B) Wetland Review and Reporting Requirements	Generally consistent, but could be strengthened.	Additional detail could be added to strengthen reporting requirements in this section.	<p>Revise section to include the following requirements:</p> <ul style="list-style-type: none"> - A statement specifying the accuracy of the report and all assumptions made and relied upon; -A description of the methodologies used to conduct the sensitive areas study, including references; and -An assessment of the probable cumulative effects to sensitive areas resulting from development of the site and the proposed development; 	CTED, 2007; Bunten et al., 2012. These recommendations will clarify for the City how and what was done for a wetlands report.	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.240 Wetland Mitigation	Inconsistent with BAS.	Lacks reference to BAS sources for compensatory mitigation.	<p>-Wetland rating forms and datasheets</p> <p>Revise to include the following required BAS references: <i>Wetland Mitigation in Washington state-Part 2: Developing Mitigation Plans-Version 1</i> (Ecology Publication #06-06-01b) and <i>Selecting Wetland Mitigation Sites Using a Watershed Approach, Western Washington</i> (Ecology Publication #09-06-32).</p>	<p><i>Selecting Wetland Mitigation Sites Using a Watershed Approach, Western Washington</i> (Ecology Publication #09-06-32)</p>	
14.42.240(B) Wetland Mitigation	Inconsistent with BAS.	The replacement ratio table in Sections B refers to outdated wetland replacement ratios. Current BAS also suggests different mitigation ratios for specific types of Category I wetlands.	Consider removing replacement ratio table in Section C with Ecology's Table 8C-11.	Bunten et al., 2012	
14.42.240(H) Wetland Mitigation	Could be revised to be more consistent with BAS.	The code currently does not specify using mitigation banks or ILF programs as preferred over permittee-responsible mitigation (regardless of location). BAS indicates that advance mitigation and ILF programs have significantly greater likelihood of	Consider specifying that mitigation using banks or ILF programs is preferred over permittee-responsible mitigation (regardless of location), if the wetland alteration falls within the service areas of an existing	Corps, 2008; Ecology et al., 2012c	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.240(l) Wetland Mitigation	Could be revised to be more consistent with BAS.	Code does not specify using wetland mitigation site protection mechanisms (e.g., conservation easement, restrictive covenant). BAS indicates that these will minimize functional loss from degradation of wetlands and buffers.	Consider revising Section I to include site protection mechanisms.	ESA, 2015	
14.42.250(A) Wetland Mitigation Plan	Could be revised to be more consistent with BAS.	Section A(2) does not include provisions for a contingency plan.	Considering adding a new subsection requiring the development of a contingency plan.	Bunten et al., 2012	
14.42.260 Wetland Mitigation Monitoring	Consistent with BAS/GMA.	Section A(2)(k) does not specify the use of BAS in evaluating performance standards.	Revise subsection to require the use of BAS.		

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.300-370 Fish and Wildlife Habitat Conservation Areas (FWHCAs) – including Streams, Lakes and Wildlife Habitat Corridors					
14.42.300(C) Designation, Mapping and Classification	Inconsistent with GMA.	Section C includes some but not all of the fish and wildlife habitat conservation area types that are listed by the GMA and its implementing regulations. Missing: <i>Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish or wildlife habitat and Waters of the state as defined in RCW 90.48.020 and classified in WAC 365-190-130.</i>	Update this section with the regulated fish and wildlife habitat conservation area types that are listed in WAC 365-190-130 and in example code in CTED (2007).	Compliance with GMA (WAC 365-190-130). CTED, 2007.	
14.42.310(A) Streams	Inconsistent with GMA, BAS.	Section A(1) refers to the wrong WAC section for King County designated shorelines of the state. It should be WAC 173-18-210. The stream typing system is not completely consistent with State standards.	Revise to include correct WAC section. Consider revising standard stream classification system to include the Type S, F, Np, and Ns stream classes defined by Washington Department of Natural Resources. See BAS memo for details.	Compliance with GMA (WAC 173-18-210). The State stream typing system (WAC 222-16-030) is consistent with BAS.	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.320 Stream Buffers	Inconsistent with BAS.	Code does not include provisions for stream buffer modifications specific to subbasin Management Groups identified in the Watershed Plan.	Revise to include provisions for specific stream buffer modifications.	ESA, 2015	
14.42.320(C) Stream Buffers	Inconsistent with BAS.	The City's standard buffers range from 25 feet (non-fish bearing streams) to 100 feet (salmonid-bearing streams). BAS supports wider standard buffer widths. BAS suggests widths from 75 feet to well over 300 feet to protect a suite of ecological functions. Upper ranges are likely not feasible given existing platting and development patterns; however recent BAS suggests 100 foot minimum standard buffers for any stream with anadromous fish use and a 50 foot minimum standard buffer for other streams (Appendix L in Ecology, 2013).	Consider increases to standard buffer widths. ESA can provide more details and example language.	Brennan et al., 2009; May, 2003; and Knutson and Naef, 1997	
14.42.320(E) Stream Buffers	Generally consistent with BAS.	Performance-based buffer standards are generally consistent with BAS; however, many of the specific provisions for reaches designated with performance-based buffers have	Update Performance-based Stream Buffer Standards to account for new development and resulting stream habitat improvements in the last 10+ years, and to integrate this approach with the buffer	Update to reflect current City circumstances; Comprehensive Plan Watershed	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.320(F) Stream Buffers	Inconsistent with BAS.	Section F(2) allows for stream buffer width reductions greater than 25 percent, which is not supported by BAS.	Update provisions for buffer reductions to be no greater than 25 percent of the standard buffer width.	Bunten et al., 2012	
14.42.330 Streams Allowed Uses	Could be revised to be more consistent.	Section does not refer to mitigation sequencing requirement.	Consider updating section to reference mitigation sequencing requirement (DMC 14.42.130(B)).	CTED, 2007	
14.42.330(C) Streams Allowed Uses	Could be revised to be more consistent with BAS.	Section C(2) refers to outdated WDFW and NMFS guidance for fish passage.	Consider updating references to WDFW's <i>Design of Road Culverts for Fish Passage</i> (Bates et al., 2003) and/or NMFS's <i>Anadromous Salmonid Passage Facility Design</i> (NMFS, 2008).	WDFW 2013 <i>Water Crossing Design Guidelines</i>	
14.42.330(D) Streams Allowed Uses	Inconsistent with BAS.	Section D allows for stormwater management facilities to be located within the outer 50 percent of standard stream buffers, which is not supported by BAS.	Revise section the same as language regarding stormwater management facilities in wetland buffers (14.42.220(F)).	Improve internal consistency. Bunten et al., 2012	
14.42.330(H) Streams Allowed Uses	Inconsistent with BAS.	Section H allows for a trail to be located within the outer 50 percent of the standard buffer	Revise section the same as language regarding trails in wetland buffers (14.42.220(H)).	Improve internal consistency.	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.340 Habitat Conservation Areas – Ponds and Lakes	Consistent with BAS/GMA.	area, which is not supported by with BAS.		Bunten et al., 2012	
14.42.350(A) Other FWHCA	Could be revised to be more consistent.	The table in Section A does not reference King County's list of habitats and species of local importance found in their Comprehensive Plan (Attachment A to Ordinance 18427, E-435) and protected via King County Code (KCC) 21A.24.382. A list of the specific species and habitats relevant to the City would also be helpful to clarify and limit the application of this section.	Consider including King County's list of habitats and species of local importance or include reference to the listed habitats and species.	Consistency with King County CAO.	
14.42.360(C) Review and Reporting Requirement ⁵	Generally consistent, but could be strengthened.	Additional detail could be added to strengthen the reporting requirements in this section.	Revise section with the same language regarding wetland reporting requirements (DMC 14.42.230(B)).	CTED, 2007; Bunten et al., 2012	
14.42.370 Management Standards	Inconsistent with BAS.	Code does not include provisions requiring a monitoring plan for proposed mitigation; or	Consider adding new sections for requiring the development of a contingency plan,	Bunten et al., 2012 and ESA, 2015	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
		requirements for a contingency plan or site protection mechanism for mitigation. Standards are not focused on specific habitats or species and lack detail.	monitoring plan and site protection mechanisms. Revise to address specific habitats and species. ESA can provide example language during code revision stage. Also see City of Kenmore CAO 18-55-530 for possible language.	Inconsistent with BAS. WDFW, 2009	
14.42.3XX (NEW) Habitat Corridors	NA	NA	Consider including a new section for provisions and development standards to protect habitat corridors, as recommended in the Comp Plan and Watershed Plan. ESA can provide example language.	Comprehensive Plan /Watershed Plan consistency	
14.42.400-460 Geologically Hazardous Areas [PLACEHOLDER FOR GAP ANALYSIS REVIEW FROM STRATUM GROUP]					
14.42.400 Designation and Mapping	Landslide hazard areas are inconsistent with BAS.	Additional BAS for classifying landslide hazards specific to the Duvall area will better define the hazards. Deep-seated landslide hazard areas are not recognized. Recent applicable studies are not incorporated into designations and mapping. Lidar (light detecting and ranging) derived	Modify current language to be more directly applicable to Duvall landslide hazard areas and reference applicable landslide mapping and lidar.	Inconsistent with BAS.	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
	Erosion hazard areas are not consistent with BAS.	The erosion hazard areas is old guidance that does not align with BAS. Does not address stream bank and stream channel erosion hazards.	Add deep-seated landslide areas as potential landslide hazard areas. Add King County iMap as source for landslide hazard areas.	Inconsistent with BAS and inconsistent with Watershed Plan	
	Erosion hazard areas soils are not consistent with BAS.	The list of soils in the code are not found in Duvall. This type of hazard is generally not equated with other geologic hazards. The current language is not necessary because these types of soil erosion hazard issues are not applicable to Duvall. Soil Erosion issues would be more appropriate in cut and fill and/ or storm water management chapters.	Remove erosion hazard areas and incorporate applicable stream erosion into landslide section.	Erosion issues are generally well covered in stormwater plans and fill and grade permitting.	
	Seismic hazard areas are very broad and do not incorporate applicable BAS			Soil erosion not hazardous in this context for the city of Duvall.	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.420 General Standards	The general standards section is generally consistent with BAS and guidance but a some areas should be clarified and reorganized for consistency with specific types of geologic hazardous areas and for clarity.	Some of the standards in the general standards may be better placed within specific geologic hazard areas sections.	Modify section for consistency for each type of hazard.	Allows for consideration of particularly seismic sensitive locations and locating critical facilities.	

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14.42.420A	Moderately inconsistent with BAS	Clarity on what "alterations" means	Clarify alterations and provide specifics		
14.42.420 B	Moderately inconsistent with BAS	Clarity on types of geologic hazard			
14.42.430 Landslide Hazard Area Standards	Moderately inconsistent with BAS	Follow recommendations under SA-7 in the City of Duvall Watershed plan.	Add sentence about tree retention consistent with SA-7. Stress that the preferred approach to landslide hazard areas in avoidance.	Mature trees are important for slope stability. Avoidance is the most effective way to reduce risk.	
	Inconsistent with BAS	Accurate factor of safety analysis may be burdensome and often does not accurately estimate landslide susceptibility. It is more much effective when dealing with engineering structures that do not have the same heterogeneities that are common in entirely natural geologic scenarios. Minimum buffers are arbitrary and often do not reflect the	Only require factor of safety analysis for sites requiring slope mitigation or engineering solutions. Buffer sizes are at the discretion of the public works director under		

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.440 Erosion Hazard Areas Standards	Inconsistent with BAS	Current standards are for soil erosion hazards not applicable to Duvall. Based on old guidance and does not consider stormwater regulations,	Remove all current standards that refer to soil erosion hazards.		
14.42.500 Flood Hazard Areas					
14.42.500 Designation and Mapping	Could be revised to be more consistent.	Section designates "Flood Hazard Areas" for protection, but is not entirely consistent with GMA language (Frequently Flooded Areas)	Consider revising Section title and subsequent language to "Frequently Flooded Areas".	Internal consistency.	
Floodplain Regulations are provided in DMC Chapter 14.84	Could be revised to be more consistent with BAS and GMA.	DMC 14.84 does not require compensatory floodplain storage for riverine floodplains (except within floodways). That said, the updated SMP (to be effective by June 2017) does require compensatory storage	Consider requiring compensatory storage for all permitted floodplain fill within DMC Chapter 14.42 or the referenced section of DMC 14.84.	NMF5, 2009; PSP, 2009; FEMA, 2013; Ecology, 2015	

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		<p>throughout the large majority of the floodplain.</p> <p>Recent BAS has highlighted the importance of floodplains for providing habitat to numerous fish and wildlife species, including anadromous salmon. FEMA Region X now requires all floodplain development within the Puget Sound to assess and avoid potential impacts to Endangered Species Act-listed salmon and their habitat.</p>	<p>Updated SMP will provide adequate environmental protection for activities occurring within floodplain areas. That said, to clearly define requirements and expectations for meeting FEMA Region X direction for protection of ESA-listed species and habitat, consider designating flood hazard areas/frequently flooded areas as a “fish and wildlife habitat conservation area” under 14.42.300. Consider including criteria for habitat assessment for floodplain development.</p>	<p>PSP, 2009; FEMA, 2013 Opportunity to strengthen consistency with FEMA Region X’s Floodplain Habitat Assessment and Mitigation Guidance.</p>	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.600-620 Critical Aquifer Recharge Areas (CARAs)					
14.42.600 Designation and Mapping	Inconsistent with BAS.	Code references outdated Ecology guidance document. Section does not reference City mapping of CARAs.	Revise to include updated guidance: <i>Critical Aquifer Recharge Areas – Guidance Document, January 2005, Publication #05-10-028.</i> Revise section to include sensitive areas inventory map of CARAs.	Ecology, 2005 Internal consistency.	
14.42.610 Standards	Could be revised to be more consistent with BAS.	Code does not include provisions prohibiting activities that are not connected to an available sanitary sewer system.	Revise to include provisions prohibiting these activities from CARAs associated with sole source aquifers.	Ecology, 2005	
14.42.620 Review	Could be revised for clarity. Inconsistent with BAS and GMA.	Section includes provisions for specific activity performance standards mixed with review requirements. Code does not include provisions requiring sensitive area studies be prepared by a qualified professional.	Consider separating performance standards and review requirements by adding a new section for 'Performance Standards, specific uses', see suggestion below. Revise to include provisions be prepared by a qualified professional or reference DMC 14.42.060(A)(5).	Clarity and ease-of-use. Internal consistency.	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.620 Review (B)	Could be revised to be more consistent with BAS.	Code does not include requiring hydrogeological assessments specific to proposed activity types.	Consider requiring two levels of hydrogeological assessment for the sensitive area study of CARAs; one to apply generally and an additional level that applies to specific activities (use of hazardous substances, use of injection wells, etc.).	Ecology, 2005	
14.42.6XX (NEW) Activities Allowed	NA	NA	Consider adding a new section for 'Allowed Activities' within CARAs that do not require a sensitive areas study. ESA can provide example language.	Consistency with Ecology guidance (2005)	
14.42.6XX (NEW) Performance standards, specific uses	NA	NA	Consider adding a new section for 'Performance standards, specific uses'; this could include provisions for storage tanks, vehicle repair and servicing, and residential pesticide use. ESA can provide example language.	Ecology, 2005	
14.42.700 Definitions					
14.42.700 Definitions	Could be revised to be more consistent.	No definition provided for "sensitive areas"	Consider providing a definition for "sensitive areas."	Bunten et al., 2012	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.700 (17) Definitions	Could be revised to be more consistent	The definition of "buffer" provided does not exclude legally established, functionally isolated areas (for example, legally established roads/impervious surfaces or areas on the opposite side of legally established roads.	Revise definition to be more consistent with definition included in guidance.	Bunten et al., 2012; also provides clarity to applicants and City staff.	
14.42.700 (20) Definitions	Inconsistent with BAS.	Current definition of "compensatory mitigation" lacks terminology of Environmental Protection Agency (EPA) and US Army Corps of Engineers (Corps) definition.	Revise to be similar to the EPA and Corps definition and reference the 2008 joint rule on Compensatory Mitigation for Losses of Aquatic Resources. <i>33 CFR 332.2: "Compensatory mitigation means restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved."</i>	Inconsistent with BAS and state and federal guidance. <i>CFR Title 33 – Navigation and Navigable Waters Part 332 Compensatory Mitigation for Losses of Aquatic Resources (July 1, 2011)</i>	

Existing Provision DMC Chapter	Degree of Consistency with BAS & Guidance	Reason for Consistency/ Lack of Consistency	Suggested Change	Rationale / Basis	Advisory Committee Review Comments
14.42.700 (29) Definitions	Inconsistent with GMA.	The definition of "delineation" references outdated wetland delineation manual.	Update reference to new wetland delineation manual. http://water.epa.gov/lawsregs/guidance/wetlands/wetlandsm/itigation_index.cfm	WAC 173-22-035-020	
14.42.700 (65) Definitions	Inconsistent with GMA.	Current definition of "hydric soil" references outdated wetland delineation manual.	Update reference to new wetland delineation manual.	WAC 173-22-035-020	
14.42.700 (71) Definitions	Could be revised to be more consistent with BAS.	The definition of "in-kind compensation" is fairly general and leaves room for interpretation, consider revising to be more specific.	Consider revising to something similar to Ecology (2006): "In-kind mitigation is compensatory mitigation that involves the same wetland type and functions as the lost or degraded wetland, for example, the same hydrogeomorphic (HGM) subclass (e.g., riverine flow-through, depressional outflow, flats, etc.), plant community, and Cowardin class (e.g., palustrine emergent, palustrine forested or estuarine wetlands)."	Improve clarity. Wetland Mitigation in Washington State – Part I: Agency Policies and Guidance. (Ecology, Corps, EPA, 2006)	
14.42.700 (134) Definitions	Inconsistent with GMA.	The definition of "wetland delineation" references outdated wetland delineation manual.	Update reference to new wetland delineation manual.	WAC 173-22-035-020	

<p>Existing Provision DMC Chapter</p> <p>14.42.700 Definitions (new)</p>	<p>Degree of Consistency with BAS & Guidance</p> <p>NA</p>	<p>Reason for Consistency/ Lack of Consistency</p> <p>Consider adding new definitions for reasonable use exception and salmonid.</p>	<p>Suggested Change</p> <p>See CTED example code definition for "reasonable use" and "salmonid."</p>	<p>Rationale / Basis</p> <p>Improve clarity. CTED, 2003</p>	<p>Advisory Committee Review Comments</p>
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Footnotes

¹*Example language for DMC 14.42.050(F) (Bunten et al., 2012)*

Removal of invasive plant species shall be restricted to hand removal unless permits or approval from the appropriate regulatory agencies have been obtained for approved biological or chemical treatments or other removal techniques. All removed plant material shall be taken away from the site and appropriately disposed of. Plants that appear on the Washington State Noxious Weed Control Board list of noxious weeds must be handled and disposed of according to a noxious weed control plan appropriate to that species.

²*Example language for DMC 14.42.140 Enforcement (CTED, 2007)*

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

B. Requirement for Restoration Plan. All development work shall remain stopped until a restoration plan is prepared and approved by City. Such a plan shall be prepared by a qualified professional using the best available science and shall describe how the actions proposed meet the minimum requirements described in Subsection (C). The [director] shall, at the violator's expense, seek expert advice in determining the adequacy of the plan. Inadequate plans shall be returned to the applicant or violator for revision and resubmittal.

C. Minimum Performance Standards for Restoration

1. For alterations to critical aquifer recharge areas, frequently flooded areas, wetlands, and habitat conservation areas, the following minimum performance standards shall be met for the restoration of a critical area, provided that if the violator can demonstrate that greater functional and habitat values can be obtained, these standards may be modified:
 - a. The historic structural and functional values shall be restored, including water quality and habitat functions;
 - b. The historic soil types and configuration shall be replicated;
 - c. The critical area and buffers shall be replanted with native vegetation that replicates the vegetation historically found on the site in species types, sizes, and densities. The historic functions and values should be replicated at the location of the alteration; and
 - d. Information demonstrating compliance with the requirements in Section X (Mitigation Plan Requirements) shall be submitted to the [director].
 2. For alterations to flood and geological hazards, the following minimum performance standards shall be met for the restoration of a critical area, provided that, if the violator can demonstrate that greater safety can be obtained, these standards may be modified:
 - a. The hazard shall be reduced to a level equal to, or less than, the pre-development hazard;
 - b. Any risk of personal injury resulting from the alteration shall be eliminated or minimized; and
 - c. The hazard area and buffers shall be replanted with native vegetation sufficient to minimize the hazard.
- D. Site Investigations. The [director] is authorized to make site inspections and take such actions as are necessary to enforce this Title. The [director] shall present proper credentials and make a reasonable effort to contact any property owner before entering onto private property.
- E. Penalties. Any person, party, firm, corporation, or other legal entity convicted of violating any of the provisions of this Title shall be guilty of a misdemeanor. Each day or portion of a day during which a violation of this Title is committed or continued shall constitute a separate offense. Any development carried out contrary to the provisions of this Title shall constitute a public nuisance and may be enjoined as provided by the statutes of the state of Washington. The City may levy civil penalties against any person, party, firm, corporation, or other legal entity for violation of any of the provisions of this Title. The civil penalty shall be assessed at a maximum rate of _____ dollars per day per violation. *(The amount of the penalty needs to be decided locally and should be consistent with other adopted civil penalties. Commonly, the penalty is \$1,000 per day per violation)*

³*Definition from Ecology guidance (Bunten et al., 2012)DMC 14.200(A)* : “wetland” or “wetlands” means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas created to mitigate conversion of wetlands.

⁴Example language for DMC 14.42.240 (H) Wetland Mitigation (Corps, 2008; Ecology et al., 2012)

Wetland Mitigation Banks.

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

In-Lieu Fee. To aid in the implementation of off-site mitigation, the City may develop an in-lieu fee program. This program shall be developed and approved through a public process and be consistent with federal rules, state policy on in-lieu fee mitigation, and state water quality regulations. An approved in-lieu-fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor, a governmental or non-profit natural resource management entity. Credits from an approved in-lieu-fee program may be used when paragraphs 1-6 below apply:

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

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

Chapter 14.14 Multi-Family Residential (R12) Zoning District

- 14.14.010 Purpose.**
- 14.14.020 Permitted uses.**
- 14.14.030 Accessory uses.**
- 14.14.040 Conditional uses.**
- 14.14.050 R-12 to R-4 Transition**
- 14.14.060 Development standards.**

14.14.010 Purpose.

The purposes of the R12 zoning district are to:

- A. Provide for neighborhoods of compact single-family, multi-family and cottage style dwelling units at a density of 12 units per gross acre and consistent with design guidelines;
- B. Create attractive and livable neighborhood environments for family life; allow for the development of affordable housing; provide for public amenities such as passive and active recreation areas, open space and trails;
- C. Implement provisions of the Comprehensive Plan related to multi-family residential areas and affordable housing.
- D. Provide for the development of housing types, forms and densities that are an alternative to conventional single-family detached development patterns, provide an alternative to traditional single-family detached and attached housing products, and to promote attractive, high-quality residential development by allowing a greater degree of flexibility in the development standards.
- E. To provide for the integration of new development into the existing community while protecting and preserving the character of the surrounding neighborhood.
- F. Encourage innovative neighborhood design.

14.14.020 Permitted uses.

Permitted uses in the R12 zoning district are:

- A. Adult family home
- B. Cottage or other innovative housing development
- C. Carriage housing
- D. Dwelling unit, attached
- E. Dwelling unit, detached
- F. Dwelling unit, multi-family
- G. Recreational trail, non-motorized
- H. Pea-patch's
- I. Park, public or private
- J. Senior citizen assisted living facility

14.14.030 Accessory uses.

Accessory uses in the R12 zoning district are permitted if they are incidental to a primary dwelling unit. Structures housing accessory uses shall not be allowed in the front yard. Such uses are:

- A. Family day care
- B. Home occupation/industry (See DMC 14.54)
- C. On-site rental office
- D. Pools

- E. Garages
- F. Antennae or satellite dish for private telecommunication services
- G. Storage of yard maintenance equipment for private use
- H. Other accessory use or structure which is subordinate and incidental to a principally permitted use, as determined by the director.
- I. Accessory uses permitted in the R-12 zone are allowed if they are incidental to a dwelling unit on the same lot or an adjacent lot owned by the same property owner and established solely for the property owner's use. Sale of either lot individually shall make the accessory use of the lot void.

14.14.040 Conditional uses.

Uses permitted in the R12 zoning district subject to conditional use permit are:

- A. Community residential facility
- B. Bed and breakfast
- C. Cultural facilities including libraries, museums, arboretums, conference centers, community centers
- D. Governmental services (police, court, fire, city hall or similar local government offices not including public works yard or sewer treatment plant)
- E. K-12 schools, public or private
- F. Religious institutions
- G. Subregional utility substations
- H. Wireless facilities attached to an existing building or structure, camouflaged (See DMC 14.56)

14.14.050 R-12 to R-4 Transition.

To provide for the integration of new development into the existing community while protecting and preserving the character of the surrounding R-4 neighborhood. New developments in the R12 zone shall provide the following:

- A. A 25 foot building setback adjacent to developed R-4 properties;
- B. Access from an internal road network;
- C. Transition of densities from existing R4 neighborhoods.

14.14.60 Development standards.

All development within the R-12 zone district shall be developed in accordance with a master development plan through the site plan review process established in DMC 14.08. The plan must demonstrate that the site is being developed in an integrated and cohesive manner, and include elements such as alley loaded residential units, pedestrian connections, and usable open space in the residential portion, and pedestrian scaled buildings, plazas, and outdoor seating in the commercial portion of the site.

Table 14.14.060.A Minimum Lot Area and Site Requirements.

Minimum density	8 dwelling units per gross useable acre ⁽¹⁾ A minimum of 20% of units shall be attached
Maximum density	12 dwelling units per gross useable acre ⁽¹⁾ A minimum of 20% of units shall be attached
Minimum lot area in square feet	0 for Multi-family units 2,500 square foot average for detached units
Minimum street setback	10 feet from back of sidewalk. ⁽²⁾
Minimum interior setback	0/5 feet for attached dwelling units; 5/5 feet for single family detached dwelling units ⁽⁸⁾
Rear yard setback	15 feet ^{(3) (8)}
R-12 to R-4 Transition building setback	25 feet ^{(4) (8)}
Alley and tract setback	5 feet ⁽⁵⁾
Minimum lot width	20 feet for attached units 30 feet for detached units
Maximum building coverage	60%
Maximum impervious surface	75%
Maximum impervious coverage – Binding Site Plan ^(*)	75% ⁽⁹⁾
Maximum height	35 feet ^{(6) (7)}

(1) See DMC 14.42.090 Density Credit

(2) Porches or stoops may project up to two feet into the required front yard setback.

(3) Rear yard setback does not apply to alley loaded lots.

(4) See DMC 14.14.050

(5) The setback is intended for 16-20 alleys and tracts.

(6) Three floors allowed.

(7) See DMC 14.64 for building height calculations.

(8) Projects using the binding site plan process for residential units shall meet the same setbacks.

(9) Maximum impervious surface (Gross area minus sensitive areas)

(*) Subtract right-of-way. Example: 100,000 square feet – 20,000 square feet of ROW = 80,000 square feet X 75% = 60,000 square feet of impervious coverage allowed.

B. See additional development standards in accordance with DMC Chapter 14.

Chapter 14.16 – MULTIFAMILY RESIDENTIAL (R20) ZONING DISTRICT

Sections:

<u>14.16.010</u>	Purpose.
<u>14.16.020</u>	Permitted uses.
<u>14.16.030</u>	Accessory uses.
<u>14.16.040</u>	Conditional uses.
<u>14.16.050</u>	Development standards.

14.16.010 - Purpose.

The purpose of the R20 zoning district is to:

- A. Provide an alternative to conventional single family housing types, forms and densities to address the rising cost of housing in Duvall, encourage the development of workforce housing, and provide more rental opportunities;
- B. Promote attractive, high quality, and high density development consistent with design guidelines.
- C. Encourage in-fill to accommodate existing and future population growth.

14.16.020 - Permitted uses.

Permitted uses in the R20 zoning district are:

- A. Adult family home;
- B. Assisted living facility;
- C. Carriage housing;
- D. Cottage or other innovative housing development;
- E. Day care facility
- F. Dwelling unit, attached;
- G. Dwelling unit, detached;
- H. Dwelling unit, multifamily;
- I. Pea-patches/Community Gardens;
- J. Work force housing;
- K. Recreational trail, nonmotorized;
- L. Park, public or private.

14.16.030 - Accessory uses.

Accessory uses in the R20 zoning district are permitted if they are incidental to a primary dwelling unit on the same lot or an adjacent lot owned by the same property owner and established solely for the property owner's use. Sale of either lot individually shall make the accessory use of the lot void. Detached structures accommodating accessory uses shall not be allowed in the front yard.

Accessory uses in the R20 zoning district are as follows:

- A. Accessory Buildings (community room, cabana, etc.)
- B. Family day care;
- C. Home occupation (see DMC Chapter 14.54);
- D. On-site rental office;
- E. Pools;
- F. Garages;
- G. Antennae or satellite dish for private telecommunication services;
- H. Storage sheds;
- I. Other accessory use or structure which is subordinate and incidental to a principally permitted use, as determined by the Director.

14.16.040 - Conditional uses.

Uses permitted in the R20 zoning district subject to conditional use permit are:

- A. Community residential facility;
- B. Bed and breakfast;
- C. Cultural facilities, including libraries, museums, arboretums, conference centers, community centers;
- D. Governmental services (police, court, fire, City Hall or similar local government offices not including public works yard or sewer treatment plant);
- E. K-12 schools, public or private;
- F. Religious institutions;
- G. Subregional utility substations;
- H. Wireless facilities attached to an existing building or structure (see DMC Chapter 14.56).

14.16.050 - Development standards.

- A. The following density and dimension requirements apply to the R20 zone.

Table 14.16.050A Density and Dimension Requirements

Minimum density	14 dwelling units per gross acre
	A minimum of 60% of units shall be attached A minimum of 20% of units shall be attached if cottage units
Maximum density	20 dwelling units per gross acre
	A minimum of 50% of units shall be attached
Minimum lot area in square feet	0 for multifamily units; 2,250 average for detached units
Minimum street setback	10 feet from back of sidewalk ⁽¹⁾
Minimum interior setback	0/5 feet for attached dwelling units; 5/5 feet for single-family detached dwelling units
Rear yard setback	15 feet ⁽²⁾
Alley and tract setback	5 feet ⁽³⁾
Minimum lot width	20 feet for attached units; 25 feet for detached units
Maximum building coverage	75%
Maximum impervious surface	85% ⁽⁶⁾
Maximum height	35 feet ^(4,5)

1. Porches or stoops may project up to two feet into the required front yard setback.
2. Rear yard setback does not apply to alley loaded lots.
3. The setback is intended for sixteen (16) to twenty (20) alleys and tracts.
4. Three floors allowed.
5. See DMC Chapter 14.64 for building height calculations.
6. Maximum impervious surface (Gross area minus sensitive areas)

- B. DMC 14.34 Design Guidelines, DMC 14.64 Additional Development Standards and Public Works Design Standards also apply to the R20 zone.
- C. All development within the R20 zone district shall be developed in accordance with a master development plan through the site plan review process established in DMC Chapter 14.08. The plan must demonstrate that the site is being developed in an integrated and cohesive manner, and include elements such as alley loaded residential units, pedestrian connections, and usable open space in the residential portions, and pedestrian scaled buildings, plazas, and outdoor seating in any commercial portions of the site.

Chapter 14.18 Mixed Use 12 (MU12) Zoning District

- 14.18.010 Purpose.
- 14.18.020 Permitted uses.
- 14.18.030 Accessory uses.
- 14.18.040 Conditional uses.
- 14.18.050 R12 to R4 – R6 transition.
- 14.18.060 Timing of commercial development.
- 14.18.070 Master Development Plan.
- 14.18.080 Development standards.

14.18.010 Purpose.

The purposes of the Mixed Use 12 (MU12) zoning district are to:

- A. Provide land for neighborhood oriented retail, service, business, office, and entertainment uses in mixed use developments which complement, enhance, and support residential and other land use provisions of the Comprehensive Plan;
- B. Provide economic, employment, and housing opportunities in mixed use developments that incorporate traditional pedestrian-oriented development patterns and elements, including building location, architectural design, construction materials, and site features that are harmonious with Duvall's character;
- C. Ensure that site requirements and amenities, including vehicle, pedestrian, and bicycle circulation and parking, landscaping, sensitive areas protection, lighting, public areas, utilities, and other necessary and desirable elements are integral parts of all mixed use projects.
- D. Ensure that the commercial and residential areas are planned concurrently and are complementary to each other.
- E. Provide for the development of housing types, forms and densities that are an alternative to conventional single-family detached development patterns, provide an alternative to traditional single-family detached and attached housing, and to promote attractive, high-quality residential development by allowing a greater degree of flexibility in design, development standards and practices.
- F. Provide for the integration of new development into the existing community while protecting and preserving the character of the surrounding neighborhood.
- G. Encourage innovative neighborhood design.
- H. Ensure that the commercial and residential portions of the site develop in a coordinated manner.
- I. Provide for the coordinated development of the properties at the intersection of 3rd Avenue NE and NE 143rd Place to create a neighborhood commercial district to serve future residential development.

14.18.020 Permitted uses.

Each building in the MU12 zoning district shall be limited to 45,000 square feet unless a conditional use permit in accordance with DMC 14.68 has been granted.

Allowed uses in the MU12 zoning district are:

- A. Adult family home in the portion of the project designated for residential use

- B. Animal service facilities, including veterinary clinics, grooming services
- C. Auto parts stores
- D. Civic uses such as senior and youth centers, and libraries
- E. Cultural facilities including movie or production theaters, libraries, museums, arboretums, conference centers, community centers
- F. Day care facilities, including family day care in a residential unit
- G. Dwelling units on upper floors above ground floor commercial
- H. Dwelling units, attached or detached, at a maximum of 12 units per acre for the portion of the site not containing commercial development. A minimum of 60 percent of the units in the residential portion of a mixed use development shall be attached. Densities in excess of 12 units per acre are permitted in the commercial portion of a site if they are constructed as upper story units.
- I. Eating and drinking establishments without drive-thrus, including restaurants, pubs, wine bars, bars, coffee shops, bakeries
- J. Equipment rental (e.g., recreational), no outside storage
- K. General business and professional offices, including financial institutions, offices for off-site manufacturing uses, attorney, real estate, insurance, accounting, engineering, architectural, planning, science, management, public relations
- L. Grocery stores (up to 20,000 square feet)
- M. Indoor sports facilities including bowling centers, fitness centers, sports clubs, swimming pools
- N. Lodging facilities, including hotels, motels, bed & breakfasts
- O. Medical and dental facilities, including offices/patient clinics, hospitals, nursing and personal care facilities, medical/dental labs, medical supply stores
- P. Parks, public or private
- Q. Pea patch farms
- R. Recreational trails, non-motorized
- S. Personal services, including beauty salons, barber shops, tanning salons, dry cleaning, upholstery and rug cleaning, coin operated laundries, photography studios, tax preparation, copying, printing and mailing services, travel agencies
- T. Governmental services (court, police facility, fire facility, city hall or similar local government not including public works yards or sewer treatment plants)
- U. Religious institutions (not including K-12 schools); the commercial requirement is not required for religious institutions
- V. Repair shops, including bicycles, electronics, jewelry (no heavy machinery or auto repair)
- W. Retail sales, including of apparel and accessories, home furnishings and furniture, antiques and second hand goods, sporting goods, books, stationary, videos, art and frame supplies, jewelry, hobby, toys and games, photography and electronic equipment, tobacco, wine and liquor, florists, department, drug and variety stores; fabric, appliances
- X. Senior citizen assisted living facilities
- Y. Social service facilities, including social service offices, adult and child day care, residential care facilities
- Z. Specialized schools within an enclosed building, including the teaching of art, dance, music, cooking, yoga, driving, pet obedience training, massage, religion, vocational
- AA. Specialty light industrial / manufacturing < 7,500 square feet
- BB. Wireless facilities attached to an existing building or structure, camouflaged (see DMC 14.56).

14.18.030 Accessory uses.

Accessory on-site uses in the MU12 zoning district are:

14.18 Mixed Use 12 (MU12) Zoning District

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- A. Antennae or satellite dish for private telecommunication services
- B. Drive thrus for banks, pharmacies, and dry cleaners, except that such use shall not be permitted between a building and street.
- C. Employee recreation facility and play area
- D. Employee daycare facility
- E. Employee café or cafeteria operated in conjunction with a principally permitted use
- F. Family day care
- G. Food and/or espresso cart as an accessory to a permitted use, must be directly affiliated with an existing use and not located in public right-of-way
- H. Home occupation/industry in a residential unit (See 14.54)
- I. Pea-patch farms,
- J. Sidewalk café (See 14.64.230)
- K. Other accessory use or structure which is subordinate and incidental to a principally permitted use, as determined by the Director.

14.18.040 Conditional uses.

Uses permitted in the MU12 zoning district subject to conditional use permit are:

- A. Buildings greater than 45,000 square feet
- B. Eating and drinking establishments with drive-thrus, including restaurants, coffee shops,
- C. Grocery stores up to 30,000; square feet
- D. Public or private K-12 schools
- E. Public works yard
- F. Retail sales of building, hardware and garden
- G. Specialty light industrial/manufacturing > 7,500 square feet
- H. Subregional utility
- I. Transit park and ride lot

14.18.050 R-12 to R4-R6 Transition.

To provide for the integration of new development into the existing community and to protect the character of surrounding R-4 and R-6 neighborhoods, new developments in the MU12 zone shall provide the following:

- A. A 25 foot building setback adjacent to developed R-4 and R-6 properties; and
- B. Access from an internal road network; and
- C. Transition of densities from existing R4 and R-6 neighborhoods.

14.18.060 Timing of Commercial Development.

The commercial and residential portions of a mixed use site shall be constructed concurrently unless the developer establishes a phasing plan through a development agreement as follows: construction shall commence within five years of entitlement of the residential portion and completed within ten years unless the applicant demonstrates that market conditions warrant an extended time period to ensure successful commercial development. If the commercial portion of the site is deferred, the applicant shall grade and landscape the site in accordance with the City's landscape standards.

14.18.070 Master Development Plan.

All development within the MU 12 zone shall be developed in accordance with a master development plan through the site plan review process established in DMC 14.08. The plan must demonstrate that the site is being developed in an integrated and cohesive manner, and include elements such as alley loaded residential units, pedestrian connections, and usable open space in the residential portion, and pedestrian scaled buildings, plazas, and outdoor seating in the commercial portion of the site.

14.18.080 Development Standards.

A. General Provisions

1. On MU12 lots, a minimum of 25 percent of the usable lot area shall be developed as ground floor commercial. The ground floor commercial shall be developed at a minimum floor area ratio of .20 based on the gross lot area of the commercial portion of a mixed use site.
2. A minimum of 50 percent of the street frontage of a mixed use site shall be dedicated to ground floor commercial uses.

Table 14.18.080.A Minimum Lot Area and Site Requirements.

Minimum density	8 units per gross usable acre for the non-commercial portion of the property
Maximum density	12 units per gross usable acre for the non-commercial portion of the property
Unit Type Requirement	A minimum of 20% of the non-commercial portion of the property shall be attached residential units
Minimum lot area in square feet	2,500 square feet commercial; 0 for Multi-family units; 2,500 square feet average for detached units
Minimum street setback	10 feet for residential portion of property ⁽¹⁾⁽⁵⁾ 0-20 feet for commercial portion of property (see DMC 14.34, Design Guidelines)
Minimum interior setback	0/5 feet if attached; 5/5 feet if detached; see 14.38 for landscape perimeter requirements ⁽⁵⁾
Rear yard setback (Residential)	15 feet ⁽⁵⁾⁽⁶⁾
Minimum setback between residential and commercial portion of site	10 feet
MU12 to R4-R6 Transition building setback	25 feet ⁽²⁾⁽⁵⁾
Minimum lot width	– 20 feet for attached units and 30 feet for detached units
Maximum impervious surface	75% for residential area ⁽⁷⁾ ; 85% for commercial area ⁽⁷⁾
Maximum impervious coverage – Binding Site Plan ^(*)	75% for residential area; 85% for commercial area
Maximum building coverage	60% for residential area
Maximum height	35 feet for residential ⁽³⁾⁽⁴⁾ 45 feet for commercial, retail and upper story residential ⁽³⁾⁽⁴⁾

(1) Porches on non-habitable entry features may project up to 2 feet into the required front yard setback. This provision provides incentives for porches without taking up building envelope space for the dwelling unit.

(2) See DMC 14.18.050

(3) Three floors allowed

(4) See DMC 14.64

(5) Projects using the binding site plan process for residential units shall meet the same setbacks.

(6) Rear yard setback does not apply to alley loaded lots.

(7) Maximum impervious surface (Gross area minus sensitive areas)

(*) Subtract right-of-way and sensitive areas. Example: 100,000 square feet – 20,000 square feet of ROW = 80,000 square feet X 75% = 60,000 square feet of impervious coverage allowed.

B. See additional development standards in accordance with DMC Chapter 14.

Chapter 14.19 Mixed Use Institutional (MU-I) Zoning District

- 14.19.010 Purpose.**
- 14.19.020 Permitted uses.**
- 14.19.030 Accessory uses.**
- 14.19.040 Conditional uses.**
- 14.19.050 Development standards.**

14.19.010 Purpose.

The purposes of the Mixed Use Institutional (MU -I) zoning district are to:

- A. Provide educational, economic, employment, and upper story housing opportunities in developments that incorporate traditional pedestrian-oriented development patterns and elements, including building location, architectural design, construction materials, and site features that are harmonious with Duvall's character;
- B. Provide locations for institutional uses, such as city facilities, libraries, parks and public and private colleges;
- C. Provide locations for institutional uses, such as city facilities, libraries, parks and public and private colleges;
- D. Provide economic, employment, and upper level housing opportunities in developments that incorporate traditional pedestrian-oriented development patterns and elements, including building location, architectural design, construction materials, and site features that are harmonious with Duvall's character;
- E. Ensure that site requirements and amenities, including vehicle, pedestrian, and bicycle circulation and parking, landscaping, usable open space, sensitive areas protection, lighting, public areas, utilities, and other necessary and desirable elements are integral parts of all mixed use projects.

14.19.020 Permitted uses.

Buildings in the MU-I zoning district are limited to 65,000 square feet as a permitted use. Buildings greater than 65,000 square feet are subject to a conditional use permit.

- A. Animal service facilities, including veterinary clinics, grooming services, doggy day cares (all facilities indoor)
- B. Cultural facilities including movie or production theaters, libraries, museums, arboretums, conference centers, community centers
- C. Day care/Preschool facilities
- D. Dwelling units on upper floors above commercial on ground floor
- E. Eating and drinking establishments without drive-thrus, including restaurants, cafes, pubs, wine bars, bars, coffee shops, bakeries
- F. General business and professional offices, including financial institutions, offices for off-site manufacturing and construction uses, attorney, real estate, insurance, accounting, engineering, architectural, planning, science, management, public relations
- G. Grocery stores (up to 20,000 square feet)
- H. Flex/Tech; limited to 15,000 square feet per use for manufacturing, wholesale, retail, and office uses in an enclosed building with no noise or odor impacts,
- I. Indoor recreation facilities including bowling centers, fitness centers, sports clubs, swimming pools, gymnastics centers
- J. Public or private two or four year colleges

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- K. Lodging facilities, including hotels, motels, bed & breakfasts
- L. Medical and dental facilities, including offices/patient clinics, hospitals, nursing and personal care facilities, medical/dental labs, medical supply stores
- M. Parks, public or private
- N. Recreational trails, non-motorized
- O. Personal services, including beauty and nail salons, barber shops, tanning salons, dry cleaning, coin operated laundries, photography studios, tax preparation, copying, printing and mailing services, travel agencies
- P. Governmental services (court, police facility, fire facility, city hall or similar local government not including public works yards or sewer treatment plants)
- Q. Religious institutions (not including K-12 schools),
- R. Repair shops, including bicycles, electronics, jewelry
- S. Retail sales, including of apparel and accessories, auto parts, home furnishings and furniture, antiques and second hand goods, sporting goods, books, stationary, videos, art and frame supplies, jewelry, hobby, toys and games, photography and electronic equipment, tobacco, wine and liquor, florists, department, drug and variety stores; fabric, appliances
- T. Schools, including public and private K-12 schools and colleges
- U. Senior citizen assisted living facility
- V. Social service facilities, including social service offices, adult and child day care, residential care facilities
- W. Specialized schools within an enclosed building, including the teaching of art, dance, music, cooking, yoga, driving, pet obedience training, massage, religion, vocational
- X. Wholesale businesses when accompanied by on site retail showroom and sales outlet (retail space shall be a minimum of 25% of gross floor area).
- Y. Wireless facilities attached to an existing building or structure, camouflaged (see DMC 14.56).

14.19.030 Accessory uses.

Accessory on-site uses in the MU – I zoning district are:

- A. Antennae or satellite dish for private telecommunication services
- B. Drive thrus for banks, pharmacies, and dry cleaners
- C. Employee recreation facility and play area
- D. Employee daycare facility
- E. Employee café or cafeteria operated in conjunction with a principally permitted use
- F. Family day care
- G. Food and/or espresso cart as an accessory to a permitted use, must be directly affiliated with an existing use and not located in public right-of-way
- H. Home occupation/industry (See 14.54)
- I. Private gardens, pea-patch farms, fish or wildlife ponds
- J. Sidewalk café (See 14.64.230)
- K. Other accessory use or structure which is subordinate and incidental to a principally permitted use, as determined by the Director.

14.19.040 Conditional uses.

Uses permitted in the MU-I zoning district subject to conditional use permit are:

- A. Buildings greater than 65,000 square feet
- B. Bulk retail
- C. Flex/Tech Uses greater than 15,000 square feet per business
- D. Grocery stores greater than 30,000 square feet maximum
- E. Private colleges

- F. Public or private K-12 schools
- G. Retail sales of building, hardware and garden supplies
- H. Subregional utility
- I. Transit park and ride lot

14.19.050 Development standards.

Table 14.19.050.A Minimum Lot Area and Site Requirements.

Minimum density	NA, upper story residential only
Maximum density	Upper story residential only; limited by building height, parking and other site requirements.
Minimum lot area in square feet	0 square feet
Minimum street setback	0-20 feet ⁽¹⁾
Minimum interior setback	5 feet
Minimum lot width	25 feet
Maximum impervious surface	85% ⁽⁵⁾
Maximum height	50 feet ^{(3) (4)}

- (1) See DMC 14.34, Design Guidelines
- (2) See DMC 14.38.100, Landscape Standards
- (3) See DMC 14.64 Additional Development Standards for height calculations
- (4) Three floors allowed on the uphill side and four floors allowed on the downhill side
- (5) Maximum impervious surface (Gross area minus sensitive areas)

- B. Additional Development Standards in the Duvall Municipal Code and Duvall Public Works Design Standards

Chapter 14.20 Midtown (MT) Zoning District

- 14.20.010 Purpose.**
- 14.20.020 Permitted uses.**
- 14.20.030 Accessory uses.**
- 14.20.040 Conditional uses.**
- 14.20.050 Development standards.**

14.20.010 Purpose.

The purposes of the Midtown (MT) zoning district are to:

- A. Provide transition between Old Town and Commercial;
- B. Provide land for retail, service, business, office, and entertainment uses which complement, enhance, and support residential and other land use provisions of the Comprehensive Plan
- C. Provide economic, employment, and housing opportunities in developments that incorporate traditional development patterns and elements, including building location, architectural design, construction materials, and site design that are in keeping with Duvall's character;
- D. Ensure that site requirements and amenities, including vehicle, pedestrian, and bicycle circulation and parking, landscaping, sensitive areas protection, lighting, public areas, utilities, and other necessary and desirable elements are integral parts of all commercial projects.
- E. Ensure that future mixed-use development complements and enhances Old Town and adjacent residential areas; and
- F. Ensure that development is in keeping with the Duvall City Wide Visioning Plan and the Duvall Downtown Sub Area Plan.

14.20.020 Permitted uses.

All buildings in the Midtown zoning district shall be limited to 35,000 square feet unless a conditional use permit in accordance with DMC 14.68 has been granted. Permitted uses in the MT zoning district are:

- A. Adult family homes
- B. Auto parts stores
- C. Cultural facilities including movie or production theaters, libraries, museums, arboretums, conference centers, community centers
- D. Day care facilities
- E. Dwelling units on upper floors
- F. Eating and drinking establishments with no drive-thrus, including restaurants, cafes, pubs, bars, coffee shops, bakeries
- G. General business and professional offices, including financial institutions, offices for off-site manufacturing uses, attorney, real estate, insurance, accounting, engineering, architectural, planning, science, management, public relations
- H. Grocery stores (up to 20,000 square feet)
- I. Indoor and outdoor sports facilities including, fitness centers, sports clubs, and swimming pools
- J. Lodging facilities, including hotels, motels, bed & breakfasts
- K. Medical and dental facilities, including offices/patient clinics, hospitals, nursing and personal care facilities, medical/dental labs, medical supply stores
- L. Parks, public or private
- M. Recreational trail, non-motorized

- N. Personal services, including beauty salons, barber shops, tanning salons, dry cleaning, upholstery and rug cleaning, coin operated laundries, photography studios, tax preparation, copying, printing and mailing services, travel agencies
- O. Governmental services facilities for municipal or local district government (court, police facility, fire facility, city hall or similar local government offices not including public works yards or sewer treatment plants),
- P. Religious institutions (not including K-12 schools)
- Q. Repair shops, including bicycles, electronics, jewelry
- R. Retail sales, including building, hardware and garden materials
- S. Retail sales, including apparel and accessories, pet supplies, pet stores, home furnishings and furniture, antiques and second hand goods, sporting goods, books, stationary, video, art and frame supplies jewelry, hobby, toys and games; photography and electronic equipment, tobacco, wine and liquor, florists, department, drug and variety stores, fabric, appliances
- T. Social service facilities, including social service offices, adult and child day care, residential care facilities
- U. Specialized schools within an enclosed building, including the teaching of art, dance, music, cooking, yoga, driving, pet obedience training, massage, religion, vocational
- V. Wholesale businesses when accompanied by on site retail showroom and sales outlet (retail space shall be a minimum of 25% of gross floor area)
- W. Wireless facilities attached to an existing building and camouflaged (See DMC 14.56)

14.20.030 Accessory uses.

Accessory on-site uses in the MT zoning district:

- A. Amateur radio facilities (See DMC 14.56)
- B. Antennae or satellite dish for private telecommunication services
- C. Drive thrus for banks, pharmacies, dry cleaners and coffee shops (50 percent minimum of gross revenues from coffee or coffee-related products), except that such use shall not be permitted between a building and Main Street
- D. Employee recreation facility
- E. Employee daycare facility (outdoor play area permitted)
- F. Employee café or cafeteria operated in conjunction with a principally permitted use (outdoor seating permitted)
- G. Food and/or espresso cart as an accessory to a permitted use, must be directly affiliated with an outside existing use and not located in public right-of-way
- H. Home occupation/industry (See DMC 14.54)
- I. Outside uses; including seating areas and display of retail goods
- J. Sidewalk café (See 14.64.230)
- K. Other accessory use or structure which is subordinate and incidental to a principally permitted use, as determined by the director.

14.20.040 Conditional uses.

Uses permitted in the MT zoning district subject to conditional use permit are:

- A. Animal service facilities, including veterinary clinics, pet shops, grooming services
- B. Automobile facilities, including repair, car wash, gas station
- C. Buildings greater than 35,000 square feet
- D. Equipment rental with no outdoor storage
- E. Funeral home/crematory
- F. Public or private K-12 schools
- G. Retail sales of vehicles, boats, RVs
- H. Subregional utility

I. Transit park and ride lot.

14.20.050 Development standards.

Table 14.20.050.A Minimum Lot Area and Site Requirements.

Minimum density	N/A
Maximum density	Density for upper floor residential determined by building and site plan limitations
Minimum lot area in square feet	0
Minimum street setback	See DMC 14.34, Design Guidelines - General
Minimum interior setback	0 feet
Minimum setback from residential	0 feet
Minimum lot width	25 feet
Maximum impervious surface	75% ⁽³⁾
Maximum height	35 feet ^{(1) (2)}

(1) See DMC 14.64 Additional Development Standards.

(2) Two floors allowed on the uphill side and three floors allowed on the downhill side.

(3) Maximum impervious surface (Gross area minus sensitive areas).

B. Additional Development Standards in the Duvall Municipal Code and Duvall Public Works Design Standards

Chapter 14.28 Commercial (CO) Zoning District

- 14.28.010 Purpose.**
- 14.28.020 Permitted uses.**
- 14.28.030 Accessory uses.**
- 14.28.040 Conditional uses.**
- 14.28.050 Development standards.**

14.28.010 Purpose.

The purposes of the Commercial zoning district are to:

- A. Provide land for large-scale retail, service, business, office, and entertainment uses which complement, enhance, and support residential and other land use provisions of the Comprehensive Plan;
- B. Provide economic, employment, and housing opportunities in developments that incorporate traditional development patterns and elements, including building location, architectural design, construction materials, and site design that are in keeping with Duvall's character;
- C. Ensure that site requirements and amenities, including vehicle, pedestrian, and bicycle circulation and parking, landscaping, sensitive areas protection, lighting, public areas, utilities, and other necessary and desirable elements are integral parts of all commercial projects.
- D. Ensure that development is in keeping with the Duvall City Wide Visioning Plan and the Duvall Downtown Sub Area Plan.
 - 1. Allow for large-scale retail developments as long as they are designed to reduce perceived bulk and scale and provide for pedestrian connectivity from one site to another.
 - 2. Incorporate the preservation of sensitive natural features on-site as an amenity to the development.
 - 3. Encourage the use of sustainable design principles in new development.

14.28.020 Permitted uses.

Each building in the Commercial zoning district shall be limited to 65,000 square feet unless a conditional use permit in accordance with DMC 14.68 has been granted. Permitted uses in the CO zoning district are:

- A. Adult entertainment facilities, including theaters, retail stores, clubs (See DMC 5.02 for licensing criteria and DMC 14.64.220 for location restrictions)
- B. Animal service facilities, including veterinary clinics, pet shops, indoor pet daycare, grooming services, kennel or cattery
- C. Automotive rental and leasing
- D. Automotive service facilities, including gas stations, auto parts stores, auto repair, car washes, auto glass repair
- E. Cemeteries
- F. Cultural facilities including movie or production theaters, libraries, museums, arboretums, conference centers, community centers
- G. Day care facilities, including family day care providers
- H. Dwelling units on upper floors
- I. Eating and drinking establishments without drive-thrus, including restaurants, pubs, wine bars, bars, coffee shops, and bakeries
- J. Equipment rental (recreational)

- K. General business and professional offices, including financial institutions, offices for off-site manufacturing uses, attorney, real estate, insurance, accounting, engineering, architectural, planning, science, management, public relations
- L. Governmental services (court, police, fire, city hall or similar local government not including public works yards or sewer treatment plants)
- M. Grocery/convenience stores
- N. Indoor and outdoor sports facilities including bowling centers, fitness centers, sports clubs, golf courses, driving ranges, swimming pools
- O. Lodging facilities, including hotels, motels, bed & breakfasts
- P. Medical and dental facilities, including offices/patient clinics, hospitals, nursing and personal care facilities, medical/dental labs, medical supply stores
- Q. Parks, public or private
- R. Recreational trails, non-motorized
- S. Personal services, including beauty salons, barber shops, tanning salons, dry cleaning, upholstery and rug cleaning, coin operated laundries, photography studios, tax preparation, copying, printing and mailing services, travel agencies
- T. Religious institutions (not including K-12 schools)
- U. Repair shops, including bicycles, electronics, jewelry
- V. Retail sales of building, hardware and garden materials
- W. Retail sales of vehicles, boats, and recreational vehicles
- X. Retail sales, including of apparel and accessories, home furnishings and furniture, antiques and second hand goods, sporting goods, book, stationary, videos, art and frame supplies, jewelry, hobby, toys and games, photography and electronic equipment, pets and pet supplies, tobacco, wine and liquor, florists, department, drug and variety stores, fabric, appliances
- Y. Social service facilities, including social service offices, adult and child day care, residential care facilities
- Z. Senior citizen-assisted living facility
- AA. Specialized schools, including the teaching of art, dance, music, cooking, yoga, driving, pet obedience training, massage, religion, vocational
- BB. Wholesale businesses when accompanied by on site retail showroom and sales outlet (retail space shall be a minimum of 25% of gross floor area).
- CC. Wireless facilities attached to an existing building and camouflaged (See DMC 14.56)

14.28.030 Accessory uses.

Accessory on-site uses in the CO zoning district are limited to indoor uses and on site uses unless specifically stated and include:

- A. Antennae or satellite dish for private telecommunication services – outdoor
- B. Drive thrus for banks, pharmacies, and dry cleaners, except that such use shall not be permitted between a building and a street
- C. Employee recreation facility
- D. Employee daycare facility (outdoor play area permitted)
- E. Employee café or cafeteria operated in conjunction with a principally permitted use (outdoor seating permitted)
- F. Food and/or espresso cart as an accessory to a permitted use, must be directly affiliated with an existing use and not located in public right-of-way
- G. Home occupation/home industry (See DMC 14.54)
- H. Outside uses, including seating areas, and display of retail goods brought in at night
- I. Sidewalk cafés (See DMC 14.64.230)
- J. Other accessory use or structure which is subordinate and incidental to a principally permitted use, as determined by the director.

14.28.040 Conditional uses.

Uses permitted in the CO zoning district subject to conditional use permit are:

- A. Buildings greater than 65,000 square feet in area
- B. Bulk retail
- C. Eating and drinking establishments with drive-thrus, including restaurants, coffee shops, although no drive-thrus shall be located between a building and street
- D. Equipment rental, with outside storage
- E. Funeral home/crematory
- F. Indoor shooting range
- G. Public or private K-12 schools
- H. Public works yard
- I. Subregional utility
- J. Transit park and ride lot
- K. Wireless communication facilities, freestanding or attached to an existing building, not camouflaged.

14.28.050 Development standards.

Table 14.28.050.A Minimum Lot Area and Site Requirements.

Minimum density	N/A
Maximum density	Density for upper floor residential determined by building and site plan limitations
Minimum lot area in square feet	0square feet
Minimum street setback	0-20 feet
Minimum interior setback	5 feet
Minimum setback from residential	20
Minimum lot width	25 feet
Maximum impervious surface	85% ⁽⁴⁾
Maximum height – uphill side	45 feet ⁽¹⁾⁽²⁾⁽³⁾

- (1) See DMC 14.34, Design Guidelines
- (2) Three floors allowed on the uphill side and four floors are allowed on the downhill side.
- (3) See DMC 14.64 for building height calculations.
- (4) Maximum impervious surface (Gross area minus sensitive areas).

- B. Additional Development Standards in the Duvall Municipal Code and Duvall Public Works Design Standards.

Chapter 14.30 Light Industrial (LI) Zoning District (Light Industrial and Office)

- 14.30.010 Purpose.**
- 14.30.020 Permitted uses.**
- 14.30.030 Accessory uses.**
- 14.30.040 Conditional uses.**
- 14.30.050 Development standards.**

14.30.010 Purpose.

The purposes of the Light Industrial (LI) zoning district are to:

- A. Provide appropriate areas for various light industrial land uses, including office, warehouse, distribution, manufacturing enterprises and research and development facilities which complement, enhance, and support the mix of land uses within the city;
- B. Provide for limited retail sales or related services allowed only as incidental to underlying permitted uses or through a conditional use permit process;
- C. Promote high-quality and well-designed business and light industrial developments that are in keeping with Duvall's small-city character, and create an environment free from adverse noise, odors, dust, smoke, air pollution, water pollution, and inappropriate truck traffic or related traffic congestion;
- D. Ensure that proper site needs and amenities, including but not limited to vehicular circulation and parking, services and utilities, landscaping, lighting, pedestrian, bicycle, and greenbelt networks and linkages, and other necessary and desirable elements are integral parts of all industrial district projects.

14.30.020 Permitted uses.

Each building in the Light Industrial zoning district shall be limited to 65,000 square feet unless a conditional use permit in accordance with DMC 14.68 has been granted. Permitted uses in the LI zoning district are:

- A. Animal service facilities, including veterinary clinics, grooming services, kennel
- B. Automotive service facilities, including automobile, truck, and RV rental and leasing, gas stations, auto repair, car washes, auto glass repair
- C. Cemeteries
- D. Community residential facilities
- E. Construction related facilities, including contractor yards, offices
- F. Day care facilities
- G. Dry cleaning plants and industrial launderers
- H. Equipment rental with or without outside storage
- I. Fuel dealers
- J. General business and professional offices, including for on-site manufacturing uses, financial institutions, attorney, real estate, insurance, accounting, engineering, architectural, planning, science, management, public relations
- K. Governmental services (court, police, fire, city hall or similar local government including public works yards or sewer treatment plants)
- L. Indoor and outdoor sports facilities including bowling centers, fitness centers, sports clubs, golf courses, driving ranges, swimming pools
- M. Manufacturing of products, including food and kindred products, wine, beer, apparel and other textile products, wood products, commercial printing and publishing, stone, clay glass and concrete products, fabricated metal products, industrial and commercial machinery, computer and office equipment, electronic and other electric equipment,

- measuring and controlling instruments, aircraft, ship and boat building, movie production/distribution
- N. Medical and dental facilities, including offices/patient clinics, hospitals, nursing and personal care facilities, medical/dental labs, medical supply stores
- O. Parks, public or private
- P. Recreational trails, non-motorized
- Q. Recycling facility
- R. Religious institutions (not including K-12 schools)
- S. Repair shops, including for heavy equipment, trucks, and equipment
- T. Research facilities, development and testing
- U. Restaurants, primarily serving the needs of the industrial area
- V. Retail sales of building, hardware and garden materials, and vehicles, including boats, trucks, and RVs
- W. Self service storage
- X. Social service facilities, including social service offices, adult and child day care, residential care facilities
- Y. Specialized schools, including the teaching of art, dance, music, cooking, yoga, driving, pet obedience training, massage, religion, vocational
- Z. Subregional utility
- AA. Transportation services, including couriers, trucking and taxi facilities, freight and cargo service, passenger transportation service
- BB. Warehousing and wholesale trade including of agricultural and manufactured products
- CC. Wireless communications facility, attached to an existing building or structure, camouflaged.

14.30.030 Accessory uses.

Accessory on-site uses in the LI zoning district are:

- A. Antennae or satellite dish for private telecommunication services
- B. Drive thrus for banks, pharmacies, except that such use shall not be permitted between a building and a street
- C. Employee recreation facility and play area
- D. Employee day care facility (outside play area permitted)
- E. Employee café or cafeteria operated in conjunction with a principally permitted use
- F. Food and/or espresso cart as an accessory to a permitted use, must be directly affiliated with an existing use and not located in public right-of-way
- G. Outside merchandise screened in accordance with DMC 14.64
- H. Sidewalk cafés (See DMC 14.64.230)
- I. Other accessory use or structure which is subordinate and incidental to a principally permitted use, as determined by the director.

14.30.040 Conditional uses.

Uses permitted in the LI zoning district subject to conditional use permit are:

- A. Auction houses
- B. Buildings greater than 65,000 square feet in area
- C. Indoor shooting range
- D. School bus base
- E. Secure community transition facilities
- F. Transfer station
- G. Transit bus base
- H. Transit park and ride lot

- I. Wireless communications facility, freestanding or attached to an existing building or structure and not camouflaged
- J. K-12 public or private schools

14.30.050 Development standards.

Table 14.30.050.A Minimum Lot Area and Site Requirements.

Minimum density	N/A
Maximum density	Density for upper floor residential determined by building and site plan limitations
Minimum lot area in square feet	0square feet
Minimum street setback	0-20 feet ⁽¹⁾ See DMC 14.34, Design Guidelines
Minimum interior setback	5 feet
Minimum setback from residential	20
Minimum lot width	25 feet
Maximum impervious surface	85% ⁽⁴⁾
Maximum height	45 feet ⁽²⁾⁽³⁾

- (1) See DMC 14.34, Design Guidelines
- (2) Three floors are allowed on the uphill side and four floors are allowed on the downhill side.
- (3) See DMC 14.64 for height calculations.
- (4) Maximum impervious surface (Gross area minus sensitive areas).

- B. Additional Development Standards in the Duvall Municipal Code and Duvall Public Works Design Standards

Chapter 14.31 Parks and Open Space (PO) Zoning District

- 14.31.010** Purpose
- 14.31.020** Permitted uses
- 14.31.030** Accessory uses
- 14.31.040** Conditional uses
- 14.31.050** Development standards

14.31.010 Purpose.

The purpose of the Parks and Open Space (PO) zone is to provide public and private open, natural and improved areas for passive and active recreation. These areas are intended to provide recreation opportunities for all ages and interest groups; protect and preserve environmentally sensitive, cultural, historic, and significant natural resources; provide multipurpose trail connections to natural features, public facilities, schools, neighborhoods and business districts; support effective stormwater management, and improve citizens' health and quality of life.

14.31.020 Permitted uses.

Each building in the PO zoning district shall be limited to 65,000 square feet unless a conditional use permit in accordance with DMC 14.68 has been granted.

Permitted uses in the PO zoning district are:

- A. Community center
- B. Cultural facilities
- C. Open space, public or private
- D. Park, public or private
- E. Recreational trails, non-motorized
- F. Wireless communications facility, attached to an existing building or structure, camouflaged.

14.31.030 Accessory uses.

Accessory uses in the PO zoning district are:

- A. Antennae or satellite dish for private telecommunication services
- B. Café or cafeteria operated in conjunction with a principally permitted use
- C. Property Care taker
- D. Other accessory use or structure which is subordinate and incidental to a principally permitted use, as determined by the Director

14.31.040 Conditional uses.

Each building shall be limited to 65,000 square feet unless a conditional use permit in accordance with DMC 14.68 has been granted. Conditional uses in the PO zoning district are subject to review in accordance with the criteria set out in DMC 14.68, Conditional Use Permit Criteria and other applicable criteria.

Conditional uses in the PO zone are:

- A. Community center

14.31.050 Development standards.

A. The following density and dimension requirements apply to the PO zone:

Table 14.31.050.A Density and Dimension Requirements

Minimum density	N/A
Maximum density	N/A
Minimum lot area in square feet	2,500 square feet
Minimum street setback	See DMC 14.34, Design Guidelines
Minimum interior setback	5 feet
Minimum setback from residential	20
Minimum lot width	25 feet
Maximum impervious surface	60% ⁽²⁾
Maximum building coverage	50%
Maximum height	45 feet ⁽¹⁾

(1) Four floors are allowed on the uphill and downhill side.
 (2) Maximum impervious surface (Gross area minus sensitive areas).

- B. See DMC 14.34 Design Guidelines, DMC 14.64 Additional Development Standards and Public Works Design Standards for additional development standards that apply to the PO zone.
- C. All development within the PO zone district shall be developed in accordance with a master development plan through the site plan review process established in DMC 14.08. The plan must demonstrate that the site is being developed in an integrated and cohesive manner.

Chapter 14.32 Public Facilities (PF) Zoning District

- 14.32.010 Purpose.**
- 14.32.020 Permitted uses.**
- 14.32.030 Accessory uses.**
- 14.32.040 Conditional uses.**
- 14.32.050 Development standards.**

14.32.010 Purpose.

The purpose of the Public Facilities district is to provide for publicly owned parks and open space, and public facilities that are located permanently in a specific location such as schools and government facilities (including but not limited to police, fire, city administration, sewer treatment plant).

14.32.020 Permitted uses.

Each building in the Public Facilities zoning district shall be limited to 65,000 square feet unless a conditional use permit in accordance with DMC 14.68 has been granted. Permitted uses in the PF zoning district are:

- A. College/University
- B. Governmental services, including city hall, court, archives, fire, police, training facility, wastewater management facility, public agency yard, school district offices
- C. K-12 public or private schools
- D. Recreational trails, non-motorized
- E. Parks, public or private
- F. School bus base
- G. Subregional utility
- H. Vocational schools
- I. Wireless communications facility, attached to an existing building or structure, camouflaged.

14.32.030 Accessory uses.

Accessory uses in the PF zoning district are:

- A. Antennae or satellite dish for private telecommunication services
- B. Dormitory
- C. Employee café or cafeteria operated in conjunction with a principally permitted use
- D. Employee recreation facility and play area
- E. Garages, carports
- F. Storage of yard maintenance equipment
- G. Other accessory use or structure which is subordinate and incidental to a principally permitted use, as determined by the director.

14.32.040 Conditional uses.

The uses listed in A-G are considered Essential Public Facilities and are conditionally permitted in the PF zoning district subject to review in accordance with the criteria set out in DMC 14.68, Conditional Use Permit Criteria and other applicable criteria:

- A. Heliport
- B. Jail
- C. Landfill
- D. Non-hydroelectric generation facility

- E. Wireless communication facilities, freestanding or attached to a building and not camouflaged
- F. Work farm/camp
- G. Work release facility
- H. Buildings greater than 65,000 square feet in area.

14.32.050 Development standards.

Table 14.32.050.A Minimum Lot Area and Site Requirements.

Minimum density	N/A
Maximum density	N/A
Minimum lot area in square feet	2,500 square feet
Minimum street setback	See DMC 14.34, Design Guidelines
Minimum interior setback	5 feet
Minimum setback from residential	20
Minimum lot width	25 feet
Maximum impervious surface	80% ⁽²⁾
Maximum height	45 feet ⁽¹⁾

- (1) Four floors are allowed on the uphill and downhill side.
- (2) Maximum impervious surface (Gross area minus sensitive areas).

- B. Additional Development Standards in the Duvall Municipal Code and Duvall Public Works Design Standards.

Chapter 14.64 Additional Development Standards.

14.64.010	Purpose.
14.64.020	Densities and dimensions.
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14.64.010 Purpose.

The purpose of this chapter is to establish requirements for determining basic dimensional standards and to set out development standards for specific types of uses. The standards and rules are established to provide flexibility in project design, provide solar access, and maintain privacy between adjacent uses. The Public Works Development Designs Standards, DMC 14.34, Design Guidelines as applicable, shall apply to all developments.

14.64.020 Densities and dimensions.

The density and dimension tables are arranged in a matrix format and are located in each specific zoning district, DMC 14.12 – DMC 14.32.

14.64.030 Measurement methods.

The following provisions shall be used to determine compliance with this Title:

- A. Street setbacks shall be measured from the edge of a street right-of-way or temporary turnaround.
- B. Lot area shall be the total horizontal land area contained within the boundaries of a lot.
- C. Impervious surface calculations shall not include areas of turf, landscaping, natural vegetation, surface water retention/detention facilities, or other similar facilities as determined by the Public Works Director.

14.64.040 Calculations – Gross usable area, Residential.

The permitted number of units shall be determined as follows:

- A. The maximum allowed number of dwelling units shall be computed by multiplying the land use per gross useable area by the applicable residential density.
- B. When calculations result in a fraction, the fraction shall be rounded to the nearest whole number as follows:
 - 1. Fractions of .50 or above shall be rounded up; and
 - 2. Fractions of .49 or below shall be rounded down.

Figure 14.64.040.3

Example:				
18,000	x	(6/43,560)	=	2 maximum allowed dwelling units
(gross useable site area in square feet)	x	R6 zone allowed density (6 units/acre)	=	(rounded down from 2.47)

- C. On lots that contain sensitive areas, a density credit for such areas may be allowed in accordance with DMC 14.42, Sensitive Area Regulations.

14.64.050 Lot area – Prohibited reduction.

Any portion of a lot that was required to calculate and ensure compliance with the standards and regulations of this Title shall not be subsequently subdivided or segregated from such lot.

14.64.060 Setbacks – General.

- A. For the purpose of applying setback regulations, the following shall be applied: the front shall be toward the street or access corridor from which the lot is addressed; the rear is opposite to the front or as nearly so as the lot shape permits; and the sides are 90 degrees to the front or as nearly so as the lot shape permits.
- B. All setbacks shall be measured at right angles, or as near to right angles as possible, to the nearest property line in a plane horizontal to the ground, or in the case of access corridors for single-family residential development, from the nearest edge of the easement to the foundation line of the structure.
Where a lot fronts on more than one street, both frontages shall have front yard setbacks consistent with Figure 14.12.050C.

14.64.070 Setbacks – Specific building or use.

When a building or use is required to maintain a specific setback from a property line or other building, such setback shall apply only to the specified permitted or accessory building or use defined within the zone.

14.64.080 Setbacks – Modifications.

The following setback modifications are permitted:

- A. When the common property line of two lots is covered by a building(s), the setbacks required by this chapter shall not apply along the common property lines.
- B. When a lot is located between 2 lots, each of which is developed with a building having nonconforming street setbacks, the required street setback for such lot may be the average of the 2 nonconforming setbacks or 60 percent of the required street setback, whichever results in the greater street setback. This is applicable only when the buildings on the adjacent lots are allowed uses in accordance with the zoning district and the proposed building use is similar to those uses.

14.64.090 Setbacks – Utility corridors.

- A. In subdivisions and short subdivisions, areas used as utility corridors as identified in this Title shall be contained in separate tracts, rights-of-way or easements.

- B. In other types of land development permits, easements shall be used to delineate such corridors.
- C. All buildings shall maintain a minimum distance of 5 feet from property or easement lines delineating the boundary of utility corridors, except for utility structures necessary to the operation of the utility corridor, and as set out in DMC 14.34, Design Guidelines. A greater setback, to a maximum of 10 feet, may be required by the Public Works Director on a case-by-case basis.

14.64.100 Setbacks – Alleys.

For lots with alley access; garages, and other accessory buildings may be located on the rear lot line of the alley. Garages facing the alley are subject to an additional 5 foot setback and shall not be closer than 15 feet from the centerline of the alley.

14.64.110 Setbacks – Adjoining half-street or designated arterial.

In addition to providing the standard street setback, a lot adjoining a half-street or designated arterial shall provide an additional width of street setback sufficient to accommodate construction of the planned half-street or arterial.

14.64.120 Setbacks – Projections allowed.

Projections may extend into the required setbacks as follows:

- A. On ground and upper floor uses in all districts and on upper floor uses in the OT, MT, UT-1st and RIV zoning districts, fireplace structures, bay or garden windows, enclosed stair landings, closets, or similar structures may project into any setback; provided such projects are:
 - 1. Limited to 2 per façade;
 - 2. Not wider than 7 feet; and
 - 3. Not more than 24 inches into an interior setback or into a street setback.
- B. Uncovered porches and decks which exceed 18 inches above the finished grade may project:
 - 1. 18 inches into interior setbacks; and
 - 2. 5 feet into the street setback except where the allowable setback is 0 feet as in the OT, MT, UT-1st and RIV zones.
- C. Uncovered porches and decks not exceeding 18 inches above the finished grade may project to the property line.
- D. Roof eaves, including any part of a roof structure whether supported by diagonal bracing to the building, may no project more than:
 - 1. 24 inches into an interior setback;
 - 2. 24 inches into a street setback except where the allowable setback is 0 feet as in the OT, MT, UT-1st and RIV zones; or
 - 3. Be less than 7 feet measured vertically above the finished ground level in the vicinity of the projection.
- E. Fences may project into any setback; provided that the sight distance requirements are maintained along street corridors.

14.64.130 Heights – How to measure.

Applicants are required to work with the topography of a site when designing a building.

- A. Residential buildings.
 - 1. The building height on the uphill side shall be determined by measuring the vertical distance from the average elevation of the building corners to the eave line of the roof.

2. The building height on the downhill side shall be determined by measuring the vertical distance from the average elevation of building height of the corners to the eave line of the roof.
- B. Non residential buildings.
1. The building height on the uphill side will be determined by measuring the vertical distance from the average finished grade of the sidewalk to the eave line of the roof.
 2. The building height on the downhill side will be determined by measuring the vertical distance from the average finished grade of the sidewalk to the eave line of the roof.
- C. Buildings that are at the sidewalk grade on lots fronting on Main Street as of the date of this Title adoption, and that have a previously existing flat grade, and that are being redeveloped and/or removed to allow for redevelopment, shall be permitted to develop a 3 story building on the lot if all other provisions of this Title can be met.

14.64.140 Heights – Exceptions to limits.

The following structures may be erected above the height limits to the minimum height necessary to support the use as determined by the Director:

- A. Roof structures housing or screening elevators, fire access stairways, tanks, ventilating fans or similar equipment required for building operation and maintenance; and
- B. Fire or parapet walls, skylights, flagpoles, chimneys, smokestacks, church steeples, communication transmission structures, private amateur radio facilities, utility line towers and poles, and similar structures.

14.64.150 Lot divided by zone boundary.

When a lot is divided by a zone boundary, the following rules shall apply:

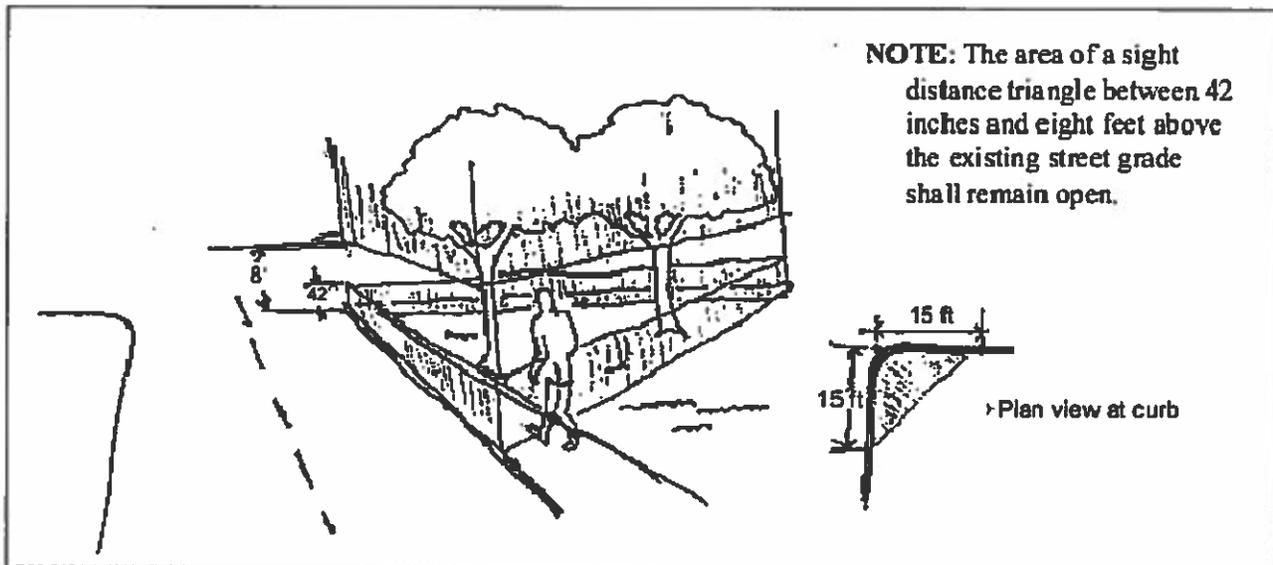
- A. When a lot contains both residential and nonresidential zoning, the zone boundary between the zones shall be considered a lot line for determining permitted building height and required setbacks on the site.
- B. When a lot contains residential zones of varying density, any residential density transfer within the lot shall only be allowed from the portion with the lesser residential density to that of the greater residential density.
- C. Uses on each portion of the lot shall only be those permitted in each zone.

14.64.160 Sight distance requirements.

Except for utility poles and traffic control signs, the following sight distance provisions shall apply to all intersections and site access points:

- A. A sight distance triangle area as determined by DMC 14.64.160.B shall contain no fence, berm, vegetation (tree trunks acceptable if they are not sight obscuring), on-site vehicle parking area, signs or other physical obstruction between 3 ½ feet and 8 feet above the existing street grade;

Figure 14.64.160.A Site Distance Triangle



- B. The sight distance triangle at:
1. A street intersection shall be determined by measuring 15 feet along both street property lines beginning at their point of intersection. The third side of the triangle shall be a line connecting the endpoints of the first two sides of the triangle;
 2. A site access point shall be determined by measuring 15 feet along the street lines and 15 feet along the edges of the driveway beginning at the respective points of intersection. The third side of each triangle shall be a line connecting the endpoints of the first two sides of each triangle; and
- C. Structures or landscaping that are located in required street setbacks may be required to be removed or modified, if:
1. Such improvements prevent adequate sight distance to drivers entering or leaving a driveway;
 2. No reasonable driveway relocation alternative for an adjoining lot is feasible; or
 3. Clear lines of sight are obstructed by such structures, landscaping or objects as to pose a potential public safety hazard as determined by the Director.

14.64.170 Nonresidential land uses in residential zones.

Except for utility facilities and uses, all nonresidential uses located in the residential zones (R4-R8, R12) shall be subject to the following requirements:

- A. Building coverage by a nonresidential use shall not exceed the coverage allowed for a residential use as set out in DMC 14.12 – 14.16.
- B. Impervious surface coverage by a nonresidential use shall not exceed the coverage allowed for a residential use as set out in DMC 14.12- 14.16.
- C. Buildings and structures shall conform to the setback requirements set out in DMC 14.12- 14.16.
- D. One single-family detached dwelling unit allowed as an accessory use to a church or school shall conform to the setback requirements of the zone.

- E. Parking areas are permitted within the required setback area from property lines; provided, such parking areas are located outside of the required landscape area.
- F. Sites shall abut or be accessible from at least one public street functioning at a level consistent with the Public Works Development Design Standards.
- G. The building height shall conform to the zone in which the use is located.

14.64.180 Fences.

- A. Fences are permitted as follows:
 - 1. The sight distance requirements of DMC 14.64.160 shall be observed.
 - 2. No fence shall be located on any public right-of-way.
 - 3. Fences shall not be constructed of a material which has a color or surface finish which can cause glare or eye discomfort or other safety hazards.
 - 4. New barbed wire fences are not permitted in any zone within City limits, except as specified in the Light Industrial and Public Facility Zone section. Existing barbed wire fences are permitted until a new fence is proposed or the subject property redevelops, whichever occurs sooner.
 - 5. Electric fences shall be not be permitted except in non-residential zoning districts and in specific cases by permit from the City. Such fences shall not be permitted adjacent to the primary public right-of-way. Electric fences shall comply with the requirements stated below:
 - a. Warning signs located at maximum intervals of 75 feet when within 5 feet of and essentially parallel to a property line and without protective fence.
 - b. Electric fence charging units shall bear a seal of approval by Underwriter's Laboratories or by the U.S. Bureau of Standards.
 - c. Invisible fences are permitted in residential districts and are permitted adjacent to the primary public right-of-way in the same manner as a residential zone fence.
 - 6. Whenever a fence is placed on top of a new retaining wall and/or original grade, the height of the fence and the retaining wall/grade together shall not exceed six feet measured from the original grade.
- B. Residential Zone Fences.
 - 1. In residential zoning districts, fences may be constructed to a maximum height of 4 feet in front yards and 6 feet on the sides and rear of a lot, except as specified in this section.
 - 2. For the purposes of this regulation, the front yard shall begin at the front corner of the dwelling unit.
 - 3. Front yard fences shall be designed to be see through, except as specified in this section.
- C. Residential zone fences located along the following routes (NE Cherry Valley Rd, NE Big Rock Rd, NE 150th St, NE 145th St, NE 152nd St (Bruett Rd.), NE Stephens St., 3rd Ave NE, 275th Ave NE and Batten Rd NE:
 - 1. Front yard fences may be permitted as approved by the Planning Director above the 4 height limitation provided that they choose one of the following options:
 - a. Front yard fences may be a maximum of 6 feet tall and solid, provided that a Type II 6-foot wide landscaping buffer is provided between the back edge of sidewalk and the fence. See DMC 14.38 Landscaping for Type II planting specifications; or,
 - b. Front yard fences may be a maximum of 6 feet tall, 4 feet of which is solid from sidewalk grade to 4 feet above grade, provided that the top 2 feet are decoratively patterned. Fences shall be set back a minimum of 4 feet from

the back edge of sidewalk, and Type III low cover landscaping shall be provided between the sidewalk and the fence.

- D. **Mixed Use and Commercial Zone Fences.**
 - 1. Fences are not permitted adjacent to the primary street frontage unless approved by the City as part of a site plan approval or other permit.
 - 2. Fences may be constructed of any suitable material to a maximum height of 6 feet on any part of a lot (barbed wire not permitted), other than the primary street frontage.
 - 3. Chain link industrial type fence or fence of other suitable material approved by the Director may be constructed to a maximum height of 6 feet on any part of a lot except within a setback adjoining a street, or adjacent to the primary street frontage.
- E. **Light Industrial and Public Facility Zone Fences.**
 - 1. In the LI and PF zone, chain link industrial type fence or fence of other suitable material approved by the Director may be constructed to a maximum height of 6 feet, excluding barbed wire, on any part of a lot, except fences are not permitted adjacent to the primary street frontage unless approved as part of the site plan approval or other permit.
 - 2. Barbed wire may be used along the top of industrial type fence provided the lowest strand has a minimum height of 6 feet from ground level and such wire is approved as part of the site plan approval, if applicable.
- F. Where possible, the use of landscaping instead of fences is encouraged. Landscaping is not subject to the 6 foot height restriction of this section, except that landscaping is subject to the 4 foot front yard restriction in residential zoning districts.
- G. Gated residential communities shall not be permitted.
- H. Fences for City-owned facilities and public and private schools. Fences for City-owned facilities and public and private schools may be constructed above the 6-foot fence height limitation upon site plan review by the Planning Department. Specific conditions may be required by the Director on a case by case basis (i.e. landscaping). The applicant shall obtain a permit from the Building Department for any fence constructed over 6 feet.

14.64.190 Swimming pools.

- A. Excavated or surface type swimming pools may be installed for private or communal residential use in the, R4 – R8, UT-1st, MU12, R12 and R20 zoning districts.
- B. A 6 foot high fence of chain link, wood, or other secure material with locking gate shall be constructed around all swimming pools to control access by unauthorized or unattended persons.

14.64.200 Animal boarding facilities and kennels.

- A. Structures containing animals, not including dogs and cats that are pets at a single-family residence, shall be set back a minimum of 50 feet from a property line adjacent to a residential use or zone. Special screening may be required to screen such facilities from adjacent residential uses.
- B. The application for project permit application and/or business license shall contain the number of animals proposed to be served by the facility. The number can be reduced by the Director if it is necessary to ensure the neighboring properties will not be impacted by noise, odor, sanitation, and runoff problems.
- C. Animal boarding facilities shall be located inside a structure. Outdoor runs for exercising animals are permitted with a sound attenuating fence required. Runs may be required to be set back and/or screened from adjacent properties.

14.64.210 Automobile, recreational vehicle and boat sales, rental, and service.

- A. Vehicles that are for sale are only permitted in areas remaining after on-site parking and landscaping requirements have been met.
- B. Vehicles shall be stored on paved parking areas.
- C. Outdoor loudspeaker systems are prohibited.
- D. Servicing of vehicles shall occur inside a building.
- F. All wash areas shall be covered and drainage from such areas be in accordance with the Public Works Development Design Standards and be approved by the Public Works Director.

14.64.220 Adult use businesses.

Adult use business, also referred to as “sexually oriented businesses” are as defined in DMC 14.06.

- A. Applicants proposing an adult use business shall comply with the provisions of this Title, and the more detailed and specific provisions of DMC 5.02, Sexually-Oriented Businesses.
- B. Adult use businesses shall not be located within 1,000 linear feet of any of the following uses or zones: R4, R4.5, R6, R8, R12, MU12 zoning districts; public or private pre-K -12 schools, licensed daycare facilities, public parks, community centers, libraries, religious institutions that conduct classes for minors, or another adult use business.

14.64.230 Sidewalk Cafés.

14.64.230.A Applicability

- A. This section applies to all sidewalk cafés whether located on a public or private sidewalk.
- B. Sidewalk cafés shall be accessory uses only to an abutting restaurant, pub or coffee shop under the same ownership and/or management and that are permitted by this Title.
- C. In addition to compliance with this section, sidewalk cafés shall be consistent with the DMC 14.34, Design Guidelines and with all other applicable city regulations.

14.64.230.B Sidewalk café standards.

In order to be issued a permit for a sidewalk café, an applicant must meet the following standards and provide documentation as requested:

- A. There shall be a minimum 5 foot wide unobstructed pedestrian corridor outside the fenced area to the nearest street tree, utility pole, fire hydrant, etc, unless a wider width is required by the Director due to other standards and regulations.
- B. If a fence is required and/or proposed as part of the café, the placement of the fence shall be consistent with the applicable standards established by the Americans with Disabilities Act and shall not obstruct vehicular traffic or parking or the use of any crosswalk, wheelchair ramp or bus zone;
- C. If alcohol is to be served, the outside area shall be fenced off from the pedestrian corridor by a railing, planters, or other similar devices approved by the city. The fencing shall be a maximum of 42 inches in height and a single opening shall be provided through the fenced area for customers or as required by the Washington State Liquor Control Board requirements;
- D. The applicant must be the owner or occupant of the abutting property and operate a café or restaurant abutting the sidewalk café area;
- E. The applicant must have a valid city business license;
- F. Liquor, as defined in RCW 66.04.010, as now existing or hereafter amended, may be sold at a sidewalk café when authorized in both the street use permit and provided for in this chapter and by permit of the Washington State Liquor Control Board and not otherwise;

- G. In the right-of-way, unless expressly authorized by the Public Works Director, no pavement shall be broken, no sidewalk surface disturbed and no permanent fixture of any kind shall be installed in or on the sidewalk area in connection with a sidewalk café;
- H. Lighting of the sidewalk café must not be excessive;
- I. No product displays or signage, other than umbrellas bearing a product name, are permitted in a sidewalk café;
- J. If the proposed sidewalk café serves liquor, such service shall be associated with a restaurant that serves its primary menu during all hours of operation;
- K. A street use permit is required to allow a portion of a public right-of-way to be used as a sidewalk café. Such permit is valid from the date issued and is subject to the requirements of this chapter. A street use permit is automatically renewed each year unless rescinded by the Public Works Director due to non-compliance with this section or for public needs of the right-of-way. The Public Works Director has the authority to issue the permit if the criteria set out in this chapter are met, as recommended by the Director, and to otherwise deny the permit.

14.64.230.C Sidewalk café application.

In addition to the street use permit application, if required, a person proposing a sidewalk café must submit a sidewalk café application that provides for the following:

- A. Documentation that the standards set out in 14.64.230.B are met;
- B. Proposed number of tables and chairs;
- C. Proposed hours of operation;
- D. A dimensioned or scaled plan showing the restaurant's storefront, the location of the fencing, the unobstructed walking area, the square footage of the area proposed to be fenced off, and other requested information;
- E. If a fence is proposed, a plan showing the design of the fence and materials and colors proposed. Such fence shall be designed in a way to complement the adjacent building. Fence styles that are permitted include decorative metal fences, wood fences in combination with planters, and similar types of fencing. The city may require samples of materials and colors to be submitted.

14.64.230.D Sidewalk café approval.

The Director may include such terms or conditions in the approval that are deemed appropriate, including but not limited to:

- A. Restrictions as to the area proposed for use; the number of tables and chairs; and the days and hours of use;
- B. For sidewalk café areas in the public right-of-way, a requirement that the area be cleared when not in use as a sidewalk café, or upon the order of the Director, the Fire Chief, or other city officer such as the Chief of Police;
- C. Provisions that the applicant maintain the sidewalk in a clean and safe condition for pedestrian travel;
- D. Regulations on lighting and illumination of the sidewalk café and limitations on noise;
- E. The Director or Public Works Director may suspend or revoke the permission granted for sidewalk cafés in the public right-of-way if an applicant violates this chapter, any implementing rules, or terms and conditions of this permit,
- F. The Public Works Director may require a sidewalk café in a public right-of way to be temporarily or permanently removed due to a public works project that will affect the area.

14.64.240 Open Space Standards – Residential.

- A. The purpose of this section is to establish open space requirements in residential zone districts. These standards shall apply to the R-4, R-4.5, R-6, R-8, R-12, R-12 and MU12, and R-20 (ground floor residential portion of the site).
- B. Open spaces shall be distributed through out the site.
- C. 10 percent of the developable area shall be established as open space and neighborhood recreation facilities. Developable is the gross area of the site minus sensitive areas and right-of-way.
- D. A portion of the sensitive area can be counted toward open space. To count sensitive areas in the open space requirement the area shall contain: a trail in the outer portion of a sensitive area buffer, a small viewing and/or seating area, and interpretive signage. The trail area only shall be calculated toward the required open space requirement.
- E. The open space and recreational facilities shall be readily accessible to all dwelling units with pedestrian trails or sidewalks.
- F. Except for sensitive areas, the open space area shall be a minimum width of 25 feet. The length of the open space area shall be no more than twice the width unless approved by the Planning Director.
- G. The open space shall not have more than five percent grade unless approved by the director.
- H. Landscaped areas such as planting strips and medians shall not be counted toward the minimum open space requirement.
- I. To the extent feasible, neighborhood recreation areas shall be centrally located within a neighborhood.
- J. Open space provided under this section is in addition to the usable open space required for each lot in accordance DMC 14.34 Design Guidelines.
- K. Open space shall include both passive and active spaces as determined by the director.
- L. The design of the open space shall be approved by the Public Works and Planning directors.
- M. See DMC 14.34 Design Guidelines for other provision for open space requirements.
- N. Utility corridors may be allowed in open space areas as approved by the Public Works Director and the Planning Director.

14.64.250 Watershed Management

The purpose of this section is to designate watershed subbasin management groups within the City, implementing the City's 2015 Watershed Plan and adopted goals and policies of the 2015 Comprehensive Plan (adopted June 2016), protecting important watershed processes and functions. By establishing a framework for regulating land use and development consistent with subbasin management group priorities, this Chapter provides for:

- A. Protection and conservation of high-functioning subbasins and watershed processes;
 - B. Prevention of cumulative adverse environmental impacts to watershed processes;
 - C. Facilitation of more intense developments and land use activities and to less sensitive subbasins; and
 - D. Reasonable use of private property in accordance with 2015 Comprehensive Plan Land Use Element and Environment and Sustainability Element goals and polices.
- A. Subbasin Management Groups. Subbasins across Duvall and urban growth areas are designated according to the following five management categories:

1. Group 1 – Protect / Restore.
 - a. Applies to the Snoqualmie River Floodplain and Cherry Creek Floodplain subbasins as shown in Figure ES-7.
 - b. Assigned to subbasins that are of highest importance to multiple watershed processes and are a high priority for protection and restoration.
2. Group 2A – Highest Conservation
 - a. Applies to five subbasins, generally along the eastern and southern edges of the city and urban grown areas, including Cherry Creek C, Cherry Creek D-West, Cherry Creek D-East, Middle Weiss Creek, and Lower Weiss Creek, subbasins as shown in Figure ES-7.
 - b. Assigned to subbasins that are the highest priority for conservation and are likely not appropriate for much additional development. Assessment results show moderate importance to multiple watershed processes that are also highly intact.
3. Group 2B – Moderate Conservation
 - a. Applies to Cherry Creek B and Upper Weiss Creek subbasins as shown in Figure ES-7.
 - b. Assigned to subbasins that may be appropriate for some additional development, but also require protection of areas important for remaining watershed processes.
4. Group 2C – Lowest Conservation
 - a. Applies to three subbasins including Cherry Creek A, Unnamed Southern Tributary – Lower, and Unnamed Southern Tributary – Upper subbasins as shown in Figure ES-7.
 - b. Assigned to subbasins where more intense development is appropriate. The remaining resources and areas important to watershed processes would benefit from protection.
5. Group 3 – Urban Development
 - a. Applies to four subbasins in historic downtown Duvall, including Old Town, Coe-Clemmons Lower, Coe-Clemmons Upper, and Thayer subbasins as shown in Figure ES-7.
 - b. Assigned to subbasins where more intense development should be focused. These subbasins are below average for water flow importance and have the highest existing degradation.

B. Subbasin Boundary Determinations.

1. Subbasin boundaries as depicted on Figure ES-7 are approximate, based on remote-sensing digital elevation model data and City surface and stormwater infrastructure mapping.
2. For purposes of development proposal review, the City shall assume subbasin extents and boundaries as shown on Figure ES-7 are accurate, unless the following criteria are met:

- a. A project applicant may complete site assessment and survey to update subbasin boundaries;
- b. Assessment results shall be documented in a technical report submitted by a qualified professional in environmental hydrology and/or engineering.
- c. The technical report shall include a site plan depicting the updated subbasin boundary; and
- d. The director, may, at their discretion and at the applicant's expense, retain a qualified consultant in environmental hydrology and/or engineering to review and confirm the applicant's reports, studies, and plans.