

## Introduction

This User's Manual is a working description of the Critical Areas Ordinance (CAO) adopted in 2004. The manual also provides a description of the portions of the Clearing and Grading Ordinance that pertain to critical areas and a guide to the Small Project drainage review requirements, Water Quality Code and the Stormwater Pollution Prevention Manual adopted under the Surface Water Management Ordinance. This manual is ONLY a description of the CAO and must not be confused with the ordinance or regulations. In case of conflict, including but not limited to an omission or incorrect wording, the CAO itself will apply.

### Purpose of User's Manual

This user's manual has been developed to help land use professionals and property owners better understand the requirements that may apply to their land or projects by providing them with a simple, easy-to-use reference that will help them navigate the Critical Areas Ordinance, the Surface Water Management Ordinance and the Clearing and Grading Ordinance. This manual is intended to help make these ordinances more accessible and their associated requirements more understandable to land use professionals and the general public.

### Goals of the ordinances

#### Critical Areas Ordinance

King County passed the Critical Areas Ordinance to protect public health and safety by limiting development in hazard areas, such as on steep slopes or flood zones, and protect environmentally sensitive areas, such as wetlands and streams. The CAO is intended to protect critical areas from being adversely affected by clearing and development of land for residences, commercial use and livestock. The regulations are also intended to protect the public as well as public and private resources from natural hazards, such as flooding and erosion.

#### Surface Water Management Ordinance

The Surface Water Management Ordinance regulates activities that increase storm water runoff. The ordinance establishes a drainage review process and is implemented through the Surface Water Design Manual and Stormwater Pollution Prevention Manual. The design manual contains design standards and best

management practices (BMPs) that are intended to limit impacts to aquatic resources and downstream properties.

## **Clearing and Grading Ordinance**

The Clearing and Grading Ordinance regulates activities involving the clearing or removal of vegetation, excavation, grading, earthwork, gravel pits, dumping quarrying and mining. The ordinance is intended to minimize the adverse impacts associated with these activities' storm water impacts; reduce habitat loss; protect water quality and critical areas; facilitate long-term forestry and establish administrative procedures for the issuance of permits, approval of plans and inspections; and provide penalties for violations of the ordinance.

## **How do the ordinances generally apply?**

The requirements of the CAO, Surface Water Management and Clearing and Grading ordinances apply to many activities that alter land, water, or vegetation; or construct or alter structures or improvements. These requirements may in many cases require permits, as listed below.

Permits affected include the following:

- Commercial or Residential Building Permit;
- Binding Site Plan, Conditional Use Permit;
- Franchise Right-of-Way Construction Permit;
- Grading and Clearing Permit;
- Master Plan Development, Planned Unit Development, Right-of-Way Permit;
- Shoreline Conditional Use Permit;
- Shoreline Environment Redesignation;
- Shoreline Substantial Development Permit;
- Subdivision, Unclassified Use permit; Utility and Other Use Permit
- Variance, Zone Reclassification; or
- Any subsequently adopted permit or required approval not expressly exempted in the ordinance.

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## Part One – Administration

# Alterations and Alteration Exceptions

## Alterations

*Reference CAO Section 5 (recodified from K.C.C. 21A.24.190) and 137*

Alteration is a broadly defined term that includes almost any human activity that may affect a critical area or buffer. Whether the alteration is regulated or requires a permit to perform depends on the type of critical area and the type of activity.

Alterations are defined in the code as any human activity that results or is likely to result in an impact upon the existing condition of a critical area or its buffer.

Alteration specifically includes:

- Grading;
- Filling;
- Dredging;
- Channelizing;
- Applying herbicides or pesticides or any hazardous substance;
- Discharging pollutants except storm water;
- Grazing domestic animals;
- Paving;
- Constructing;
- Applying gravel;
- Modifying topography for surface water management purposes;
- Cutting;
- Pruning;
- Topping;
- Trimming;
- Relocating or removing vegetation; or
- Any other human activity that results or is likely to result in an impact to existing vegetation, hydrology, fish or wildlife or their habitats.

Alteration does not include passive recreation such as walking, fishing or any other similar activity.

The Critical Areas Ordinance divides critical areas into two basic categories. Those in which all alterations are allowed, and those where only specific alterations are allowed.

The critical areas in which all alterations are allowed, subject to compliance with development standards include:

- Critical aquifer recharge area;
- Coal mine hazard area;
- Erosion hazard area;
- Flood hazard area except in the severe channel migration hazard area;
- Landslide hazard area under 40% slope;
- Seismic hazard area; and
- Volcanic hazard area.

The critical areas where only specific alterations are allowed include:

- Severe channel migration hazard area;
- Landslide hazard area over 40% slope;
- Steep slope hazard area;
- Wetland and wetland buffers;
- Aquatic area and aquatic area buffers;
- Wildlife habitat conservation area; and
- Wildlife habitat network.

The allowed alterations are identified in a table in Section 137 of the ordinance, the alterations table discussed below. An allowed alteration may be subject to the permitting or approval requirements, such as a building, clearing or grading permit. Federal and state permits may also be required, particularly for alterations within wetlands and aquatic areas.

## **Alteration Table**

*Reference CAO Section 137*

Alterations that are allowed in the critical areas that have "limited" alterations are set out in a table in Section 137 of the ordinance. The table includes a list of alteration activities grouped by subject matter under the following headings:

- Structures;
- Grading;
- Clearing;
- Forest practices;
- Roads;
- Bridges or culverts;
- Utilities and other infrastructure;
- Recreation areas;

- Habitat and science projects;
- Agriculture; and
- Other.

The definition section of the code should be consulted since many of the listed activities include terms that are defined in the code. If the activity has the letter "A" in the cell for a column headed by a critical area, the activity is allowed in that critical area. If there is no letter "A" in the cell, the activity is not allowed in the critical area unless an alteration exception is approved. If the cell also includes a number, then the corresponding numbered condition also applies to that activity.

Specific development standards apply to each critical area. The standards apply to all alterations. See the individual critical areas chapters of this manual for a discussion of the alteration conditions and development standards applicable to each critical area.

## **Alteration Exceptions**

*Reference K.C.C. 21A.24.070*

If an alteration is not allowed in a critical area, the director of the Department of Development and Environmental Services may approve an alteration exception. An alteration exception may also be approved to modify a condition on the alteration table or to allow an alteration not included in the table. There are two types of alteration exceptions: linear alterations and non-linear alterations.

The director may also approve an alteration if the application of the critical areas ordinance denies all reasonable use of a property. If approved, a reasonable use exception may modify the alteration condition or development standard.

The Figure 1 depicts the critical area alteration exception and reasonable use process.

### **Linear Alteration Exceptions**

*Reference K.C.C. 21A.24.070.A.1*

A linear alteration is infrastructure that supports development that is linear in nature and includes:

- Public and private roadways;
- Public trails;
- Private driveways;
- Railroads;
- Utility corridors; and
- Utility facilities.

For linear alterations, the director may approve alterations to critical areas, critical area buffers, and critical area setbacks.

All of the following criteria must be met for approval:

- There is no feasible alternative to the development proposal with less adverse impact on the critical area;
- The proposal minimizes the adverse impact on critical areas to the maximum extent practical;
- The approval does not require the modification of a critical area development standard;
- The development proposal does not pose an unreasonable threat to the public health, safety or welfare on or off the development proposal site and is consistent with the general purposes of this chapter and the public interest; and
- The linear alteration must:
  1. connect to a public roadway, public trail, utility corridor or utility facility or other public infrastructure owned or operated by a public utility;
  2. be an alteration to a public roadway, public trail, utility corridor or utility facility or other public infrastructure owned or operated by a public utility; or
  3. be required to overcome limitations due to gravity.

## **Non-linear alteration exceptions**

*Reference K.C.C. 21A.24.070.A.2*

For non-linear alterations, the director may approve alterations to critical areas, except wetlands, aquatic areas and wildlife habitat conservation areas, critical area buffers, and critical area setbacks.

A non-linear alteration may be approved to Category II, III or IV wetlands for the development of a public school facility.

All of the following criteria must be met for approval:

- There is no feasible alternative to the development proposal with less adverse impact on the critical area;
- The alteration is the minimum necessary to accommodate the development proposal;
- The approval does not require the modification of a critical area development standard;
- The development proposal does not pose an unreasonable threat to the public health, safety or welfare on or off the development proposal site and is consistent with the general purposes of the critical areas ordinance and the public interest;

- If the alteration is for a dwelling unit, no more than 3,000 square feet or 10% of the site, whichever is greater, may be disturbed by structures or other land alteration including, grading, utility installations, landscaping, but not including the area used for onsite sewage disposal system;
- To the maximum extent practical access is located to have the least adverse impact on the critical area and critical area buffer; and
- The critical area is not used as a salmonid spawning area.

## **Reasonable Use Exception**

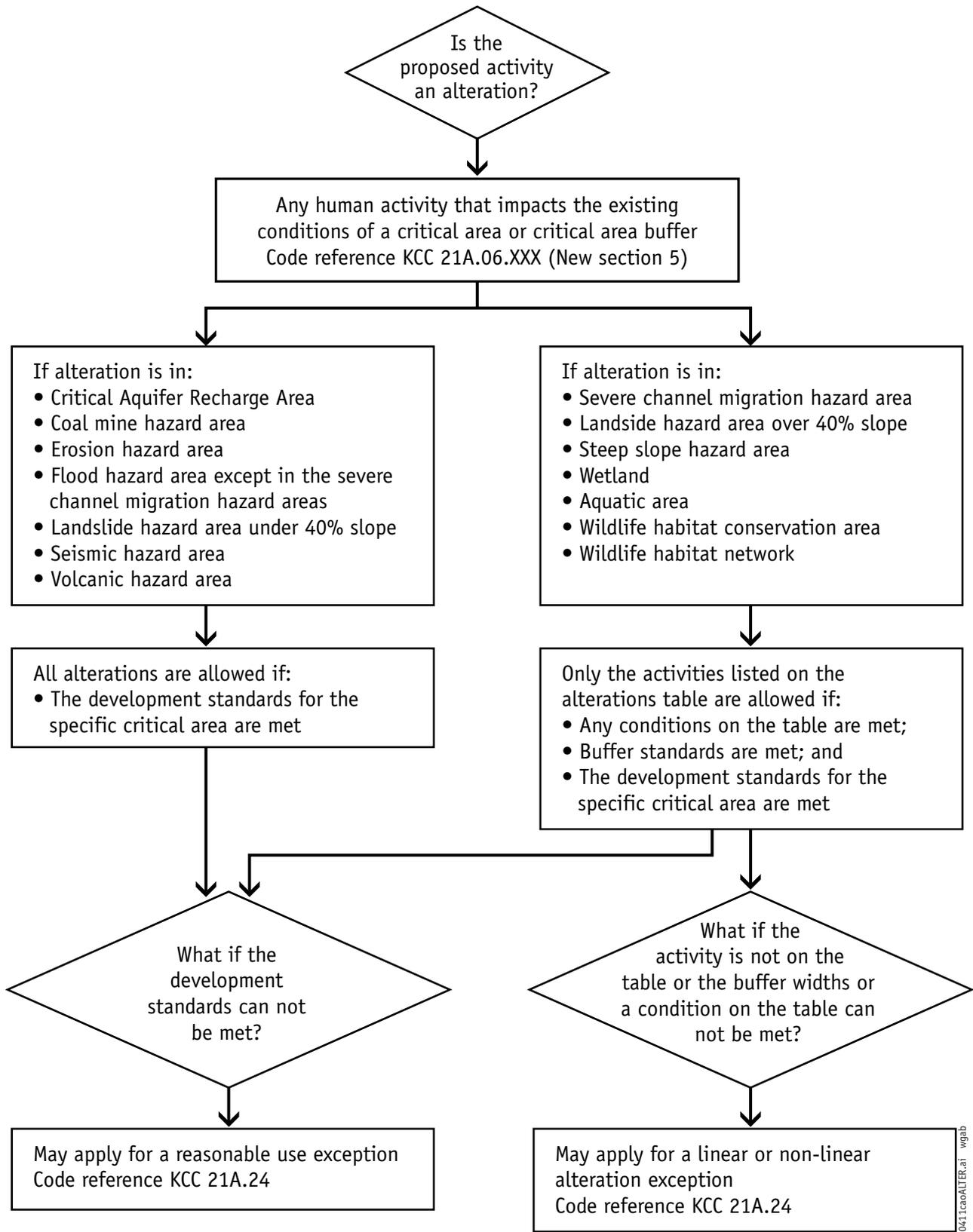
*Reference K.C.C. 21A.24.070.B*

If application of the Critical Areas Ordinance will leave no reasonable use of the property, the director may approve alterations to critical areas, critical area buffers, critical area setbacks, and critical area development standards.

All of the following criteria must be met for approval:

- There is no other reasonable use with less adverse impact on the critical area;
- The development proposal does not pose an unreasonable threat to the public health, safety or welfare on or off the development proposal site and is consistent with the general purposes of the Critical Areas Ordinance and the public interest;
- Any authorized alteration to the critical area or critical area buffer is the minimum necessary to allow for reasonable use of the property; and
- If the reasonable use is for a dwelling unit, no more than 3,000 square feet or 10% of the site, whichever is greater, may be disturbed by structures or other land alteration including, grading, utility installations, and landscaping, but not including the area used for onsite sewage disposal system.

# CRITICAL AREA ALTERATIONS



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## Part One – Administration

# Agriculture

### Agricultural activities in critical areas

*Reference CAO Sections 5, 137*

Agricultural activities are considered "alterations" under the critical areas regulations. How they are regulated depends upon the following factors:

- Whether the activity is currently existing or new. New includes existing activity that is expanding into a new area;
- The type of agricultural activity involved such as tilling the soil or grazing livestock;
- Whether the new activity will occur on lands defined as prior-cleared or lands defined as forested (*Section 137.D.54*);
- The type of critical area involved; and
- Whether or not the property has a farm plan approved to meet regulatory requirements.

### Existing agriculture activities

Existing agricultural activities that have been in "continuous existence" may continue without change in all critical areas. They may, however, be subject to other regulatory measures such as the federal Clean Water Act or federal and state regulations for the use of pesticides. Continuous existence includes cyclical operations and managed periods of soil restoration, enhancement or other fallow states associated with horticultural and agricultural activities.

### New or expanding agriculture activities

The expansion of existing agricultural activities into critical areas and the establishment of agricultural activities on new lands or parcels are subject to the critical areas regulations in K.C.C. 21A.24 and the Livestock Ordinance in K.C.C. 21A.30. The specific regulation depends upon the type of agricultural activity and critical area involved.

See the following discussion for what is allowed in specific critical areas.

## Types of agricultural activities alterations

Reference CAO Sections 3, 39, 109 (K.C.C. 21A.06.1390), 137, K.C.C. 21A.06.695, .700, .705, .710

Agriculture is not a defined term in the code. However many agricultural activities are specifically listed on the allowed alterations table in the code under the heading agriculture. (*Section 137*) Activities listed under the heading include:

- Horticulture activity including tilling, disking, planting seeding, harvesting, preparing soil, rotating crops and related activity;
- Grazing livestock;
- Construction or maintenance of livestock manure storage facility;
- Construction or maintenance of livestock flood sanctuary;
- Construction or maintenance of agricultural drainage; and
- Construction or maintenance of farm pond, fish pond or livestock watering pond.

Other agricultural related activities on the chart include:

Construction or maintenance of a farm field access drive.

The alteration table also contains other activities, such as building a nonresidential structure or removal of noxious weeds that are not strictly limited to agriculture but may occur in an agricultural setting.

While the term agriculture is not defined in the code, some of the specific activities relating to agriculture are defined, including:

- Agricultural drainage (Section 3);
- Farm field access drive (Section 39);
- Grazed or tilled wet meadow (Section 109, K.C.C. 21A.06.1390);
- Livestock, large livestock, small livestock and livestock sales. (K.C.C. 21A.06.695, .700, .705, .710)

## Types of critical areas

New agricultural activities or the expansion of existing agricultural activities is allowed in the following critical areas if in compliance with the development standards for each critical area:

- Critical aquifer recharge area;
- Coal mine hazard area;
- Erosion hazard area;
- Flood hazard areas except in the severe channel migration hazard area;

- Landslide hazard area under 40% slope; and
- Volcanic hazard area.

New agricultural activities or the expansion of existing agricultural activities are only allowed if in compliance with general development standards and with special conditions in the following critical areas:

- Landslide hazard areas over 40% slope;
- Steep slope hazard areas;
- Wetland and wetland buffers;
- Aquatic area and aquatic area buffers;
- Severe channel migration hazard area; and
- Wildlife area and wild life network.

### **Critical area special agriculture alteration conditions**

*Reference CAO Section 137*

#### **Landslide hazard areas over 40% and steep slopes**

The following activities in "continuous existence" are allowed:

- Horticulture activities;
- Grazing livestock;
- Maintenance of farm pond, fish pond or livestock watering pond .

The following activities are not allowed:

- Livestock manure storage facilities;
- Livestock flood sanctuaries; and
- Construction of agriculture drainage.

The following activities are allowed if in compliance with an approved farm management plan:

- Maintenance of agriculture drainage is allowed if the drainage is used by salmonids; and
- Construction of a farm field access drive .

#### **Wetlands and wetland buffers**

The following activities in "continuous existence" are allowed:

- Horticulture activities;
- Grazing livestock;

- Maintenance of livestock manure storage facility;
- Maintenance of agricultural drainage; and
- Maintenance of farm pond, fish pond or livestock watering pond .

The following new activities may locate in wetland buffers or in tilled or grazed wet meadows if there is an approved farm plan and the conditions listed below are met:

- Horticulture activities;
- Grazing livestock;
- Construction of livestock manure storage facility;
- Maintenance of agricultural drainage; and
- Maintenance of farm pond, fish pond or livestock watering pond .

The following conditions also apply:

- The entire site that includes the wetland buffer is predominantly involved in the practice of agriculture;
- All of the best management practices identified in the approved farm plan are installed and maintained; and
- The area that the agriculture activity is expanding into was not cleared as a result of a Class I, II, III or IV-S forest practice, permit, or is not more than 10,000 square feet and the vegetation cover consists of trees at a density of more than 90 trees per acre where the predominant diameter of the main stem is at least 4 inches as measured at breast height. This condition does not apply to crops managed for pulpwood, Christmas trees or ornamental nursery stock.
- Construction of livestock manure storage facility may occur in a grazed or tilled wet meadow if there is no other feasible alternative location available on the site and the facilities are located to the maximum extent practical as close to the outside edge of the buffer.

A farm field access drive may be constructed if in compliance with an approved farm plan.

Residential or nonresidential agricultural structures may locate in a tilled or grazed wet meadow if:

- The site is predominately used for agriculture;
- All of the best management practices identified in an approved farm plan or installed and maintained; and
- The location of the structure meets one of the following criteria:
  1. The structure is located in an area not used for crop production that is on or adjacent to existing impervious surface areas and no new impervious surface area is created closer to the wetland than the existing impervious area;

2. The structure is higher in elevation than the existing structures and no closer to the wetland than the existing structures; or
3. The structure is at a site that is determined to be the optimum site in an approved farm management plan.

### **Aquatic areas and buffers and severe channel migration areas**

The following activities in "continuous existence" are allowed:

- Horticulture activities;
- Grazing livestock;
- Maintenance of livestock manure storage facility;
- Maintenance of agricultural drainage; and
- Maintenance of farm pond, fish pond or livestock watering pond.

The following new activities may locate in aquatic area buffers or in severe channel migration hazard areas if there is an approved farm plan and the conditions listed below are met:

- Horticulture activities;
- Grazing livestock;
- Construction of livestock manure storage facility;
- Maintenance of agricultural drainage; and
- Maintenance of farm pond, fish pond or livestock watering pond.

The following conditions also apply:

- The entire site that includes the aquatic area buffer is predominantly involved in the practice of agriculture;
- All of the best management practices identified in the approved farm plan are installed and maintained; and
- The area that the agriculture activity is expanding into was not cleared as a result of a Class I, II, III or IV-S forest practice permit, or is not more than 10,000 square feet and the vegetation cover consists of trees at a density of more than 90 trees per acre where the predominant diameter of the main stem is at least 4 inches as measured at breast height. This condition does not apply to crops managed for pulpwood, Christmas trees or ornamental nursery stock.
- Construction of livestock manure storage facility may occur in a severe channel migration hazard area only if there is no other feasible alternative location available on the site and the facilities are located where it is least subject to risk from channel migration.

A farm field access drive may be constructed if in compliance with an approved farm plan.

Non-residential agricultural structures may be located in the severe channel migration portion of an aquatic area buffer only if:

- No other feasible alternative location is available on the site;
- The structure is located where it is least subject to risk from channel migration;
- The structure is not used to house animals or store hazard substances; and
- The total footprint of all accessory structures that are located in the severe channel migration hazard area will not exceed the greater of 1,000 square feet or 2% of the severe channel migration hazard area that is located on the site.

### **Wildlife habitat conservation areas and wildlife habitat network**

The following activities in "continuous existence" are allowed:

- Horticulture activities;
- Grazing livestock;
- Maintenance of livestock manure storage facility;
- Maintenance of agricultural drainage; and
- Maintenance of farm pond, fish pond or livestock watering pond .

The following new activities may locate in wildlife habitat conservation areas and wildlife habitat networks if there is an approved farm plan and the conditions listed below are met:

- Horticulture activities;
- Grazing livestock;
- Construction of livestock manure storage facility;
- Maintenance of agricultural drainage; and
- Maintenance of farm pond, fish pond or livestock watering pond .

The following conditions also apply:

- The entire site that includes the wildlife habitat conservation area and wildlife habitat network is predominantly involved in the practice of agriculture;
- All of the best management practices identified in the approved farm plan are installed and maintained; and
- The area that the agriculture activity is expanding into was not cleared as a result of a Class I, II, III or IV-S forest practice permit, or is not more than 10,000 square feet and the vegetation cover consists of trees at a density of more than 90 trees per acre where the predominant diameter of the main stem is at least 4 inches as measured at breast height. This condition does not apply to crops managed for pulpwood, Christmas trees or ornamental nursery stock.

A farm field access drive may be constructed if in compliance with an approved farm plan.

Non-residential agricultural structures may be located in the wildlife habitat conservation area and wildlife habitat network if no clearing, external construction or other disturbance occurs in the wildlife habitat conservation area and wildlife habitat network during breeding seasons established under Section 198.

## **Farm Management Plans**

*Reference CAO Section 138*

Farm Management Plans are one of several options for landowners to achieve the goals of the Critical Areas Ordinance.

- Farm plans are obtained from:

King Conservation District (KCD)  
935 Powell Avenue SW  
Renton, Washington. 98055  
Phone (425) 277-5581

The KCD develops and approves a farm plan according to the planning process, standards, and best management practices in the Field Office Technical Guide as written by the Natural Resources Conservation Service (NRCS) and modified to reflect resource conditions of northwest Washington. The process is designed and conducted to simultaneously address the needs of the agricultural operation and the needs for resource protection on a specific site.

- In the event that the KCD is unable to provide services to a landowners, the landowner may obtain an alternate agricultural plan from:

Department of Natural Resources and Parks  
King Street Center  
201 South Jackson Street,  
Seattle, WA. 98104  
Phone (206) 296-7800

## **When farm plans are required**

Farm plans related to this code are only required if a landowner:

- Needs to conduct a new activity that is permitted in Section 137 only in compliance with an approved farm plan. Examples include removing sediment and vegetation from agricultural drainage that contain fish, locating a structure in a wetland or stream buffer, expanding horticulture into an area that was legally cleared but is now considered to be in a regulated buffer;
- Chooses to conduct a regulated activity according to the practices and conditions developed through the farm planning process instead of according to the practices and conditions otherwise described in the code;
- Wants to avoid the costs and time of the permit process for activities that may be implemented according to the specification or practices of a farm plan;
- Wants the advantages of the "small site drainage review process" for large agricultural structures that may otherwise require full drainage review related to a county building permit; or
- Has received an order to implement a farm plan as the result of an enforcement case under the Water Quality Ordinance or the Livestock Management Ordinance.

Farm plans are not required if the landowner chooses to meet the regulatory buffer standards in the code or to use the permit process to obtain an alteration exception or reasonable use exemption.

### **Voluntary farm plans**

Farm plans developed and approved by the KCD are voluntary. They should be used by landowners who want to improve management of their land, water, animals, crops, pests, etc. Farm plans may be required to obtain federal, state or local funding to implement practices that will improve an agricultural operation. Farm plans with their scientifically-backed standards and landowner focused planning process are sometimes recognized by government as the most appropriate tool for agricultural landowners to achieve regulatory goals or outcomes. For example, a Dairy Nutrient Management Plan – a type of farm plan – is required for dairies of a certain size as a tool to meet state water quality standards.

In the farm planning process, the landowner and farm planner identify the best combination of practices to meet the operational needs of the farming operation and to meet code standards. Implementation schedules, funding sources and realities are included in the process. Results are monitored and strategies are altered until the goals are met.

### **Required farm plans**

The KCD will develop farm plans that are to be used for regulatory purposes in the same way as voluntary farm plans – all approved to NRCS standards. The farm plans that landowners submit to the county for the benefits of alternative treatment under the standard regulations, may differ from voluntary farm plans in following ways:

- The portions of the farm plan that relate to the activity that is regulated under the code must be implemented as approved by the KCD and not revised in significant ways;
- The county may confirm the implementation of the farm plan at some point in the future if needed;
- If an agricultural structure is allowed in a buffer, future landowners must know that it is contingent upon the property being in agriculture and the farm plan implemented, and may not be used or expanded for non-agricultural uses.

Farm plans developed after 1992 and farm plans developed to meet the criteria of the livestock management ordinance are valid for existing activities. They may need to be amended should the landowner want to expand agriculture into new areas of the property, build roads, build structures that require a permit, or undertake drainage maintenance or any other activity in a critical area that is permitted by code only in compliance with an approved farm plan.

A KCD approved farm plan registered with the county is required for an agricultural landowner to conduct the following activities (no permit is needed):

- Installing a field access road, including a bridge for a livestock crossing over certain sizes of streams in certain locations, in critical area buffers and in tilled or grazed wet meadows;
- Building a covered manure compost shed of less than 240 sq ft in aquatic area and wetland buffers, grazed or tilled wet meadows, and fish and wildlife habitat conservation areas;
- Maintaining drainage functions in agricultural waterways (a state HPA may be needed); and
- Installing confinement areas of specified materials, depths and area in aquatic area and wetland buffers, grazed or tilled wet meadows, and fish and wildlife habitat conservation areas.

If the field access road, manure compost shed, drainage maintenance activity, confinement area – or other practice as identified – cannot be installed or conducted according to the conditions recommended by the farm plan process, the KCD will send the landowner to the county to proceed with the regular permit process.

A KCD approved farm plan registered with the county is required if an agricultural landowner proposes to conduct the following activities that also require a permit:

- Siting an agricultural structure over 240 square feet in an aquatic area or wetland buffer, a grazed or tilled wet meadow, or a fish and wildlife habitat conservation area (otherwise precluded unless accepted through a variance or reasonable use process);
- Siting a residence in a grazed or tilled wet meadow (otherwise precluded without going through the reasonable use process succeeds).

## Planning What is a Farm Plan?

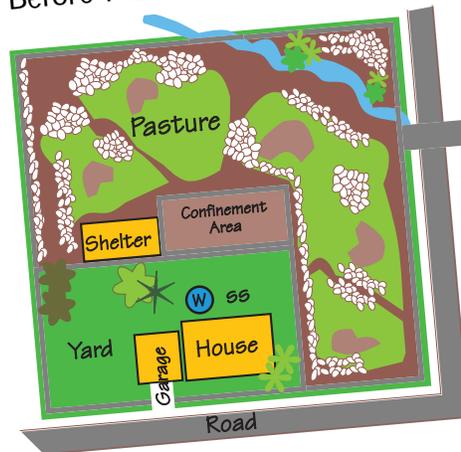
A farm plan is a document developed by your Conservation District and you, the farmer or landowner. It is a series of actions developed to meet a farmer's goals while protecting water quality and the natural resources. Some of the things considered in a farm plan are farm size, soils type, slope of the land, proximity to streams or water bodies, type of livestock or crops, the farmer's goals, resources such as machinery or buildings and finances available. An important point to remember is you don't have to be a commercial operation to have a farm plan developed for you - the King Conservation District works with farms of all sizes, from backyard horse owners to dairy and beef operations!

First, the Conservation District will address potential water quality concerns by suggesting changes that may be made. Possible examples include streamside fencing, gutters and downspouts and manure management techniques. Then the Conservation District will look at other changes that can be made to improve farm productivity and reduce the impact on the natural resources. Some examples here include pasture renovation, weed management techniques, creating sacrifice areas, cross fencing, and pasture restoration of livestock. The Conservation District offers technical assistance on questions such as what grasses to plant, how to build a fence and when to mow.

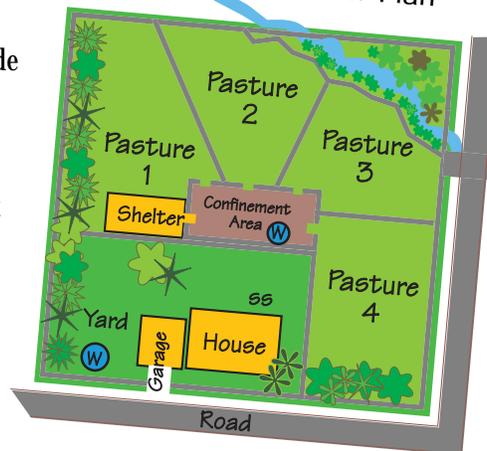
The suggestions made by the Conservation District are reviewed by the farmer. Together they develop a plan and schedule for accomplishing the changes they decide on. The farmer may decide to act on some of the changes in the first year and others in coming years - farm plans often

include work over a number of years. Once the farmer and the Conservation District have made their decisions, a tentative implementation schedule is set and their plans are recorded. One copy is kept with the farmer and one is kept on record with the Conservation District. Revisions of the plan can be made as the goals and needs of the farmer change.

Before Plan



After Plan



Another important point is that all services provided by the KCD are free and without obligation. The King Conservation District is a non-regulatory, non-enforcement Municipal Corporation of the State of Washington supported by grants and a conservation assessment. It is charged with the duties of protecting the soil and water of King County, particularly as it relates to farming and animal keeping practices, through technical assistance and education.

A farm plan may assist you in meeting the requirements of King County's Livestock Management Ordinance. The Ordinance was passed by the King County Council in 1994 with enforcement commencing on January 1, 1999. It requires livestock owners in King County to meet certain management standards, which will result in an improved environment within the county. Additional information about

the Ordinance may be found on the Livestock Programs page of the King County website.

If you would like to help your farm become a better place for you, your animals and the environment contact the Conservation District at (206) 764 3410 and talk to a farm planner.

## Part One – Administration

# Rural Stewardship Planning

## Flexible alternatives for rural properties

Under King County's new Critical Areas Ordinance, rural landowners have the option to pursue a Rural Stewardship Plan if they would like to achieve some flexibility from standard critical areas protections when developing their property. The planning process offers landowners an opportunity to tailor wetland and stream buffers to their land use needs in exchange for committing to implement a management plan that will protect natural resources over the long term.

## Stewardship plans are available to all rural landowners

A Rural Stewardship Plan will help you develop a comprehensive, long-term plan for your property that includes resource protection and stewardship activities. Only properties zoned Rural Residential (RA) are eligible for the site-specific flexibility with CAO buffers allowed by a Rural Stewardship Plan. A Rural Stewardship Plan may not be the best option to achieve the goals of all RA landowners.

Properties with multiple uses, including rural residences, agriculture and forestry, can be addressed within a rural stewardship although there are unique benefits achieved through farm and forestry plans that might be more appropriate. Rural landowners should assess all three programs and determine which best suits their needs.

## Allowed modifications and site-specific protections

There are several types of critical areas that can be directly addressed through a Rural Stewardship Plan:

- **Aquatic areas** – including rivers, streams, lakes, ponds, estuaries, marine shorelines and shallow aquifers;
- **Wetland areas** – are inundated by surface or groundwater often enough to support specific plants and animals unique to those areas; and
- **Wildlife areas** – contain critical habitats for species found to be of significant importance through King County's Comprehensive Plan. These areas include active nesting and breeding sites for nine priority species and the mapped wildlife habitat network that links wildlife areas with critical areas, trails, parks, priority habitat, and other open space to allow wildlife migration.

Buffers or other critical areas such as critical aquifer recharge areas or geologic hazard areas (i.e., steep slopes or landslide hazard areas) cannot be modified through a Rural Stewardship Plan.

As authorized in K.C.C. 21A.24.134 and 139, properties zoned Rural Residential (RA) may, via a Rural Stewardship Plan, achieve modifications for:

- Minimum buffer widths for aquatic areas;
- Minimum buffer widths for wetlands;
- Minimum buffer widths for wildlife habitat conservation areas; and
- Maximum clearing restrictions.

Allowed buffer modifications and clearing restrictions will vary between plans, depending on elements including:

- Basin condition that the property lies in, as identified in the Basin and Shoreline Conditions Map;
- For sites with aquatic areas, the location of the site within the drainage basin, with sites in upper drainage basins having different requirements than sites in lower drainage basins;
- Existing critical area buffer condition, categorized as high, medium, or low;
- The ecological function of any wetlands;
- Site specific wildlife habitat evaluation, if applicable; and
- The size of the property, with properties greater than 5 acres having different clearing requirements than properties that are 5 acres or smaller.

Modifications to the noted critical area buffers will only be allowed in return for developing a long-term stewardship plan that incorporates Best Management Practices (BMPs) to maintain, restore or enhance critical areas, buffers and native vegetation. King County staff will assist landowners in selection BMPs that will create a viable stewardship plan.

Landowners who complete Rural Stewardship Plans may be eligible for tax benefits through the Public Benefit Rating System (PBRs).

## **Goals and objectives of the Rural Stewardship Plan**

An approved Rural Stewardship Plan must achieve the following goals, listed in priority order:

1. To avoid impacts to critical areas to the maximum extent practicable;
2. If there is the potential to impact more than one category of wetland, type of aquatic area, or more than one species of native fish or wildlife, impacts to the

- highest category of wetland, type of aquatic area, or most protected fish or wildlife species should be avoided first;
3. To maintain or enhance the natural hydrologic systems on site to the maximum extent practicable;
  4. To maintain, restore or enhance native plants;
  5. To maintain, restore or enhance the function and value of critical areas or critical area buffers;
  6. To minimize habitat fragmentation and enhance corridors between wetlands, riparian corridors, wildlife habitat conservation areas and other priority habitats;
  7. To minimize development impacts by implementing BMPs and meeting performance standards over the life of the development; and
  8. To monitor the effectiveness of stewardship practices and to implement additional practices to maintain, restore or enhance critical area functions when necessary.

## **Elements of a Rural Stewardship Plan**

The Rural Stewardship Planning process consists of several steps directed towards producing a final plan that meets the goals referenced above and that is efficient and comprehensive for the landowner. The steps are:

1. Complete an inventory of existing conditions on the property. This will include identification of natural resources, critical areas and potential impacts to them. Specific elements of this inventory include:
  - Site assessment checklist;
  - Critical areas identification and/or designation; and
  - Site map of existing conditions, land uses and vegetation.
2. Identify protection requirements for these critical areas based on their classification and functions. This will result in development of a site map showing modified buffer and clearing restrictions.
3. Analyze potential impacts to these critical areas based on proposed activities. This will result in a site map of proposed activities and buffers.
4. Develop a plan for implementation and monitoring. Plan elements include:
  - A BMP plan;
  - An implementation timeframe;
  - A monitoring plan with performance measures, monitoring schedule and strategy for adaptive management; and
  - A bond agreement for landowners proposing site development.

## **Roles, responsibilities and available resources**

Landowners are responsible for completing Rural Stewardship Plans and submitting them to King County for approval, but there are many resources to help landowners through the process. Resources available include:

- **Technical assistance from King County Staff.** Water and Land Resources (WLRD) staff will be available at no charge for site visits, guidance on how to develop necessary Rural Stewardship Plan products and support in navigating through the process. Department of Development and Environmental Services staff will be available for technical assistance related specifically to permit needs on a fee basis.
- **An instructional handbook** to guide the user through the Rural Stewardship Planning process. The handbook will lead the landowner through each element required in the final plan and will include informational resources and examples of plan components.
- **An optional classroom workshop** to introduce landowners to the Rural Stewardship Plan process; necessary plan elements; roles and responsibilities; timeframes; and stewardship principles.
- **Additional Web-based information** to help a landowner determine whether a Rural Stewardship Plan is appropriate and how to get more information.

## More information

The Rural Stewardship Plan Public Rule, issued by the King County Executive, is available at: <http://www.metrokc.gov/recelec/archives/sysindex.htm>. The Public Rule reference and a hand handbook for rural stewardship planning will provide more detailed information about the process and components of a Rural Stewardship Plan and will assist landowners in developing a plan for their property.

King County staff can answer general questions about the benefits of a Rural Stewardship Plan and help you determine whether your property would be best served by this option.

For more information on Rural Stewardship Plans, please contact the Rural Stewardship Planning staff at 206-296-6519.

More information, including the draft "Rural Stewardship Planning Handbook", is available online at: <http://dnr.metrokc.gov/wlr/cao>.

## Part One – Administration

# Forest Stewardship Plan

## What is a Forest Stewardship Plan?

A Forest Stewardship Plan is a management plan that helps you reach your individual ownership objectives and integrates the protection and/or enhancement of multiple forest resources.

Developing a stewardship plan will help you clarify your short and long-term objectives for your property. Through the process, you analyze conditions of your forest resources, determine what resource protection or enhancement measures would be beneficial and develop an organized sequence of activities to accomplish your objectives.

## When is a plan required in King County?

- To apply for Timberlands or the Forest Stewardship Land category of the Public Benefit Rating System current use taxation programs.
- To apply for a building permit within the Forest Production District.
- To accompany a Transfer of Development Rights or Forest Legacy application.
- To receive recognition as a "Stewardship Forest" (property sign and certificate).
- To avoid being subject to a Forest Practice Moratorium in conjunction with a Washington State Class 2, 3 or 4S Forest Practice Permit, or a King County Non-Conversion Class 4G Permit.
- To obtain a Class 4G Non-Conversion Permit.
- To practice forestry in a resource tract of a cluster development or in a resource area.
- To allow in critical area buffers firewood cutting, habitat restoration, and vegetation removal for forest fire prevention.

## How do I get a Forest Stewardship Plan for my property?

- You can participate in a Forest Stewardship class with instruction and personalized coaching from natural resource professionals in King County. These classes are offered in cooperation with Washington State University Extension, King County Department of Natural Resources and Parks, and Washington State Department of Natural Resources.

- You can hire a natural resource consultant to prepare a plan for you.
- You can write your own plan. Technical assistance is available from King County foresters to help you know what to include and how to evaluate your resources.

## Criteria to be met for plan approval

- Must be signed by the landowner.
- Must address protection and/or enhancement of the forest resource categories as described in the Forest Stewardship Plan Public Rule: <http://www.metrokc.gov/recelec/archives/policies/put819pr.htm>.
- Must cover a timeframe of at least 10 years. Longer planning range is encouraged.
- Must cover the entire forested ownership and/or any land that will be planted to forest vegetation.
- Recommended management activities should be consistent with stated landowner objectives.

The Forest Stewardship Plan description, required elements and format can be found posted at the King County Records and Elections Policy Web site, <http://www.metrokc.gov/recelec/archives/policies/put819pr.htm>.

For further questions regarding the Forest Stewardship Plan, please contact a King County Forestry Program Staff or call 206-296-6519.

## Forest Stewardship Plan Public Rule

Available at: <http://www.metrokc.gov/recelec/archives/policies/put819pr.htm>.

## Requirements for forest harvest

In Washington State, the state has jurisdiction over forest practices through the State Forest Practices Act, RCW 76.09, and the State Forest Practices Rules, Title 222 WAC. The responsible agency is the Washington State Department of Natural Resources (WDNR), and for King County, the South Puget Regional office in Enumclaw.

For the most part, the state retains jurisdiction over forest practices on lands being retained in forestry (New Section 131, CAO and New Section 3.B C&G), and King County has jurisdiction over practices related to conversion of the property to another use. Class IV General Forest Practices are those on lands platted after 1960 and those that have been or are being converted to another use. As provided in RCW 76.09.240 in September 1999, the state transferred the administration and enforcement of Class IV General Forest Practices to King County.

## **Class IV General Conversion Forest Practice**

If the forest practice is related to a conversion from forestry to another use or involves permanent clearing which will not be replanted, the activity requires a King County Clearing Permit and is subject to the county development standards.

## **Class IV General Non-Conversion Forest Practice (New Section 57, CAO)**

If the forest practice takes place on a property that was platted after 1960 but is not a conversion to another use, and the property will be retained in forest use, the practice may be eligible for a King County Class IV General Non-Conversion Permit. (Refer to New Section 131, CAO). In order to qualify for a Class IV General Non-Conversion Permit, the applicant must have a long-term Forest Management Plan, also known as a Forest Stewardship Plan, and must sign a statement of intent not to convert the property from forestry within six years. Although the county administers the permit, it recognizes that the property is remaining in forest use and requires that the permit meets the standards in RCW 76.09 and Title 222 WAC, rather than King County development standards.

## **Forest practices moratorium**

In order to receive a Forest Practice Permit from the Washington Department of Natural Resources, an applicant must sign a Notice of Moratorium on Non-Forestry Uses of the Land as required by RCW 76.09.060. The notice states that the land subject to the permit application will not be converted to an active use incompatible with timber growing within six years of permit approval. A copy of the notice is submitted to the local jurisdiction, which shall deny any applications for permits or approvals relating to non-forestry uses of the property. In King County, the moratorium is noted in the permit tracking data base used by the Department of Development and Environmental Services (DDES). In addition, for those forest practices outside the Forest zone, the notice is filed with King County Records per RCW 65.04. Similarly, King County places a six-year moratorium on properties harvested under a Class IV General Non-Conversion Permit.

King County will deny any development proposal on properties subject to a Forest Practice Moratorium for a period of six years after the forest practice commenced (K.C.C. 16.82.140). There are two ways the applicant can avoid the effects of the moratorium before commencing the forest harvest. One is to develop a Conversion Option Harvest Plan, which is a harvest plan reviewed and approved by DDES and attached to the state Forest Practice Permit. The other is to harvest consistent with a Forest Management Plan that is approved by King County and that excludes the area proposed for development. The purpose of the latter is to allow the applicant to conduct forest practices called for in his/her Forest Management Plan without

restricting the ability to build or remodel on the part of the property not covered by the Forest Management Plan. After the harvest, the moratorium can be lifted only with DDES Director determination that the applicant was the unknowing subject of criminal trespass, timber theft or fraud or the site is fully restored, meeting the requirements of K.C.C. 16.82.140.

## **Conversion Option Harvest Plan**

With a Conversion Option Harvest Plan (COHP), forest practices can be conducted under state jurisdiction while the applicant retains the option to convert the property to another use within six years. Through a COHP, the applicant meets all development standards required by the county, thereby avoiding the Forest Practice Moratorium. The applicant applies to WDNR for the Forest Practices Permit and to DDES for the COHP.

## **Forestry resources**

### **King County Forestry Program:**

<http://dnr.metrokc.gov/wlr/lands/forestry>

#### **Services:**

Technical assistance with Forest Stewardship Plans

#### **Contact:**

Bill Loeber, Forester – 206-296-7821, [bill.loeber@metrokc.gov](mailto:bill.loeber@metrokc.gov)

#### **Additional information:**

Forest Stewardship Plan Public Rule

<http://www.metrokc.gov/recelec/archives/policies/put819pr.htm>

### **King County Department of Development and Environmental Services (DDES)**

<http://www.metrokc.gov/ddes/>

#### **Services:**

Permitting for Non-Conversion class 4G permits and Conversion Option Harvest Plans

#### **Contact:**

- Jim Ballweber – 206 296-6779, [jim.ballweber@metrokc.gov](mailto:jim.ballweber@metrokc.gov)
- Jon Pederson – 206-296-6781, [jon.pederson@metrokc.gov](mailto:jon.pederson@metrokc.gov)

**Additional information:**

Conversion Option Harvest Plan (COHP) <http://www.metrokc.gov/ddes/forest/>

**Washington State Department of Natural Resources**

<http://www.dnr.wa.gov/>

**Services:**

- Permitting for Class 2, 3 and 4S Forest Practice permits
- Technical assistance to small forest landowners

**Contact:**

- South Puget Sound Region Office  
360-825-1631
- Small Forest Landowner Office  
360-906-1415  
<http://www.dnr.wa.gov/sflo/>  
sflo@wadnr.gov

**Additional information:**

- Forest Practices Division  
<http://www.dnr.wa.gov/forestpractices/>  
360-902-1400
- Forest Practice Act  
<http://www.leg.wa.gov/RCW/index.cfm?fuseaction=chapterdigest&chapter=76.09>
- Forest Practice Rules  
<http://www.dnr.wa.gov/forestpractices/rules/>
- Forest Practice Board Manual  
<http://www.dnr.wa.gov/forestpractices/board/manual/>
- Backyard Forest Stewardship  
<http://www.dnr.wa.gov/htdocs/rp/stewardship/bfs/WESTERN/introduction.html>

**Washington State University Extension, Forestry Education Program**

<http://www.metrokc.gov/dchs/csd/ws-u-ce/Forestry/index.htm>

**Services:**

Forest stewardship classes

**Contact:**

Amy Grotta – 206-205-3132, [Amy.Grotta@metrokc.gov](mailto:Amy.Grotta@metrokc.gov)

**Additional information:**

List of forestry consultants

<http://www.metrokc.gov/dchs/csd/ws-u-ce/Forestry/forestryconsult.htm>

## Part One – Administration

# Critical Areas Designation

## Critical Areas Designation

*Reference K.C.C. 21A.24.500 - .510 (CAO Sections 209-211)*

The critical areas designation process enables a property owner or applicant to determine the conditions and constraints on site development. Through this process a property owner can establish a site plan that will be vested for a period of five years. The scope of the process can be adapted to meet the property owner's needs. Options Include:

1. Limited Scope Critical Areas Designations – address only those issues and that portion of the property requested by the applicant.
2. Comprehensive Critical Areas Designations - address all critical areas in the proposed development area. (Required for projects that propose new onsite septic and/or wells.)
3. The consolidated review option – adds review of residential fire access, addressing, and site engineering, allowing all site issues to be pre-certified and vested.

## Onsite septic system and well location approval

*Reference K.C.C. 21A.24.510*

King County requires a Certificate of Sewer Availability and Water Availability at the time of application for a residential building permit or for the subdivision of land. If the development proposal relies on either a new onsite septic system or new well, Seattle King County Department of Public Health must approve the location. A critical areas designation is required as part of the public health application process.

## Application requirements

The following information is required at the time a critical areas designation is requested:

1. A completed Critical Areas Designation Application Form;
2. Three copies of a site plan drawn to an engineering scale;

- The site plan must include a north arrow, location and dimensions of all property lines and easements, including any known native growth protection easement areas or special setback areas.
  - If the request for site designation is for less than the entire parcel, the area to be evaluated must be clearly demarcated and dimensioned on the site plan.
  - Existing improvements, including structures and roads, on the property must be identified.
  - Any known rivers, streams, swales, springs, seeps, wetlands, ponds, steep slopes or areas of saturated ground on the property or within 300 feet must also be identified.
3. Fees. The fee for a Critical Areas Designation will vary according to the nature of the request and the size and complexity of the property.
- A deposit of \$796.95 covering the first 5.5 hours of review must be submitted with the application.
  - The fee will be calculated based on the hourly rate of \$144.90 and the actual hours worked.
  - If the consolidated review option is chosen, the total fee is fixed at \$1,850.
  - At the time of application, the applicant must submit either the **deposit** of \$796.95 for a Critical Areas Designation or the **fixed fee** of \$1,850 for a designation with the consolidated review option.

Optional supplemental information:

- Topographic or boundary surveys;
- Aerial photos;
- Prior permits (building, grading, onsite septic or well etc.) or title notification of sensitive or critical areas;
- Special studies including: wetland reconnaissance reports, wetland delineations, aquatic area or stream reports, and geotechnical or soils reports;
- Technical information reports or drainage studies; and
- A vicinity map showing the general location of the property. If the property is located in a difficult to find location, include driving directions.

## Site preparation

Prior to application, the property boundaries need to be clearly flagged. If the site designation request is only for a portion of the property, the boundaries of the area covered by the request must be flagged prior to the initial site investigation. Failure to clearly flag the property may result in increased costs and delays in completing the site designation.

## **Additional information**

The application form and related information for the critical areas designation can be found at: <http://apps01.metrokc.gov/www6/ddees/scripts/forms.cfm>.

## Part Two – Critical Areas

# Coal Mine Hazard Areas

Coal mine hazards in King County are related to past mining activities in some areas, for example areas like Ravensdale, along Black Nugget Road, near Black Diamond and in the Coal Creek area (place names often reflect geologic setting). Coal miners were active in King County in the late 19th and early 20th centuries, and they exploited both surface exposures in open pit mines and deeper coal beds with underground mines. For the most part, the coal seams are thin and discontinuous compared to others exploited elsewhere, which means that they are uneconomical today.

The hazards that are present from past mining activities are several (including dangers of open underground workings and discharges of acid-rich mine waters) but the King County Zoning Code only addresses one category, which is the nature of the foundation materials beneath proposed structures and the likelihood of the collapse of underground workings. If there are no underground workings, the only “hazard” is the potential presence of uncontrolled fill (mine waste) that might not provide suitable foundation support. If underground workings are present, then geologic and engineering studies are sometimes required to both quantify the nature of the hazard (basically, the potential for surface subsidence) and to recommend measures to deal with the hazard. The potential for catastrophic mine collapse can make a lot unbuildable. Because accurate mine maps are not always available, some mining sites are isolated with a recommended “buffer” that separates the area of potential collapse from any future development.

The first step when reviewing for potential coal mine hazards is to examine the nature of mining at the site and classify the hazard level. This is typically done through a critical area report prepared by a consulting geologist or geotechnical engineer. The type of developments that are allowed depends upon the classification of the hazard.

## Classifications

For the purposes of regulation, coal mine hazards are classified into three types of hazard:

1. "Declassified" coal mine hazard areas are those areas where the risk of catastrophic collapse is not significant and that the hazard assessment report has determined do not require any special engineering or hazard mitigation. These areas typically include sites not underlain by underground workings

and sites underlain by underground workings that are in excess of 300 feet below the surface.

2. "Moderate" coal mine hazard areas are those areas that pose significant risk of property damage because of coal mine subsidence, but that can be mitigated through special engineering or architectural recommendations. These areas often include areas underlain or directly affected by abandoned underground workings that are less than 300 feet deep or with overburden cover-to-seam thickness ratios of less than 10 to one, depending on the inclination of the seam.
3. "Significant" coal mine hazard areas include those sites that pose a significant risk of catastrophic surface collapse, such as unmitigated openings (portals, adits, mine shafts, sinkholes, improperly filled mine openings) and other areas of past or probable surface collapse, including shallow subsurface workings extending to a depth of 100 feet.

## **Development standards**

Within declassified coal mine hazard areas, all alterations are allowed without mitigation because it has been determined that there is no effective hazard. Within moderate and severe hazard areas, the code requires that:

1. Within moderate coal mine hazard areas, the risk of structural damage be minimized (through effective mitigation); and
2. Within severe coal mine hazard areas, the risk of personal injury be minimized or eliminated (again through mitigation).

## **Allowed alterations**

All alterations are allowed in declassified hazard areas. Within moderate coal mine hazard areas and coal mine byproduct stockpiles (areas of uncontrolled fill), all alterations are allowed provided the risk of structural damage is minimized. Within severe hazard areas, the following alterations are allowed:

1. All grading, filling, stockpile removal and reclamation activities in accordance with a hazard assessment report for the purposes of mitigating threats to human health, public safety, environmental restoration, and property protection, if accompanied by plans and as-built drawings prepared by a professional engineer and submitted to the department for review;
2. Private road construction when significant risk of personal injury is eliminated or minimized;
3. Building of less than 4,000 square feet of floor space that contains no living quarters or places of employment or public assembly when significant risk of personal injury is eliminated or minimized; and
4. Additional land activities if consistent with recommendations within any mitigation plan required by a hazard assessment report.

# Erosion Hazard Areas

Erosion hazard areas are those areas thought to be underlain by soils that are subject to severe erosion when exposed. The definition for erosion hazard areas includes, but is not limited to, several particular soil types that commonly erode rapidly because of the nature of their constituents and the engineering properties of the soil. The mapped extent of erosion hazard areas is based upon past regional soils mapping by several government agencies and is somewhat generalized. For this reason, specific site evaluations are sometimes necessary to quantify the actual nature and degree of erosion hazard. Often, such investigations are part of larger studies that evaluate landslide or steep slope hazards.

## Development standards

To insure that development within erosion hazard areas does not result in erosion or sedimentation problems, either within the affected parcel or on adjacent properties, clearing and grading is sometimes regulated and erosion-control techniques are sometimes mandated. These restrictions commonly affect larger developments more than smaller ones, and many single-family residential proposals are not significantly impacted. The regulations state that:

1. Clearing in an erosion hazard area is only allowed from April 1 to October 1, except that clearing of up to 15,000 square feet may occur at any time (most single-family residences fall well below this amount of clearing).
2. Clearing of noxious weeds may occur at any time.
3. Forest practices (logging) regulated by the department are allowed at any time in accordance with a Clearing and Grading Permit if the harvest is in conformance with applicable state laws.

All subdivisions, short subdivisions, binding site plans, or urban planned developments within erosion hazard areas are required to retain all existing vegetation until the applicable building permits are issued for individual lots. Erosion and sedimentation control plans are considered under the building permit review. However, larger-scale clearing may be approved if it is part of a larger-scale grading plan.

If the department determines that erosion from a development site poses a risk of damage to downstream wetlands or aquatic areas, then regular monitoring of the development activity may be required. If water quality standards are not met, further development work may be suspended until such standards are met.

## **Allowed alterations**

All alterations are allowed provided they are done using appropriate sedimentation and erosion control practices. Erosion and sedimentation control plans are commonly required at time of permit application review, especially for larger residential and commercial developments.

## Part Two – Critical Areas

# Flood Hazard Areas

## Flood Hazard Areas Fact Sheet

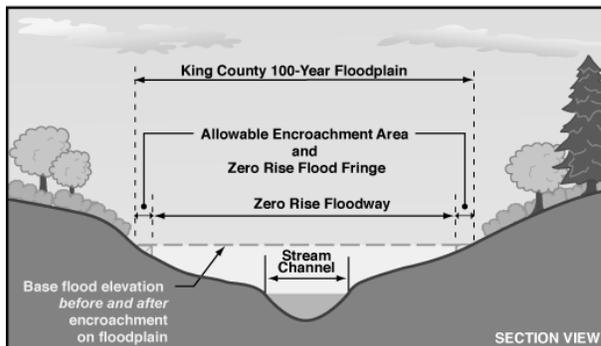
### Components of flood hazard areas

Reference CAO Sections 137, 161, 162, 163, 164, 165, 166

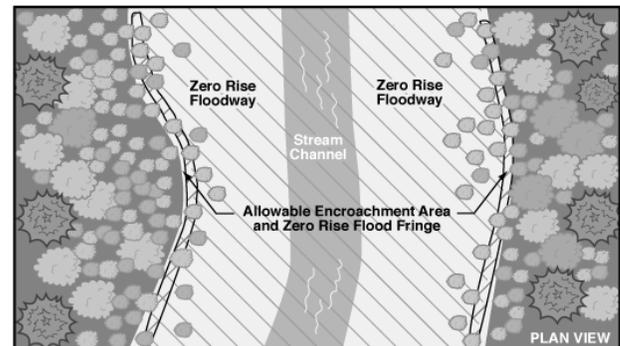
Flood hazard areas are composed of:

1. Floodplain;
2. Zero-rise flood fringe;
3. Zero-rise floodway;
4. FEMA floodway; and
5. Channel migration zones.

#### Zero-Rise Floodway (no increase in base flood elevation)



#### Zero-Rise Floodway (no increase in base flood elevation)



## Development standards in flood hazard areas

The standards established in CAO Sections 137, 161, 162, 163, 164, 165, and 166 apply to all developments that are proposed within a flood hazard area. Alterations are allowed in flood hazard areas, except for in severe channel migration hazard areas, if done in accordance with these standards. The allowed alterations in severe channel migration hazard areas are found in CAO Section 137.

### Key standards -- development in zero-rise flood fringe, zero-rise and FEMA floodway

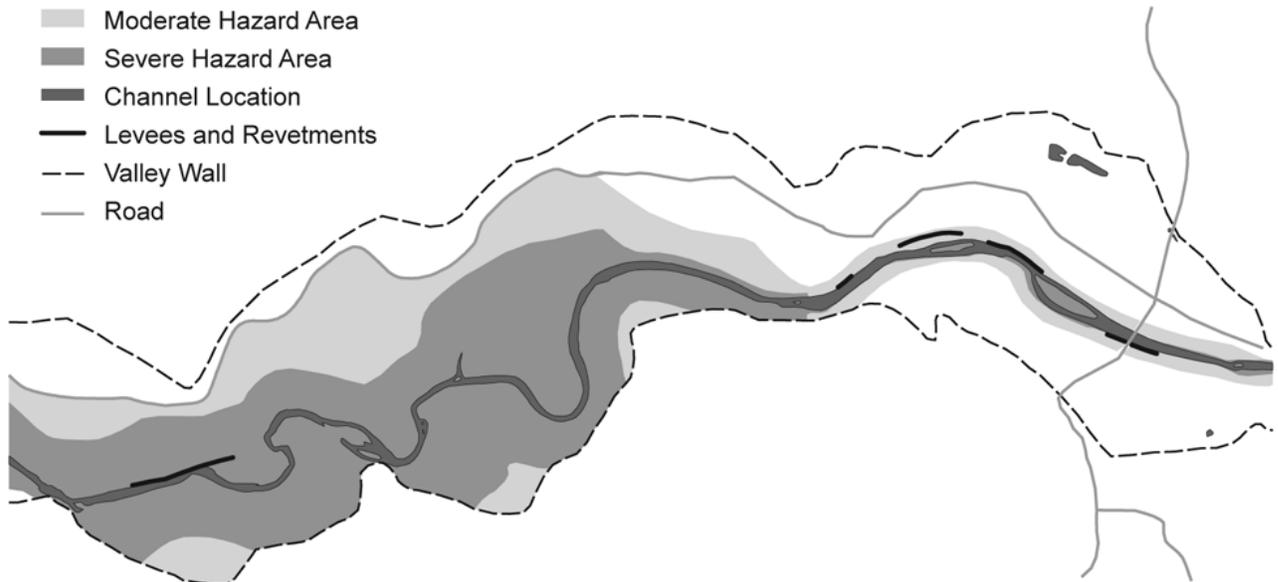
Reference CAO Sections 162, 163, 164

- Compensatory storage is required;
- No rise is allowed to the base flood elevation except under limited circumstances;
- New lots need 5,000 square feet outside the zero-rise floodway;
- Utilities must be flood-proofed, allowed only if no alternative is available;
- Elevate lowest floor one foot above base flood elevation, openings in the foundation, and use flood-resistant materials, alternatives available for nonresidential;
- Post and piling techniques required, alternatives allowed through critical areas report;
- New residences and nonresidential structures are prohibited in the FEMA floodway;
- Maintenance, repair, replacement of existing farmhouses, substantially damaged existing residential structures and historic structures in FEMA floodway if they meet certain standards;
- All structures must be anchored;
- Critical facilities only allowed in certain portion of floodplain;
- Livestock flood sanctuaries and manure storage facilities reviewed through a farm plan, not allowed in FEMA floodway; and
- Remove temporary structures and hazardous materials from floodplain during flood season.

### **Channel migration zones**

King County has prepared a number of channel migration zone maps. The existing maps as well as the criteria and process used to designate and classify channel migration zones are specified in a Public Rule adopted by the King County Department of Development and Environmental Services (DDES). A channel migration zone consists of the river channel, the severe channel migration hazard area and the moderate channel migration hazard area. If applicants disagree with the site-specific conditions or data and the adopted channel migration zone map, they can submit a critical areas report to determine the channel migration zone boundary or classification of the channel migration hazard area.

## Example channel migration zone map (plan view)



## Key standards – development in channel migration zones

*Reference CAO Sections 138 and 166*

- The standards that apply to aquatic area buffers also apply to channel migration zones when they are located within the aquatic area buffer, but the most restrictive standard applies.
- Only the alterations identified in the allowed alterations table in CAO Section 137 are allowed in a severe channel migration hazard area. See below for more details.
- Uses allowed in the moderate channel migration hazard area must be located in the area that is least subject to risk from channel migration.
- Maintenance, repair, modification, or addition to existing structures in the moderate channel migration hazard area are allowed if the footprint is not expanded toward the source of channel migration.
- New dwellings on pre-1995 lots in the moderate channel migration hazard area are allowed under certain circumstances.
- New accessory structures in the moderate channel migration hazard area are allowed under certain circumstances.
- Property subdivision in the moderate channel migration hazard area is allowed if each lot contains at least 5,000 square feet outside of the moderate channel migration hazard area and all lots have safe access routes to the lot.
- Infrastructure for new lots must be outside the moderate channel migration hazard area, except septic systems are allowed under certain circumstances.

# Flood Hazard Areas Overview

## Delineating flood hazard areas

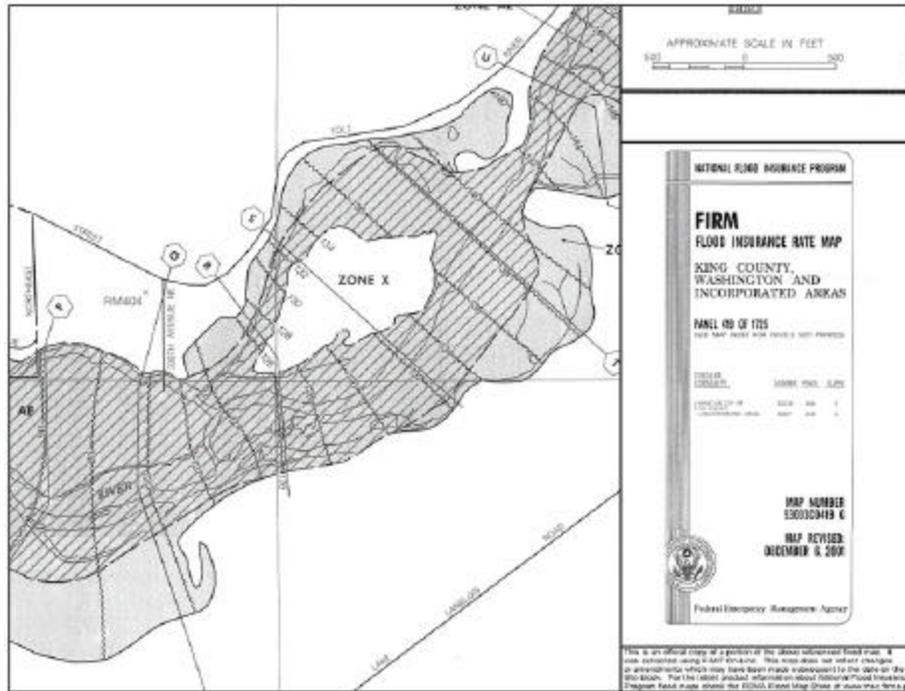
*Reference CAO Section 161*

King County delineates flood hazard areas using base flood elevations (*Reference K.C.C. 21A.06.080 for definition*) and a wide variety of flood hazard data (*Reference CAO Section 49 for definition*) for a flood having a one percent chance of being equaled or exceeded in any given year. This flood is often referred to as the "one-hundred year flood". The base flood is generally determined using existing conditions unless a basin plan or hydrologic study that has been approved by King County has been completed using projected flows under future developed conditions.

Many flood hazard areas are mapped by the Federal Emergency Management Agency (FEMA) in a scientific and engineering report entitled "The Flood Insurance Study for King County and Incorporated Areas". However when there are multiple sources of flood hazard data, King County uses the most accurate data. The kind of flood hazard data King County would use to determine a flood hazard area includes:

- Flood insurance rate maps (*Reference CAO Section 50 for definition*);
- Flood insurance studies (*Reference CAO Section 51 for definition*);
- Preliminary flood insurance rate maps (*Reference CAO Section 83 for definition*);
- Preliminary flood insurance studies (*Reference CAO Section 84*);
- Draft flood boundary work maps and associated technical reports (*Reference CAO Section 28 for definition*);
- Critical areas reports (*Reference CAO Section 147*) prepared in accordance with the FEMA standards and the King County Surface Water Design Manual;
- Letter of map amendments (*Reference CAO Section 71 for definition*);
- Letter of map revisions (*Reference CAO Section 72 for definition*);
- Channel migration zone (*Reference CAO Section 19 for definition*) maps and studies;
- Historical flood hazard information (*Reference CAO Section 65 for definition*); and
- Wind and wave data provided by the United States Army Corps of Engineers.

## Example flood insurance rate map (plan view)



## Alterations within flood hazard areas

Alterations are allowed within flood hazard areas except for in severe channel migration hazard areas if the alteration complies with the development standards for flood hazard areas. The alterations that are allowed within severe channel migration hazard areas are identified in the allowed alterations table found in *CAO Section 137*.

## Within the zero-rise flood fringe

*Reference CAO Section 162*

## Development standards

### Compensatory storage

Development proposals must not reduce the effective base flood storage volume of a floodplain. Grading or other activity that would reduce the effective storage volume must be mitigated by creating compensatory storage on the site. The compensatory storage must provide equivalent volume at equivalent elevations to that being displaced, be hydraulically connected to the source of flooding, be provided in the same construction season and before the flood season begins on

September 30, and occur on site or off site if legal arrangements can be made to assure that the effective compensatory storage volume will be preserved over time.

### **Depth and velocity analysis**

A civil engineer must prepare a base flood depth and base flood velocity analysis and submit it to the department. If the base flood depth analysis shows the depth will exceed three feet or the base flood velocity will exceed three feet per second, the department cannot approve the development.

### **Subdivisions, short subdivisions, urban planned developments and binding site plans**

New building lots are to contain 5,000 square feet or more of buildable land outside the zero-rise floodway.

All utilities and facilities such as sewer, gas, electrical and water systems are to be located and constructed consistent with "Residential: New construction standards and substantial improvements", "Nonresidential: New construction standards and substantial improvements", and "Public and private utilities" standards below.

A civil engineer must prepare detailed base flood elevations in accordance with FEMA guidelines for all new lots.

The proposal must provide adequate drainage in accordance with the King County Surface Water Design Manual.

The following must be shown on the face of the recorded subdivision, short subdivision, urban planned development and binding site plan:

- Building setback areas to restrict permanent structures to this 5,000-square-foot or greater area;
- Base flood data and sources of flood data and flood hazard notes, including the base flood elevations, required flood protection elevations (See *CAO Section 52*), the boundaries of the floodplain and the zero-rise floodway, if determined, and channel migration zone boundaries, if determined; and
- The following notice:  
"Lots and structures located within flood hazard areas may be inaccessible by emergency vehicles during flood events. Residents and property owners should take appropriate advance precautions."

### **Residential: New construction standards and substantial improvements**

The lowest floor, including basement, must be elevated to the flood protection elevation.

Do not fully enclose the portions of the structure that are below the lowest floor.

Portions of a building that are below the lowest floor area must be designed to automatically equalize hydrostatic and hydrodynamic flood forces on exterior walls by allowing for the entry and exit of floodwaters. This is to be accomplished by providing:

- A minimum of two openings on each of two opposite walls in the direction of flow with each of those walls having a total open area of not less than one square inch for every square foot of enclosed area subject to flooding;
- Design and construct the bottom of all openings so they are no higher than one foot above grade; and
- Screens, louvers or other coverings or devices are allowed over openings provided they permit the unrestricted entry and exit of floodwaters.

Materials and methods must be used that are resistant to and minimize flood damage.

Elevate or dry flood-proof (*See CAO Section 54*) to the flood protection elevation all electrical, heating, ventilation, plumbing, air-conditioning equipment and other utilities that service the structure, such as duct-work.

### **Nonresidential: New construction standards and substantial improvements**

The lowest floor must be elevated to the flood protection elevation.

If the lowest floor is not elevated to the flood protection elevation, the structure must be dry flood-proofed to the flood protection elevation. A civil or structural engineer must certify the dry flood-proofing methods are adequate to withstand flood depths, pressures, velocities, impacts, uplift forces and other factors associated with the base flood. The building permit for dry flood-proofed nonresidential structures must contain a statement that the flood insurance premiums are based upon rates for structures that are one foot below the base flood elevation.

Materials and methods must be used that are resistant to, and minimize, flood damage.

Portions of a building that are below the lowest floor area must be designed to automatically equalize hydrostatic and hydrodynamic flood forces on exterior walls by allowing for the entry and exit of floodwaters. This is to be accomplished by providing:

- A minimum of two openings on each of two opposite walls in the direction of flow with each of those walls having a total open area of not less than one square inch for every square foot of enclosed area subject to flooding;

- Design and construct the bottom of all openings so they are no higher than one foot above grade; and
- Screens, louvers or other coverings or devices are allowed over openings provided they permit the unrestricted entry and exit of floodwaters.

All electrical, heating, ventilation, plumbing, air-conditioning equipment and other utility and service facilities must be dry flood-proofed, or elevated above the flood protection elevation.

### **Elevated construction**

A structural engineer must design and certify all elevated construction and submit the design to the department.

### **Anchoring**

All new construction and substantially improved structures must be anchored to prevent flotation, collapse or lateral movement of the structure. The department must approve the method used to anchor the structures.

### **Manufactured homes**

Manufactured homes must meet all standards for flood hazard protection for conventional residential construction.

All manufactured homes must be anchored and installed using methods and practices that minimize flood damage.

All manufactured homes in a new mobile home park or expansion of an existing mobile home park must meet all standards for flood hazard protection for conventional residential construction.

Only manufactured homes are allowed in new or existing mobile home parks located in a flood hazard area.

### **Public and private utilities**

All new and replacement utilities including sewage treatment and storage facilities are to be dry flood-proofed to or elevated above the flood protection elevation.

New onsite sewage disposal systems are to be located outside the limits of the 100-year floodplain, to the extent possible. The installation of new onsite sewage disposal systems in the flood fringe may be allowed if no feasible alternative site is available. One-site sewage disposal systems must be located to avoid impairment to the system and contamination from the system during flooding.

New and replacement water supply systems must be designed to minimize or eliminate infiltration of floodwaters into the system.

Aboveground utility transmission lines, other than electric transmission lines, will only be allowed for the transport of non-hazardous substances.

Bury underground utility transmission lines transporting hazardous substances a minimum depth of four feet below the maximum depth of scour for the base flood as predicted by a professional civil engineer licensed by the State of Washington. The lines are to achieve sufficient negative buoyancy so that any potential for flotation or upward migration is eliminated.

### **Critical facilities**

Critical facilities are facilities necessary to protect the public health, safety and welfare (*See CAO Section 25*). Critical facilities may be allowed within the zero-rise flood fringe of the floodplain, but only when no reasonable alternative site is available. Critical facilities constructed within the zero-rise flood fringe must have the lowest floor elevated to three or more feet above the base flood elevation or to the 500-year flood, whichever is higher. Dry flood-proofing and sealing measures must be taken to ensure that hazardous or toxic substances will not be displaced by or released into floodwaters. Access routes to all critical facilities must be elevated to or above the base flood elevation to the nearest maintained public street or roadway.

### **Livestock flood sanctuaries: New construction or expansions of existing**



Livestock flood sanctuaries are allowed only when there is no other suitable holding area on the site outside the floodplain to which the livestock have access.

The livestock flood sanctuary must be constructed to the standards in an approved farm management plan (*See CAO Section 138 and K.C.C. Chapter 21A.30*). The farm management plan must demonstrate compliance with the compensatory storage and the zero-rise standards for the zero-rise floodway and FEMA floodway. Livestock flood sanctuaries must be located in areas that are least subject to flooding.

### **Livestock manure storage facilities: New construction or expansions of existing**

The livestock manure storage facilities must be constructed to the standards in an approved farm management plan (*See CAO Section 138 and K.C.C. Chapter 21A.30*). The farm management plan must demonstrate compliance with the compensatory storage and the zero-rise standards for the zero-rise floodway and FEMA floodway. Livestock manure storage facilities must be dry flood-proofed and elevated to the flood protection elevation and located in areas that are least subject to flooding.

## **Within the zero-rise floodway**

*Reference CAO Section 163*

### **Development standards**

In addition to the requirements below, activities within the zero-rise floodway must also conform to the requirements that apply to the zero-rise flood fringe. If a conflict exists, the more restrictive conditions will apply.

#### **Zero-rise standard**

A development proposal may not cause any increase in the base flood elevation except as follows:

- Revisions to the Flood Insurance Rate Map to incorporate the increase in base flood elevations have been adopted by FEMA in accordance with federal law (44 CFR 70); and
- Appropriate legal documents are prepared and recorded in which all property owners affected by the increased flood elevation consent to the impacts on their property.

## **Construction that is presumed to meet the zero-rise standard**

If post or piling construction techniques are used, the following are presumed to produce no increase in the base flood elevation:

- New residential structures located outside the FEMA floodway on a legal lot in existence on or before November 27, 1990, that contain less than 5,000 square feet of buildable land outside the zero-rise floodway and if the total building footprint of all existing and proposed structures on the lot does not exceed 2,000 square feet;
- A substantial improvement to an existing residential structure if it is outside the FEMA floodway and the footprint of the structure is not increased; and
- A substantial improvement of an existing residential structure if it meets the standards for new residential structures in the zero-rise flood fringe.

## **Demonstrating the proposal meets the zero-rise standard**

If post and piling construction techniques are not used, a critical areas report is required that demonstrates the proposal will not increase the base flood elevation.

## **Temporary structures and hazardous materials in the zero-rise floodway**

All temporary seasonal shelters, such as tents and recreational vehicles, stockpiles of equipment or materials, or materials the director determines are hazardous to public health, safety and welfare must be removed from the zero-rise floodway during the flood season each year between September 30 and May 1.

## **New residential construction in the zero-rise floodway**

New residential structures, substantial improvements to residential structures or structures that are accessory to a residential structure must meet the following standards:

- Locate the structure outside the FEMA floodway.
- Locate the structure only on lots in existence before November 27, 1990, that contains 5,000 square feet of buildable land outside the zero-rise floodway.
- Locate the structure the farthest distance from the channel unless the applicant can demonstrate there is an area less subject to risk.

## **Public and private utilities in the zero-rise floodway**

Public and private utilities are only allowed if they can demonstrate that a feasible alternative site is not available.

New onsite sewage disposal facilities are allowed only if the Seattle-King County Department of Public Health grants a waiver to allow the system.

The utilities must be dry flood-proofed to or elevated above the flood protection elevation.

Above ground utility transmission lines, except for electrical transmission lines, are only allowed for the transmission of non-hazardous substances.

Underground utility transmission lines transporting hazardous substances must be buried to a minimum depth of four feet below the maximum depth of scour for the base flood, as predicted by a civil engineer, and designed to achieve negative buoyancy to prevent flotation or upward migration during a flood.

### **Critical facilities in the zero-rise floodway**

Critical facilities cannot be constructed in the zero-rise floodway, except for structures that are dependent upon the zero-rise floodway below.

### **Structures dependent on the zero-rise floodway**

Installations or structures, which are floodway dependent, may be located in the floodway provided that the development proposal receives approval from all other agencies with jurisdiction and meets all standards for the zero-rise floodway.

Examples of such installations include:

- Dams or diversions for water supply, flood control, hydroelectric production, irrigation or fisheries enhancement;
- Flood damage reduction facilities such as levees, revetments and pumping stations;
- Stream bank stabilization structures where no feasible alternative exists to protecting structures, public roadways, flood protection facilities (See CAO *Section 53*). Bank stabilization projects must meet specific King County guidelines to the maximum extent possible to protect ecological and hydrological functions of salmon habitat.
- Surface water conveyance facilities;
- Boat launches and related recreation structures;
- Bridge piers and abutments; and
- Approved aquatic area or wetland restoration projects including fisheries enhancement projects.

### **Within the FEMA floodway**

*Reference CAO Section 164*

## **Development standards**

In addition to the requirements below, activities within the FEMA floodway must also conform to the requirements that apply to the zero-rise floodway. If a conflict exists, the more restrictive conditions will apply.

### **Zero-rise standard and engineer certification**

A development proposal may not cause any increase in the base flood elevation. A civil engineer must certify through hydrologic and hydraulic analyses performed in accordance with standard engineering practices that any proposed encroachment into the FEMA floodway will not result in any increase in flood levels during the occurrence of the base flood discharge.

### **New construction prohibited**

The construction or placement of new residential or nonresidential structures is not allowed within the FEMA floodway.

### **Livestock flood sanctuaries and livestock manure storage facilities prohibited**

Livestock flood sanctuaries and livestock manure storage facilities are prohibited in the FEMA floodway.

### **Substantial improvements of residential structures**

If the footprint of the existing residential structure is not increased, substantial improvement of an existing residential structure located in the FEMA floodway that meets the requirements set out in 173-158-070 WAC is presumed to produce no increase in base flood elevation and does not require a critical areas report to establish this fact.

### **Maintenance, repair, replacement or improvement of farmhouses**

A residential structure located within the agricultural production district on land that is zoned for agriculture (A) may be maintained, repaired, replaced or improved if the structure meets the standards for residential structures and utilities in the zero-rise flood fringe and also the following requirements:

- The existing residential structure must have been legally established.
- The viability of the farm is dependent upon the residential structure being in close proximity to the other agricultural structures.
- If the residential structure is going to be replaced, it is only allowed if:
  1. there is not sufficient buildable area on site outside the FEMA floodway for the replacement;

2. the replacement residential structure will not be located where it will increase the flood hazard in water depth, velocity or erosion;
3. the replacement residential structure does not increase the existing footprint; and
4. the existing residential structure, including the foundation is completely removed within ninety days of receiving a certificate of occupancy or temporary certificate of occupancy, whichever occurs first, for the replacement structure.

### **Maintenance, repair, replacement or improvement of substantially damaged residential structures**

A substantially damaged residential structure that is not located within the agricultural production district on land that is zoned for agriculture (A) may be maintained, repaired, or replaced if the structure meets the standards for residential structures and utilities in the zero-rise flood fringe and also the following requirements:

- The Washington State Department of Ecology must assess the flood characteristics of the site and determine that:
  1. the base flood depths will not exceed three feet;
  2. the base flood velocities will not exceed three feet per second;
  3. there is no evidence of flood-related erosion, as determined by the location of the project site in relationship to mapped channel migration zones, or if the site is not mapped, evidence of overflow channels and bank erosion; and
  4. there is a flood warning system or emergency plan in operation.
- The Washington State Department of Ecology must prepare a report of findings and recommendations and submit it to DDES that determines the repair or replacement will not result in an increased risk of harm to life based on the characteristics of the site.
- DDES must review and concur with the report submitted from Washington State Department of Ecology.
- The proposal to maintain, repair or replace the substantially damaged residential structure must be consistent with the findings and recommendations in the report from the Washington State Department of Ecology.
- If the substantially damaged residential structure is going to be replaced, it is only allowed if:
  1. there is not sufficient buildable area onsite outside the FEMA floodway for the replacement;
  2. the replacement structure is a residential structure built as a substitute for a previously existing residential structure of equivalent use and size; and
  3. the existing residential structure, including the foundation is completely removed within ninety days of receiving a certificate of occupancy or

temporary certificate of occupancy, whichever occurs first, for the replacement structure.

### **Maintenance or repair of historic structures**

Structures, as they are defined in the Washington State Code, that are listed as historic by King County can be maintained and repaired in the FEMA floodway if the structure meets the standards for residential or nonresidential structures and utilities in the zero-rise flood fringe.

### **Flood hazard areas – certification by engineer or surveyor**

*Reference CAO Section 165*

An applicant for a new structure or substantial improvement to an existing structure in a flood hazard area must provide a FEMA elevation certificate that has been completed by a civil engineer or land surveyor licensed by the state of Washington. The FEMA elevation certificate must document the following:

- The actual as-built elevation of the lowest floor, including the basement; and
- The actual as-built elevation to which the structure is dry flood-proofed, if required.

A copy of the elevation certificate and information on how to complete the elevation certificates is available online at the FEMA website:

<http://www.fema.gov/nfip/elvinst.shtm>

FEMA elevation certificate must be submitted before DDES issues a certificate of occupancy or temporary certificate of occupancy, whichever occurs first.

If the structure is an unoccupied structure, the FEMA elevation certificate must be submitted before DDES issues the final letter of completion or temporary letter of completion, whichever occurs first.

The civil engineer or land surveyor must indicate if the structure has a basement or not.

DDES will maintain the FEMA elevation certificates for public inspection and for certification under the National Flood Insurance Program.

### **Channel migration zones**

#### **Development standards**

*Reference CAO Section 166*

Development standards within channel migration zones (CMZs) apply only to areas that have been mapped by King County and adopted by Public Rule. The Department of Development and Environmental Services Public Rule for CMZs is online at: <http://www.metrokc.gov/ddes/pub%5Frule/acrobat/21a-24cma.pdf>.

The standards that apply to the aquatic area buffers (*CAO Section 195*) also apply to the severe channel migration hazard area and the moderate channel migration hazard area that is within the aquatic area buffer. The more restrictive standards apply where there is a conflict.

## **Moderate channel migration hazard area**

### **Development standards**

*Reference CAO Section 166*

The following standards apply to development proposals and alterations within the moderate channel migration hazard area if it is outside the aquatic area buffer.

#### **Maintenance, repair or expansion of structures**

Maintenance, repair or expansion of any use or structure is allowed provided the existing structure's footprint is not expanded towards any source of channel migration hazard, unless the applicant can demonstrate to the satisfaction of the department that such location is the least subject to risk.

#### **New primary dwelling units**

New primary dwelling units, accessory dwelling units or accessory living quarters, and required infrastructure are allowed if:

- The structure is located on a separate lot in existence on or before February 16, 1995;
- A feasible alternative location outside of the channel migration zone is not available onsite; and
- To the maximum extent practical, the structure and supporting infrastructure is located the farthest distance from any source of channel migration hazard, unless the applicant can demonstrate that an alternative location is:
  1. the least subject to risk, or
  2. within the outer third of the moderate channel migration hazard area as measured perpendicular from the channel.

## **New accessory structures**

New accessory structures are allowed if no feasible alternative is available on-site, and to the maximum extent practical, the structure is located the farthest distance from the migrating channel.

## **Subdivision of property**

The subdivision of property is allowed within the portion of a moderate channel migration hazard area located outside an aquatic areas buffer if:

- All lots contain 5,000 square feet or more of buildable land outside of the moderate channel migration hazard area;
- Access to all lots does not cross the moderate channel migration hazard area; and
- All infrastructure is located outside the moderate channel migration hazard area except that an onsite septic system is allowed in the moderate channel migration hazard area if:
  1. a feasible alternative location is not available on site, and
  2. to the maximum extent practical, the septic system is located the farthest distance from the migrating channel.

## **Severe channel migration hazard area**

Alterations are allowed within a severe channel migration hazard area if the alteration complies with the development standards and other applicable requirements of K.C.C. chapter 21A.24. The allowed alterations to a severe channel migration hazard area are identified in the table in CAO Section 137. The allowed alterations in the severe channel migration hazard area are summarized below.

## **Nonresidential structures**

Construction of nonresidential farm structures is allowed within a severe channel migration hazard area located in grazed or tilled wet meadows or buffers of wetlands or aquatic areas where:

- The site is predominately used for the practice of agriculture;
- The structure is in compliance with an approved farm management plan (*See CAO Section 138*);
- The structure is either:
  1. on or adjacent to existing nonresidential impervious surface areas, additional impervious surface area is not created waterward of existing impervious surface areas and the area was not used for crop production,
  2. higher in elevation and no closer to the critical area than its existing position, or

3. located away from existing impervious surface area that is determined to be the optimum site in the farm management plan;
- Best management practices associated with the structure specified in the farm management plan are installed and maintained;
  - Installation of fencing in accordance with K.C.C. chapter 21A.30 does not require the development of a farm management plan if required best management practices are followed and the installation does not require clearing of critical areas or their buffers;
  - In a severe channel migration hazard area portion of an aquatic area buffer, a nonresidential farm structure is allowed only if:
    1. there is no feasible alternative location on site,
    2. located where the structure is least subject to risk from channel migration,
    3. the structure is not used to house animals or store hazardous substances, and
    4. the footprint of all accessory structures within the severe channel migration hazard area will not exceed the greater of 1,000 square feet or 2% of the severe channel migration area on the site.

## Existing structures

Existing nonresidential structures may be maintained or repaired.

Expansion or replacement of existing nonresidential primary structures is allowed if:

- There is no increase of the footprint of any existing structure; and
- The expansion or replacement is not a substantial improvement (*See definition in K.C.C. 21A.06.1270*).

Expansion or replacement of existing nonresidential accessory structures is allowed if:

- Additions to the footprint will not make the total footprint of all existing structures more than 1,000 square feet; and
- There is no expansion of the footprint towards any source of channel migration unless the applicant can demonstrate the location is less subject to risk and less impact on the critical area.

## Remodeling

Interior remodeling is allowed.

## Docks or piers

Construction of new docks and piers is not allowed in a severe channel migration hazard area. Maintenance, repair or replacement of docks or piers is allowed. The allowed alterations table in CAO Section 137 establishes conditions for construction of new and maintenance of existing docks and piers in aquatic areas outside severe channel migration hazard areas. See the aquatic areas section for those standards.

## Grading

Grading of up to 50 cubic yards on lots less than 5 acres in size is allowed if conducted more than:

- 165 feet from the ordinary high water mark (*See K.C.C 21A.06.825 for definition of ordinary high water mark*) in the rural area;
- 115 feet from the ordinary high water mark in the urban area.

Construction of new slope stabilization is allowed only where erosion or landsliding threatens a structure, utility facility, roadway, driveway, public trails, aquatic area or wetland. The stabilization work must not disturb the slope and its vegetation cover or any associated critical areas, to the maximum extent practical.

Maintenance of existing slope stabilization is allowed when performed by or at the direction of a government agency in accordance with regional road maintenance guidelines. These guidelines are available on line at:

<http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

Maintenance of existing slope stabilization is allowed when not performed under the direction of a government agency only if:

- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers; and
- When the maintenance or replacement of bridges or culverts involves waters used by salmonids the maintenance must be in compliance with standards established in a King County Public Rule and is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert. The maintenance or replacement shall not involve excavation of a new sediment trap adjacent to the inlet. The King County Public Rule, Sensitive areas: Maintenance of Roadside Ditches Used By Salmonids is available on line at:

<http://www.metrokc.gov/ddes/pub%5Frule/acrobat/21A-24Road-Ditch.pdf>.

## Clearing

Clearing of up to 1,000 square feet or up to a cumulative 35% of the lot is allowed if conducted more than:

- 165 feet from the ordinary high water mark (*See K.C.C 21A.06.825 for definition of ordinary high water mark*) in the rural area;
- 115 feet from the ordinary high water mark in the urban area.

Clearing is allowed for the removal of hazard trees (*See CAO Section 107 for definition of hazard tree*) and vegetation as necessary for surveying or testing purposes. Clearing is also allowed for harvesting of plants and plant materials, such as plugs, stakes, seeds or fruits, for restoration and enhancement projects.

Cutting of firewood is not allowed within a wildlife habitat conservation area. Cutting of firewood within a wildlife network is allowed in accordance with a management plan approved under K.C.C. 21A.14.270. When cutting firewood within a critical area buffer, cutting of firewood is only allowed for personal use and in accordance with an approved forest management plan or rural stewardship plan. King County has developed a Public Rule for forest management plans, which is available on line at: <http://www.metrokc.gov/recelec/archives/policies/put819pr.htm>. For information on rural stewardship plans, see CAO Section 139.

Removal of vegetation for fire safety is allowed only in buffers if it is done in accordance with best management practices approved by the King County fire marshal.

Removal of noxious weeds or invasive vegetation is allowed if conducted in accordance with an approved forest management plan, farm management plan, or rural stewardship plan. If removal of noxious weeds or invasive vegetation is not approved under a forest management plan, farm management plan or rural stewardship plan, it may be undertaken as follows:

- With hand labor, including hand-held mechanical tools, unless King County noxious weed control board otherwise prescribes the use of riding mowers, light mechanical cultivating equipment or herbicides or biological control methods. Call (206) 296-0290 or visit the King County noxious weed control Web site at: <http://dnr.metrokc.gov/wlr/lands/weeds/index.htm>.
- The area of noxious weed or invasive vegetation removal must be stabilized to avoid re-growth or regeneration of noxious weeds;
- The cleared area must be re-vegetated with native or non-invasive vegetation and stabilized against erosion; and
- Herbicide use is allowed only in accordance with federal and state law.

## Forest practices

Non-conversion Class IV -G forest practice is allowed if conducted in accordance with chapter 76.09 RCW and Title 222 WAC and a forest management plan is approved for the site by the King County Department of Natural Resources and Parks. The property owner must also provide a notice of intent in accordance with RCW 76.09.060 that the site will not be converted to non-forestry use within six years. Additional information on forest management plans is available at <http://dnr.metrokc.gov/wlr/lands/forestry/index.htm>

Class I, II, III, IV -S forest practices are allowed.

## Roads

Construction of new public road right-of-way structure (*See CAO Section 86 for definition of public road right-of-way structure*) on unimproved right-of-way and expansion of a road beyond the public road right-of-way structure are allowed if:

- There is no feasible location with less adverse impact on an aquatic area and its buffer;
- The road corridor is not located over habitat used for salmonid rearing or spawning or by any species listed as endangered or threatened by the state and federal government unless the department determines there are no other feasible crossing sites;
- The road corridor width is minimized to the maximum extent practical;
- The construction occurs during approved periods for in-stream work; and
- The corridor will not change or diminish the overall aquatic area flow peaks, duration or volume or the flood storage capacity.

Maintenance of public road right-of-way structures (*See CAO Section 86 for definition of public road right-of-way structure*) and repair, replacement or modification of a road within existing right-of-way are allowed if conducted at the direction of a government agency in accordance with regional road maintenance guidelines. These guidelines are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

## Driveways, private access roads, farm field access drives

Construction of driveways or private access roads is allowed if:

- An alternative access is not available;
- Impact to the critical area is minimized to the maximum extent practical including the use of walls to limit the amount of cut and fill necessary;
- The risk associated with landslide and erosion is minimized;

- Access is located where it is least subject to risk from channel migration; and
- Construction occurs during approved periods for instream work.

Construction of farm field access drives are allowed if approved through a farm management plan. See CAO Section 138 relating to farm management plans.

Maintenance of a driveway, private access road or farm field access drive is allowed. When the maintenance is not performed under the direction of a government agency, the maintenance is allowed only if:

- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers; and
- When the maintenance or replacement of bridges or culverts involves waters used by salmonids the maintenance must be in compliance with standards established in a King County Public Rule and is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert. The maintenance or replacement shall not involve excavation of a new sediment trap adjacent to the inlet. The King County Public Rule, Sensitive areas: Maintenance of Roadside Ditches Used By Salmonids is available on line at:  
<http://www.metrokc.gov/des/pub%5Frule/acrobat/21A-24Road-Ditch.pdf>.

## **Bridges or culverts**

Maintenance or repair of a bridge or a culvert is allowed when performed by or at the direction of a government agency in accordance with regional road maintenance guidelines. These guidelines are available online at:  
<http://www.metrokc.gov/kcdot/roads/esa/index.cfm>. Maintenance or repair of a bridge or culvert is allowed when not performed under the direction of a government agency only if:

- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers; and
- When the maintenance or replacement of bridges or culverts involves waters used by salmonids the maintenance must be in compliance with standards established in a King County Public Rule and is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert. The maintenance or replacement shall not involve excavation of a new sediment trap adjacent to the inlet. The King County Public Rule, Sensitive areas: Maintenance of Roadside Ditches Used By

Salmonids is available on line at:

<http://www.metrokc.gov/ddes/pub%5Frule/acrobat/21A-24Road-Ditch.pdf>.

Replacement of a bridge or culvert is allowed when performed by or at the direction of a government agency in accordance with regional road maintenance guidelines. These guidelines are available online at:

<http://www.metrokc.gov/kcdot/roads/esa/index.cfm>. Replacement of a bridge or culvert must be made fish passable in accordance with Washington State Department of Fish and Wildlife Habitat and Lands Environmental Engineering Division's Fish Passage Design Manual or with the National Marine and Fisheries Services Guidelines for Salmonid Passage at Stream Crossings for federally listed salmonid species. The Washington State Fish and Wildlife Service document "Design of Fish Passage at Culverts" is available at: <http://wdfw.wa.gov/hab/engineer/cm>. The National Marine and Fisheries Services guidelines for federally listed salmonid species is available at: <http://pacific.fws.gov/jobs/orojitw/standard/fish-std.htm>. The site must be restored with appropriate native vegetation.

Expansion of a bridge or culvert is allowed if it is necessary to bring the bridge or culvert up to current standards and there is no other feasible alternative solution available with less impact on the aquatic area and its buffer. The bridge or culvert must be located to the maximum extent practical to minimize impacts to the aquatic area and its buffer.

## Utilities and other infrastructure

New utility corridors or utility facilities are allowed if they are located within an existing roadway and are consistent with the regional road maintenance guidelines. These guidelines are available online at

<http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

New utilities and other infrastructure are limited to construction of pipelines, cables, wires and support structures of utility facilities within utility corridors. The following requirements must be met:

- New pipelines, cables, wires and support structures are allowed only when there is no alternative location with less adverse impact on the critical area and critical area buffer.
- New utility corridors must meet the all of the following requirements to the maximum extent practical:
  1. Do not locate over habitat used for salmonid rearing or spawning or by a species listed as endangered or threatened by the state or federal government unless the department determines that there is no other feasible crossing site.
  2. Do not locate a new utility corridor in an aquatic area if the mean annual flow rate is equal to or greater than 20 cubic feet per second.

3. Paralleling the channel or following a down-valley route near the channel should be avoided.
- To the maximum extent practical, new utility corridors must be located as follows:
    1. Minimize the width of the utility corridor;
    2. Minimize the removal of trees greater than 12 inches diameter at breast height; and
    3. Provide additional, contiguous and undisturbed critical area buffer, equal in area to the disturbed critical area buffer area including any allowed maintenance roads.
  - To the maximum extent practical, access for maintenance of utility corridors must be at limited access points into the aquatic area buffer rather than by a parallel maintenance road. If a parallel maintenance road is necessary, the following standards must be met:
    1. Minimize the width of the maintenance road to the maximum extent practical and in no event can it be greater than 15 feet; and
    2. Locate the maintenance road contiguous to the utility corridor on the side of the utility corridor farthest from the critical area.
  - New utility corridors or utility facilities must not change or diminish the overall aquatic area hydrology or flood storage capacity.
  - Construction must occur during approved periods for instream work, which is generally June 15 to September 30, or as specified in permit approvals.
  - The utility corridor must serve multiple purposes and properties to the maximum extent practical.
  - Bridges or other construction techniques that do not disturb the critical areas must be used to the maximum extent practical.
  - Bored, drilled or other trenchless crossings of the aquatic area or buffer must be laterally constructed at least 4 feet below the maximum depth of scour for the base flood.
  - Bridge piers or abutments for bridge crossing must not be placed within the FEMA floodway or the ordinary high water mark.
  - Open trenching may only be used during low flow periods and only within aquatic areas when they are dry. The department may approve open trenching of type S or F aquatic areas only if there is no feasible alternative and equivalent or greater environmental protection can be achieved.
  - Minor communication facilities may collocate on existing utility facilities if:
    1. No new transmission support structure is required; and
    2. Equipment cabinets are located on the transmission support structure.

Maintenance, repair or replacement is allowed for private individual utility service connections on site or to public utilities if the disturbed area is not expanded and no hazardous substances, pesticides or fertilizers are applied.

## **Wells and onsite sewage disposal systems**

Maintenance or repair of existing wells and onsite sewage disposal systems is allowed if the disturbed area is not expanded, clearing is limited to the maximum extent practical and no hazardous substances, pesticides or fertilizers are applied.

## **Surface water systems**

Construction of new surface water conveyance systems, surface water flow control or surface water quality treatment facilities are allowed if they are within an existing roadway and are constructed to be consistent with the regional road maintenance guidelines. These guidelines are available on line at <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>. If not within the roadway, a new surface water conveyance system is allowed if constructed only with vegetation.

Maintenance, repair or replacement of existing surface water conveyance systems or surface water flow control or surface water quality treatment facilities are allowed if performed by or at the direction of a government agency in accordance with the regional road maintenance guidelines. These guidelines are available on line at <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

Open, vegetated storm water management conveyance systems and outfall structures that simulate natural conditions may be maintained, repaired or replaced if:

- Fish habitat features necessary for feeding, cover and reproduction are included, when appropriate;
- The vegetation is maintained and added adjacent to all open channels and ponds, if necessary, to prevent erosion, filter out sediments or shade the water; and
- Bioengineering techniques are used to the maximum extent practical.

Closed, tight lined conveyance system and outfall structures may be maintained, repaired or replaced if:

- Necessary to avoid erosion of slopes; and
- Bioengineering techniques are used to the maximum extent practical.

## **Flood protection facilities**

Construction of a new flood protection facility is allowed in a severe channel migration hazard area portion of an aquatic area buffer to prevent bank erosion only if consistent with the Washington state Integrated Stream Protection Guidelines and if bioengineering (*See CAO section 11 for definition of bioengineering*) techniques

are used to the maximum extent practical, unless the applicant can demonstrate that other methods provide equivalent structural stabilization and environmental function. New flood protection facilities are only allowed in a severe channel migration hazard area to protect the following:

- Public roadways;
- Sole access routes that were in existence before February 16, 1995; or
- New primary dwelling units, accessory dwelling units or accessory living quarters and residential accessory structures located outside the severe channel migration hazard area if:
  1. the site is adjacent to or abutted by properties on both sides containing buildings or sole access routes protected by legal bank stabilization in existence before February 16, 1995. The buildings, sole access routes or bank stabilization must be located no more than 600 feet apart as measures parallel to the migrating channel; and
  2. the new primary dwelling units, accessory dwelling units, accessory living quarters or residential accessory structures are located no closer to the aquatic area than similar structures on abutting adjacent properties.

Maintenance, repair or replacement of lawfully established flood protection facilities if:

- Maintained by a public agency;
- The height of the facility is not increased;
- The linear length of the affected edge of the facility is not increased;
- The footprint of the facility is not expanded waterward;
- If consistent with the King County's Guidelines for Bank Stabilization Projects and if bioengineering (*See CAO section 11*) techniques are used to the maximum extent practical; and
- The site is restored with appropriate native vegetation.

## **Instream structures**

New instream structures (*See CAO section 68 for definition of instream structures*) or instream work is allowed if performed by or at the direction of a government agency in accordance with the regional road maintenance guidelines, which are available on line at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

If the aquatic area is a type N or O, the new instream structure or work is allowed and must be done in the least impacting way and at the least impacting time of the year. It must also be done in conformance with applicable best management practices and all the affected instream and buffer features restored. If the aquatic area is a type S or F, the new instream structure or work must be included as part of a project to evaluate, restore or improve habitat, and must be sponsored or

cosponsored by a public agency that has natural resource management as a function or by a federally recognized tribe.

Existing instream structures may be maintained or repaired.

## Recreation areas

Construction of a new trail is not allowed in a wildlife habitat conservation area. Otherwise, construction of a new trail is allowed as far landward as feasible in the buffer if:

- The trail surface is not made of impervious material except that public multipurpose trails may be made of impervious materials if they meet all the requirements in K.C.C. chapter 9.12; and
- To the maximum extent practical, buffers are expanded equal to the width of the trail corridor including disturbed area.

Maintenance of outdoor public park facilities, trails and publicly improved recreation areas is allowed only if the maintenance:

- Does not involve the use of herbicides or other hazardous substances except for the removal of noxious weeds or invasive vegetation;
- When salmonids are present, the maintenance must be in compliance with the King County Public Rule for *Maintenance of Agricultural Ditches and Streams Used by Salmonids*. This Public Rule is available on line at: <http://www.metrokc.gov/ddes/pub%5Frule/acrobat/21a-24AgDitch01.pdf>; and
- Does not involve the expansion of any roadway, lawn, landscaping, ditch, culvert, engineered slope or other improved area being maintained.

## Habitat and science projects

Habitat restoration or enhancement projects are limited to:

- Those sponsored by a public agency that has natural resource management as a primary function or by a federally recognized tribe;
- Habitat restoration or enhancement projects prepared by a qualified biologist; or
- Conducted in accordance with an approved forest or farm management plan or rural stewardship plan.

Scientific sampling for salmonids is allowed if done in accordance with a scientific sampling permit issued by Washington State Department of Fish and Wildlife and where applicable, an incidental take permit issued under Section 10 of the Endangered Species Act. Contact <https://fortress.wa.gov/dfw/scp/scp/index.jsp>.

Drilling and testing is allowed for the limited clearing and grading needed to prepare a critical areas report. If associated spoils are contained onsite (i.e. in a manner that the spoils will not mobilize or erode) the following is allowed:

- Data collection and research if carried out by non-mechanical or hand-held equipment to the maximum extent practical;
- Survey monument placement;
- Site exploration and gage installation if performed in accordance with state-approved sampling protocols and accomplished to the maximum extent practical by hand-held equipment; and
- Similar work associated with an incidental take permit issued under Section 10 or consultation under Section 7 of the Endangered Species Act.

## **Agricultural Activities**

Horticulture activities, including tilling, disking, planting, seeding, harvesting, preparing soil, rotating crops and related activities, and grazing of livestock are allowed if these activities have been in existence since January 1, 2005 and there is no expansion into the critical area or critical area buffer. "Continuous existence" includes cyclical operations and managed periods of soil restoration, enhancement or other fallow states associated with these horticultural and agricultural activities.

Horticulture activities, including tilling, disking, planting, seeding, harvesting, preparing soil, rotating crops and related activities, and grazing of livestock are allowed for the expansion of existing or new agricultural activities where:

- The site is predominately involved in the practice of agriculture;
- There is no expansion into an area that
  1. has been cleared under I, II, III, IV-S forest practice permit; or
  2. is more than 10,000 square feet with tree cover at a uniform density of more than 90 trees per acre and with the predominant main stem diameter of the trees at least 4 inches in diameter at breast height, not including areas that are actively managed as agricultural crops for pulpwood, Christmas trees or ornamental nursery stock;
- The activities are in compliance with an approved farm management plan (*See CAO Section 138*); and
- All best management practices associated with the activities specified in the farm management plan are installed and maintained.

## **Livestock manure storage facilities**

Construction or maintenance of livestock manure storage facilities are allowed under the same conditions above for horticultural activities and grazing livestock, but are only allowed in grazed or tilled wet meadows or their buffers if:

- The facilities are designed to the standards of an approved farm management plan (See CAO section 138) or an approved livestock management plan in accordance with K.C.C. chapter 21A.30;
- There is no feasible alternative location available on the site; and
- The facilities are located close to the outside edge of the aquatic area buffer to the maximum extent practical.

Livestock manure storage facilities are allowed in a severe channel migration hazard area portion of an aquatic area buffer if:

- The facilities are designed to the standards of an approved farm management plan (See CAO section 138)
- There is no feasible alternative location available on the site; and
- The structure is located where it is least subject to risk from channel migration.

## **Construction or maintenance of livestock flood sanctuary**

Livestock flood sanctuaries are allowed in a severe channel migration hazard area portion of an aquatic area buffer if:

- The facilities are designed to the standards of an approved farm management plan (See CAO section 138);
- There is no feasible alternative location available on the site; and
- The structure is located where it is least subject to risk from channel migration.

## **Agricultural drainage**

Construction of agricultural drainage is allowed if in compliance with an approved farm management plan (See CAO section 138) and all best management practices associated with the activities specified in the farm management plan are installed and maintained.

Maintenance of agricultural drainage is allowed if these activities have been continuous since January 1, 2005, and there is no expansion into the critical area or critical area buffer. "Continuous existence" includes cyclical operations and managed periods of soil restoration, enhancement or other fallow states associated with these horticultural and agricultural activities. Maintenance of agricultural drainage is allowed if:

- The site is predominately involved in the practice of agriculture;

- There is no expansion into an area that has been cleared under I, II, III, IV -S or conversion IV -G forest practice permits or where there is more than 10,000 square feet with tree cover at a uniform density of more than 90 trees per acre and with the predominant main stem diameter of the trees at least 4 inches in diameter at breast height, not including areas that are actively managed as agricultural crops for pulpwood, Christmas trees or ornamental nursery stock;
- The activities are in compliance with an approved farm management plan (*See CAO Section 138*); and
- All best management practices associated with the activities specified in the farm management plan are installed and maintained.

Maintenance of an agricultural drainage that is used by salmonids is allowed if it in compliance with an approved farm plan.

## **Farm ponds, fish ponds, livestock watering ponds**

Construction or maintenance of farm ponds, fish ponds, or livestock watering ponds are allowed if these activities have been in existence since January 1, 2005, and there is no expansion into the critical area or critical area buffer. "Continuous existence" includes cyclical operations and managed periods of soil restoration, enhancement or other fallow states associated with these horticultural and agricultural activities.

New farm ponds, fish ponds, or livestock watering ponds or expansion of existing farm ponds, fish ponds, or livestock watering ponds are allowed if:

- The site is predominately involved in the practice of agriculture;
- There is no expansion into an area that has been cleared under I, II, III, IV -S or conversion IV -G forest practice permits or where there is more than 10,000 square feet with tree cover at a uniform density of more than 90 trees per acre and with the predominant main stem diameter of the trees at least 4 inches in diameter at breast height, not including areas that are actively managed as agricultural crops for pulpwood, Christmas trees or ornamental nursery stock;
- The activities are in compliance with an approved farm management plan (*See CAO Section 138*); and
- All best management practices associated with the activities specified in the farm management plan are installed and maintained.

## **Cemetery graves**

Excavation of cemetery graves in established and approved cemetery is allowed. Maintenance of cemetery graves is allowed, whether in an established and approved cemetery or not.

## **Lawns, landscaping and gardening**

Maintenance of lawns, landscaping and gardening for personal consumption is allowed within existing landscaped areas or other previously disturbed areas.

## **Golf courses**

Maintenance of golf courses is allowed when not performed under the direction of a government agency only if:

- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers, and
- When the maintenance or the replacement of bridges or culverts involves waters used by salmonids the work is in compliance with ditch standards in a public rule and the maintenance of culverts is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert and does not involve the excavation of a new sediment trap adjacent to the inlet. The King County Public Rule is available on line at [http://www.metrokc.gov/ddes/pub\\_rule/#rules](http://www.metrokc.gov/ddes/pub_rule/#rules) (Chapter 21A.24 Sensitive Areas: Maintenance of Ditches Used by Salmonids).

# Landslide Hazard Areas

Landslide hazards include a variety of geologic features that together present hazards to development both above and below the landslide. Such hazards include slope failures, large-scale block failures, debris flows, rock falls, rapid undercutting by stream erosion or wave action, and snow avalanches. Some landslides are readily apparent, whereas others are revealed only through careful examinations by professional investigators.

The general intent of the King County Zoning Code is to encourage avoidance of landslide hazards. If avoidance is not desirable or practical, then the regulations call for scientific and engineering studies that both characterize the nature of the specific hazard and recommend ways to eliminate the hazard to the proposed development. In some cases, landslide mitigation is both straightforward and simple. In other cases, effective mitigation may be impossible or prohibitively expensive.

## Development standards

### General provisions

Landslide hazard areas may be separated into two varieties for the purposes of considering the applicable development restrictions:

- Landslide hazard areas that are also steep slopes (> 40% grade); and
- Landslide hazard areas that are on slopes of less than 40% grade.

Landslide hazard areas and steep slopes may be totally overlapping and even intimately related, but they are still considered separately (as are all critical areas) for the purposes of regulation. In cases, for example, where a landslide hazard area is also adjacent to a stream or wetland, the stream and wetland restrictions must also be met. So for this reason, you need to first determine if the landslide hazard area is also a steep slope. If so, please refer to that section for additional development restrictions not stated here.

### Allowed alterations

In general, all alterations are allowed on landslide hazard areas provided that the landslide hazard itself is mitigated through proper engineering of the development so that the risk of property damage and injury is minimized or eliminated. A geologic characterization and evaluation of the landslide hazard is typically required (sometimes including deep boreholes and subsurface modeling by a geologist with

experience in landslide investigations) that includes proposals for landslide mitigation sufficient to protect the property and the people from the hazard. Review of the development plans by the geotechnical engineer is required. No alteration is permitted that would increase the landslide hazard to adjacent properties.

### **Slopes more than 40% grade**

For landslide hazard areas that are also steep slopes, both the landslide requirements above and the additional steep slope requirements must be met. Please refer to the steep slope discussion for information on steep slope restrictions and see Section 131 for an expanded listing of allowed alterations on steep landslide hazards, which in this case is nearly identical to that for steep slopes.

### **Slopes less than 40% grade**

For landslide hazard areas that are not on steep slopes, only the requirement for appropriate mitigation must be met. However, on all landslide hazard areas, vegetation removal is prohibited unless it is a necessary part of an allowed alteration. In some cases, removal of the vegetation would not affect the landslide hazard so clearing and grading may be allowed without any mitigation, however all alterations are subject to critical areas review and your project may require a critical areas study to evaluate the impacts of the hazard and the proposed development.

### **Buffers and setbacks**

Unmitigated landslide hazards are protected (i.e. isolated from the public) with buffers and building setbacks. The typical buffer is 50 feet, with an additional 15-foot building setback, but the buffer may be reduced or enlarged depending upon the specific site conditions and the nature of the hazard.

## Part Two – Critical Areas

# Seismic Hazard Areas

Seismic hazard areas in King County are those areas where the foundation soils may be subject to liquefaction (loss of strength and bearing capacity) or lateral spreading during an earthquake. Typically, these soils are found in low-lying areas near bodies of water, such as along the larger streams and around lakes. Sandy soils that are saturated with water are particularly prone to liquefaction.

### Development standards

Alterations and developments in seismic hazard areas can only be approved if either:

- An evaluation of the potential seismic hazard area shows that there is no seismic hazard of the type described above (an investigative study by a consulting geotechnical engineer or geologist is sometimes required), or
- The development plans include mitigation based on the best available engineering and geological practices that either eliminates or minimizes the risk of structural damage or injury resulting from seismically induced settlement or liquefaction.

The requirements for mitigation (and indeed for any further geotechnical or geological investigation) may be waived for mobile homes, additions or alterations to existing structures that do not increase occupancy or affect the risk of damage or injury, or buildings of less than 2,500 square feet that are not dwelling units or places of public assembly (such as barns, agricultural buildings, garages, etc.).

### Allowed alterations

All alterations are allowed, provided that either it is shown that no seismic hazard exists, or that mitigation is included in the development proposal that eliminates or minimizes the risk of structural damage or injury resulting from seismically induced settlement or liquefaction. Unlike most other critical areas, there are no requirements for buffers or building setbacks, but many seismic hazard areas are near streams, wetlands, and lakes that do have buffer and setback requirements. For some proposed developments (such as some clearing and grading projects), no seismic study and no mitigation may be required simply because none may be necessary for that particular project.

## Part Two – Critical Areas

# Volcanic Hazard Areas

Volcanic hazards as addressed by King County are largely restricted to potential mudflows along stream drainages originating on Mt. Rainier. The White River upstream of Mud Mountain Dam is particularly affected. The White River downstream of the Mud Mountain Dam and other parts of the Green and Duwamish River basins are similarly affected but to a lesser degree. Other hazards related to an eruption of Mt. Rainier, such as ash falls, are not addressed by the King County Zoning Code.

The single most important section of the volcanic hazards regulation is the statement at the end of the section that says, “This section shall not become effective until King County has completed the required modeling and mapping of volcanic hazard areas.” Although federal and state agencies have made some progress in volcanic hazard mapping and modeling, such work has not been done by King County and the county does not recognize other agencies' work as sufficient to fulfill the code requirement for mapping and modeling. Hence, there are effectively no development restrictions with respect to volcanic hazard areas.

### Development standards

For volcanic hazard areas located along the White River upstream of the Mud Mountain Dam, the King County Zoning Code requires that:

- No critical facilities, apartments, townhouses, or commercial structures be allowed;
- All new lots created by subdivision, short subdivision, or binding site plan shall designate building areas and building setbacks outside of the volcanic hazard areas; and
- Notice of critical areas is required for new single detached dwellings on existing lots.

For volcanic hazard areas along the White River downstream from the Mud Mountain Dam and along the Green and Duwamish Rivers, the department shall evaluate development proposals for critical facilities for risk of inundation or flooding resulting from mudflows originating on Mt. Rainier. Critical facilities shall be designed to withstand, without damage, the effects of mudflows equal in magnitude to the prehistoric electron mudflow.

## **Allowed alterations**

Effectively, all alterations are allowed without meeting any of the above development standards because the volcanic hazard areas restrictions are not yet in effect. King County has no current plans to complete the required volcanic hazard mapping.

## Part Two – Critical Areas

# Steep Slope Hazard Areas

Steep slopes (meaning slopes greater than 40% grade and greater than 10 feet tall) are regulated as critical areas in King County because of the potential for erosion problems and landsliding on the slopes. The steeper the slope, the greater is the potential for hazardous conditions that threaten development and the surrounding environment. In general, the King County Zoning Code encourages avoidance of the slopes and actually prohibits development on and near the slopes in many cases. Despite this, people often choose to build near the top of a steep slope in order to gain a good view, but clearing on the slopes and in buffers around them is restricted, leading to a conflict between the wishes of developers and the requirements for slope and buffer protection. As a result, code violations resulting from slope clearing (for view creation) are numerous. Substantial revegetation (planting both trees and understory plants) may be required at sites that have been cleared illegally, sometimes resulting in significant costs to the property owner.

## Development Standards

### General Provisions

Steep slopes, meaning those slopes greater than 40% grade (about 21 degrees inclination) can be divided into four groups for regulatory purposes:

1. Steep slopes that are less than 10 feet high in vertical extent, which are NOT regulated by King County and so not affected by these development standards;
2. Steep slopes that are between 10 and 20 feet high, which may be totally exempted from these development standards based upon a critical area report prepared by a geotechnical engineer or geologist that approves of the proposed development and concludes that no impact will result from the development of the steep slope;
3. Steep slopes greater than 20 feet high, which are regulated by these development standards; and
4. Steep slopes that were created by previous legal grading, which can be altered and/or developed if the alteration is geotechnically feasible. A report prepared by a geotechnical engineer is typically required. The report must approve the proposed development/alteration and conclude that no impact will result either to the development or to adjacent properties.

## **Buffers**

A buffer is required around all edges of a steep slope, which shall consist of unaltered native vegetation on undeveloped parcels or maintained landscaping or vegetation on lots that have been previously legally altered from their natural state. The purpose of the buffer is to minimize the risk of damage resulting from landsliding and erosion of the steep slope caused by adjacent development. The width of the buffer shall be determined based upon a critical area report prepared by a geotechnical engineer or geologist. In the absence of a critical area report, the buffer width shall be a minimum of 50 feet. For single detached dwelling units only, the department may waive the critical area report requirement and authorize buffer reductions if the department determines that the reduction will adequately protect the development and the critical area. Unless otherwise provided for, removal of any vegetation from a steep slope or steep slope buffer is prohibited. If a steep slope buffer was developed or altered prior to November of 1990, that use is grandfathered and may be maintained.

## **Building Setback**

Unless otherwise provided or as recommended by a critical area report prepared by a geotechnical engineer or geologist, a building setback of 15 feet is required between the steep slope buffer and any building or other structure. Landscaping, uncovered decks, pavement, patios and utility connections (including some elements of septic systems) are allowed within building setbacks.

## **Critical Area Tracts**

Critical area tracts are used to delineate and protect steep slopes and steep slope buffers greater than one acre in size in proposals for such developments as subdivisions and short subdivisions. The critical area tract is a separate parcel that is recorded on all titles of record and held in an undivided interest by each owner of a lot within the subject development. The maintenance and protection of the tract is thus guaranteed in perpetuity.

## **Allowed Alterations**

The following activities generally are allowed within steep slope hazard areas (please refer to Section 131 for a complete listing of allowed alterations).

For steep slopes greater than 20 feet high (and their buffers) that have not been developed previously:

1. Utility lines in certain locations (including above ground electric lines, septic/sewer lines and water lines, with restoration/revegetation as appropriate);

2. Certain surface and storm water facilities, such as discharge sites, provided other restrictions are met;
3. Mining and mineral extraction;
4. Water wells (as utilities, but NOT well houses or maintained access roads, with restoration/revegetation as appropriate);
5. Trails and viewing platforms;
6. Hazard tree removal;
7. Restoration/revegetation using native plants;
8. Maintenance and/or creation of view corridors through very limited trimming and pruning;
9. Construction of a farm field access road if in compliance with a farm management plan;
10. Limited clearing and grading needed to prepare a critical areas report; and
11. Stabilization of the slope necessary to protect existing structures and other features.

For steep slopes greater than 20 feet high (and their buffers) that have been developed prior to November of 1990 (please note that one form of development, such as logging, does not necessarily allow an expansion of other forms of development), all of the above plus the following:

1. Maintenance and repair of existing structures (provided there is no landslide hazard that is not mitigated);
2. Maintenance of existing landscaping, pavement, slope stabilization, uncovered decks, and other existing alterations;
3. Replacement of existing structures (provided there is no landslide hazard that is not mitigated); and
4. Expansion of existing structures provided:
  - there is no expansion of the footprint of non-residential structures,
  - for dwelling units, the expansion is no more than 1,000 square feet of footprint, and
  - the location of any expansions have the least impact on the critical area.

All expansions must be accompanied by landslide hazard mitigation as necessary.

For steep slopes greater than 20 feet high (and their buffers) that were created or altered through previously legal grading such that the current surface topography can be considered manmade:

Basically, all of the above is allowed along with new construction and development provided that the alterations are geotechnically feasible. A report prepared by a geotechnical engineer is typically required that approves the proposed development/alteration and concludes that no impact will result either to the development or to adjacent properties.

There is no limit on clearing or grading or structure expansions unless other critical areas issues or development restrictions supercede these manmade steep slope restrictions.

## Part Two – Critical Areas

# Critical Aquifer Recharge Areas

Critical aquifer recharge areas (CARAs) are areas in King County that overlie significant groundwater resources and are particularly susceptible to ground water contamination should pollutants be released on the surface or in the shallow subsurface (such as from a leaking fuel tank, a landfill, or pesticides on a golf course). Significant groundwater resources include those used by public water wells as well as sole-source aquifers. The idea is to control contaminants so that they are not released into the soil to seep into our water supply. Once contaminants are released, they are difficult to contain and remove, and so the intent is to prevent future spills. Another element of CARA is the protection of groundwater recharge; this element is addressed countywide via clearing and grading standards and storm water standards that aim to protect and maximize existing groundwater recharge.

This portion of the code affects mainly new commercial development proposals, but some new residential developments are also affected through new standards applied to septic systems. Septic systems are designed to neutralize human waste through bacterial action which removes nitrates and other contaminants. However, a concentration of septic systems could result in the effluent leaving the drainfields delivering more nitrate to the groundwater than is acceptable for drinking water supply, and this could contaminate the ground water supply and affect nearby water wells.

CARAs are located along many major rivers in King County and along some of the largest tributaries of those rivers. This is due to the abundant groundwater supplies that are close to the land surface in those areas and because those areas have high permeability soils. Vashon and Maury Island are entirely covered by CARAs, but these are a special case with respect to the rest of the county because Vashon and Maury, being isolated islands surrounded by undrinkable salt water, depend exclusively on well water from local recharge for their water supply. It is no stretch to say that if not for clean well water on Vashon and Maury Island, people could not be living there as they are today.

## Mapped Areas and Categories

Attached to the ordinance is a map that the county has adopted showing the locations and categories of critical aquifer recharge areas. The CARAs were mapped based on the geology and physical characteristics of the soils in the county, depth to groundwater, and known aquifers and active groundwater supplies. An assessment of the relative sensitivity of the areas led to the classification of CARAs into three categories (numbered I, II, and III), with Category I being the most critical

and Category III the least. Areas of the county that do not fall into any of the three classifications are thought to have low potential for the contamination of groundwater and a low dependence on local groundwater. However, property owners should be aware that groundwater exists essentially everywhere and that all chemical spills, and even the casual home use of cleaners, pesticides and herbicides, may have the potential for some degree of environmental damage if proper protections are not taken.

There are three categories of Critical Aquifer Recharge Areas:

1. **Category I** critical aquifer recharge areas include those mapped areas that King County has determined are highly susceptible to groundwater contamination and that are located within a sole source aquifer or a wellhead protection area.
2. **Category II** critical aquifer recharge areas include those mapped areas that King County has determined:
  - have a medium susceptibility to ground water contamination and are located in a sole source aquifer or a wellhead protection area; or
  - are highly susceptible to ground water contamination and are not located in a sole source aquifer or wellhead protection area.
3. **Category III** critical aquifer recharge areas include those mapped areas that King County has determined have low susceptibility to groundwater contamination and are located over an aquifer underlying an island that is surrounded by saltwater. This includes all of Vashon and Maury Islands that is not either Category I or Category II.

It is possible to contest the classification of a particular property. Upon application for a reclassification supported by a critical areas report that includes a hydrogeologic site evaluation, the county may determine that an area either does not meet the criteria for a critical aquifer recharge area and declassify that area, or has the wrong critical aquifer recharge area classification and determine the correct classification.

The DDES GIS will include a GIS map layer to indicate which parcels are in which categories of CARA. Any reclassifications will also be shown in the coverage. The coverage will be updated whenever the King County Council adopts newer maps of CARA as new information becomes available.

## **Development Standards and Restrictions**

### **New Developments in Category I Areas**

Except as otherwise provided, the following new development proposals and alterations are **not allowed** on a site located in a Category I critical aquifer recharge area:

1. Transmission pipelines carrying petroleum or petroleum products;
2. Sand and gravel, and hard rock mining unless:
  - the site has mineral zoning as of the effective date of this section; or
  - mining is a permitted use on the site and the critical aquifer recharge area was mapped after the date a complete application for mineral extraction on the site was filed with the department;
3. Mining of any type below the upper surface of the saturated ground water that could be used for potable water supply;
4. Disposal of radioactive wastes, as defined in chapter 43.200 RCW;
5. Hydrocarbon extraction;
6. Commercial wood treatment facilities on permeable surfaces;
7. All underground storage tanks, including tanks that are exempt from the requirements of chapter 173 WAC, with hazardous substances, as defined in chapter 70.105 RCW, that do not comply with standards of chapter 173-360 WAC and K.C.C. Title 17;
8. Above-ground storage tanks for hazardous substances, as defined in chapter 70.105 RCW, unless protected with primary and secondary containment areas and a spill protection plan;
9. Golf courses;
10. Cemeteries;
11. Wrecking yards;
12. Landfills for hazardous waste, municipal solid waste or special waste;
13. On lots smaller than one acre, an onsite septic system, unless:
  - the system is approved by the Washington State Department of Health and the system either uses an up flow media filter system or a proprietary packed-bed filter system or is designed to achieve approximately 80 percent total nitrogen removal for typical domestic wastewater; or
  - the Seattle-King County Department of Public Health determines that the systems described above will not function on the site.

## **New Developments in Category II Areas**

Except as otherwise provided the following new development proposals and alterations are **not allowed** on a site located in a Category II critical aquifer recharge area:

1. Mining of any type below the upper surface of the saturated ground water that could be used for potable water supply;
2. Disposal of radioactive wastes, as defined in chapter 43.200 RCW;
3. Hydrocarbon extraction;
4. Commercial wood treatment facilities located on permeable surfaces;
5. A. Except for a Category II critical aquifer recharge area located over an aquifer underlying an island that is surrounded by saltwater (meaning on Vashon and Maury Islands), underground storage tanks with

- hazardous substances, as defined in chapter 70.105 RCW, that do not meet the requirements of chapter 173-360 WAC and K.C.C. Title 17.
- B. For a Category II critical aquifer recharge area on Vashon and Maury Islands, all underground storage tanks, including tanks that are exempt from the requirements of chapter 173 WAC, with hazardous substances, as defined in chapter 70.105 RCW, that do not comply with standards of chapter 173-360 WAC and K.C.C. Title 17.
6. Above-ground storage tanks for hazardous substances, as defined in chapter 70.105 RCW, unless protected with primary and secondary containment areas and a spill protection plan;
  7. Wrecking yards;
  8. Landfills for hazardous waste, municipal solid waste, or special waste;
  9. On lots smaller than one acre, an onsite septic system, unless:
    - the system is approved by the Washington State Department of Health and the system either uses an up flow media filter system or a proprietary packed-bed filter system or is designed to achieve approximately 80 percent total nitrogen removal for typical domestic wastewater; or
    - the Seattle-King County Department of Public Health determines that the systems described above will not function on the site.

## **New Developments in Category III Areas**

Except as otherwise provided the following new development proposals and alterations are **not allowed** on a site located in a Category III critical aquifer recharge area:

1. Disposal of radioactive wastes, as defined in chapter 43.200 RCW;
2. Hydrocarbon extraction;
3. Commercial wood treatment facilities located on permeable surfaces;
4. Underground storage tanks, including tanks that are exempt from the requirements of chapter 173 WAC, with hazardous substances, as defined in chapter 70.105 RCW, that do not comply with standards of chapter 173-360 WAC and K.C.C. Title 17;
5. Above ground storage tanks for hazardous substances, as defined in chapter 70.105 RCW, unless protected with primary and secondary containment areas and a spill protection plan;
6. Wrecking yards; and
7. Landfills for hazardous waste, municipal solid waste, or special waste.

## **Improvement Proposals for Developments with Existing Underground Storage Tanks**

The following standards apply to development proposals and alterations that are substantial improvements on a developed site located in a critical aquifer recharge area:

1. The owner of an underground storage tank, including tanks that are exempt from the requirements of chapter 173 WAC, with hazardous substances, which are located in a Category I or III critical aquifer recharge area or a Category II on Vashon and Maury Islands shall either bring the tank into compliance with standards of chapter 173-360 WAC and K.C.C. Title 17 or properly decommission or remove the tank, and;
2. The owner of an underground storage tank in a Category II critical aquifer recharge area that is not on Vashon and Maury Islands shall bring the tank into compliance with the requirements of chapter 173-360 WAC and K.C.C. Title 17 or shall properly decommission or remove the tank.

## **Other Provisions**

Some other provisions of the CARA restrictions call for water well decommissioning and monitoring as well as instituting best management practices to limit storm water runoff. These include:

1. In any critical aquifer recharge area, property owners shall properly decommission all wells that are abandoned. This may include plugging the abandoned well with an approved inert and impervious substance so that groundwater contamination is not possible in the future. State Department of Ecology regulations describe the requirements for decommissioning in WAC 173-160-381, which is already required by state law.
2. Within the urban growth area, proposals for new residential development shall incorporate best management practices included in the King County Surface Water Design Manual in order to infiltrate storm water runoff to the maximum extent practical.
3. On an island surrounded by saltwater (this applies exclusively to Vashon and Maury Islands), the owner of a new well located within 200 feet of the ordinary high water mark of the marine shoreline shall test the well for chloride levels using testing protocols approved by the Washington State Department of Health. The owner shall report the results of the test to Seattle-King County Department of Public Health (attention Environmental Health Division, Drinking Water Program) and to the Department of Natural Resources and Parks (attention: Water and Land Resources Division, Groundwater Protection Program). If the test results indicate saltwater intrusion is likely to occur (or has occurred), the King County Department of Natural Resources

and Parks, in consultation with Seattle-King County Department of Public Health, shall recommend appropriate measures to prevent saltwater intrusion.

## **Nonconforming Development Proposals and Future Evaluation**

On sites greater than 20 acres, the department may approve development proposals otherwise prohibited by this ordinance if the applicant demonstrates through a critical areas report that the development proposal is located outside the critical aquifer recharge area and that the proposal will not cause a significant adverse environmental impact to the critical aquifer recharge area. King County may also evaluate and implement, as appropriate, ground water management plans and wellhead protection programs to further protect ground water resources. Guidance on these measures will be added to this document as they become available.

## Part Two – Critical Areas

# Wetlands

Within the CAO, wetlands are defined as non-aquatic areas that are inundated or saturated by ground water at a frequency and duration sufficient to support, and under normal circumstances supports, a prevalence of vegetation typically adapted for life in saturated soil conditions. Except for features intentionally made for the purpose of mitigation, a wetland does not include an artificial feature made from a non-wetland area.

There are many types of wetlands from open water, emergent, forested, scrub-shrub, to wetland meadows. Several new definitions have been added or modified in the CAO regarding wetlands. Wetlands that are wet meadows, grazed or tilled have been redefined as an emergent wetland that has grasses, sedges, rushes or other herbaceous vegetation as its predominant vegetation and has been previously legally converted to agricultural activities.

A new definition, wetland complexes, has been added to the CAO. A wetland complex is a grouping of two or more wetlands with the establishment of vegetated corridors between the wetlands. Best available science (available at: <http://www.metrokc.gov/ddes/cao>), found that wetlands are also influenced by the immediate adjoining area, the watershed and the landscape. Grouping wetlands and connecting them with corridors will reduce wetland isolation and habitat fragmentation, results of development that lead to decreased species richness and local extinctions of wetlands. Wetland complexes are defined in more detail later in this chapter.

## Development standards

### General provisions

#### Wetland categories

*Reference CAO Section 183*

The CAO has adopted the Department of Ecology's Wetland Rating methodology. Wetlands are classified into four categories using the Washington State Wetland Rating System for Western Washington (Ecology publication #04-06-025). The Washington State Wetland Rating System categorizes wetlands based on specific attributes such as rarity, sensitivity, and function. The rating system uses a point system designed to differentiate between wetlands based on their sensitivity to disturbance, their rarity, our ability to replace them and the functions that they

provide. It is important to recognize that wetlands of all categories have valuable functions in the landscape. The wetland rating system does not recognize illegal modification to wetlands. The Washington State Wetland Rating System for Western Washington is available at: <http://www.ecy.wa.gov/biblio/0406025.html>.

The wetland categories are:

### **Category I**

Wetlands that represent a unique or rare wetland type, or are more sensitive to disturbance than most wetlands, or are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime, or provide a high level of functions, score of 70 points (out of 100) on the wetland rating form. Category 1 wetlands include estuarine, bogs, mature and old-growth forests, coastal lagoons, wetlands that perform many functions very well. Category 1 wetlands may be part of the “priority habitat” as defined by the Washington State Department of Fish and Wildlife (WDFW) <http://www.wdfw.wa.gov/hab/phspage.htm>, or be identified as a Natural Heritage wetland by the Washington Natural Heritage Program of the Department of Natural Resources (DNR) <http://www.dnr.wa.gov/nhp/index.html>.

### **Category II**

Wetlands that are difficult, though not impossible to replace, and provide high levels of some functions. These wetlands occur more commonly than Category I wetlands but still need a relatively high level of protection. Category II wetlands include, but are not limited to, wetlands that perform functions well and score 51 to 69 points for habitat.

### **Category III**

Wetlands with a moderate level of functions, scores between 30 to 50 points for habitat and generally have been disturbed in some ways, and are often less diverse or more isolated.

### **Category IV**

Wetlands that have the lowest levels of functions (scores less than 30 points for habitat) and are often heavily disturbed. These are wetlands that we should be able to replace or improve. These wetlands may provide some important function and also need to be protected.

## **Wetland buffers**

*Reference CAO Section 185*

A wetland buffer is a designated area contiguous to and intended to protect and be an integral part of a wetland. Beyond providing protection for wetlands, buffers also serve valuable functions for a variety of wildlife species as they provide habitat for foraging, breeding, and protective cover. Buffers are generally upland areas of native or planted vegetation that protects the character and function of wetlands from indirect impacts and from the adverse impacts of an adjacent land use (McMillan, A. *The Science of Wetland Buffers and Its Implication for the Management of Wetlands* 2000). Buffers are measured horizontally from the edge of the delineated wetland. The buffer width is determined based on the category of the wetland, the location of the wetland inside or outside of the Urban Growth Area established by the King County Comprehensive Plan and habitat score based on the Department of Ecology's Wetland Rating System.

## Required buffers

**Table 1. Required buffer widths for wetlands located within the Urban Growth Area**

| <b>WETLAND CATEGORY</b>                              | <b>BUFFER WIDTH</b> |
|--|---------------------|
| <b>Category I</b>                                    |                     |
| Natural Heritage Wetlands                            | 215                 |
| Bog  | 215                 |
| Estuarine  | 175                 |
| Coastal lagoon                                       | 175                 |
| Habitat score from 29 to 36 points                   | 225                 |
| Habitat score from 20 to 28 points                   | 150                 |
| Category I wetlands not meeting any criteria below   | 125                 |
| <b>Category II</b>                                   |                     |
| Estuarine  | 135                 |
| Habitat score from 29 to 36 points                   | 200                 |
| Habitat score from 20 to 28 points                   | 125                 |
| Category II wetlands not meeting any criteria below  | 100                 |
| <b>Category III</b>                                  |                     |
| Habitat score from 20 to 28 points                   | 125                 |
| Category III wetlands not meeting any criteria below | 75                  |
| <b>Category IV</b>                                   | 50                  |

## Buffer modification for urban wetlands

Urban buffers may be increased by 50 feet if they are Category I or II wetlands with habitat scores greater than 20 points and are located within 300 feet of a priority habitat area as defined by the Washington State Department of Fish and Wildlife unless:

- The applicant provides a relatively undisturbed vegetated corridor at least 100 feet wide between the wetland and all priority habitat areas located within 300 feet of the wetland. The corridor is protected through a conservation easement, native growth protection easement or equivalent; and
- The applicant implements all applicable mitigation measures identified in Table 2.

Urban buffers may be decreased by 25 feet if:

- The applicant implements all applicable mitigation measures identified in Table 2; or
- The applicant proposes alternate mitigation to reduce the impacts of the development and the department determines the alternative provides equivalent mitigation.

**Table 2. Mitigation measures to reduce buffers for wetlands located within the Urban Growth Area**

| <b>Disturbance</b>          | <b>Measures to minimize impacts</b>   | <b>Activities that may cause the disturbance</b>   |
|-----------------------------|---|--|
| Lights                      | Direct lights away from wetland   | Parking lots, warehouses, manufacturing, high density residential <sup>1</sup>                             |
| Noise                       | Place activity that generates noise away from the wetland   | Manufacturing high density residential   |
| Toxic runoff                | Route all new untreated runoff away from wetland, or covenants limiting use of pesticides within 50 feet of wetland, or implement integrated pest management program <sup>2</sup> | Parking lots, roads, manufacturing, residential areas, application of agricultural pesticides, landscaping |
| Change in water regime      | Infiltrate or treat, detain and disperse into buffer new runoff from impervious surfaces  | Any impermeable surface, lawns, tilling  |
| Pets and human disturbances | Privacy fencing <sup>3</sup> or landscaping to delineate buffer edge and to discourage disturbance of wildlife by humans and pets   | Residential areas  |
| Dust                        | BMPs for dust <sup>4</sup>  | Tilled fields  |
| Degraded buffer condition   | Nonnative plants to be removed and replaced with native vegetation per an approved landscaping plan <sup>5</sup>  | All activities potentially requiring buffers.  |

<sup>1</sup> High-density residential is defined as: residential parcels zone urban.

<sup>2</sup> Integrated Pest Management (IPM) is defined as: a holistic approach to pest (including weed) management. IPM stresses the prevention of pest problems through design and maintenance practices and uses a range of pest management techniques, including biological, cultural and mechanical. Chemical controls were to be considered a last resort. More information is available at: <http://dnr.metrokc.gov/wlr/lands/weeds/index.htm>.

<sup>3</sup> Privacy fencing in buffers must be wildlife passable. See fence requirements later in this chapter.

<sup>4</sup> BMPs for dust are available from King Conservation Service: <http://www.kingcd.org>.

<sup>5</sup> Approved Landscaping Plan: Plans must be bonded and monitored for 3 years after installation.

Plan requirements, bond quantity worksheet (to determine bond amount), and monitoring plan guidelines can be found in the King County DDES publication, "Restoration & Enhancement Guidelines of Sensitive Areas in King County". Available on the King County Web site: <http://metrokc.gov/ddes>.

**Table 3. Required buffer widths for wetlands located outside of the Urban Growth Area**

|  | <b>INTENSITY OF IMPACT OF ADJACENT LAND USE</b> |                        |                   |
|--|---|------------------------|-------------------|
|  | <b>HIGH IMPACT</b>                              | <b>MODERATE IMPACT</b> | <b>LOW IMPACT</b> |
| <b>WETLAND CATEGORY AND CHARACTERISTICS</b>  |   |                        |                   |
| <b>Category I</b>  |   |                        |                   |
| Category I wetlands not meeting any of the criteria below                                  | 100 feet  | 75 feet                | 50 feet           |
| Natural Heritage Wetlands  | 250 feet  | 190 feet               | 125 feet          |
| Bog  | 250 feet  | 190 feet               | 125 feet          |
| Estuarine  | 200 feet  | 150 feet               | 100 feet          |
| Coastal lagoon   | 200 feet  | 150 feet               | 100 feet          |
| Habitat score from 29 to 36 points   | 300 feet  | 225 feet               | 150 feet          |
| Habitat score from 20 to 28 points   | 150 feet  | 110 feet               | 75 feet           |
| Water quality improvement score from 24 to 32 points and habitat score less than 20 points | 100 feet  | 75 feet                | 50 feet           |
| <b>Category II</b>   |   |                        |                   |
| Category II wetlands not meeting any of the criteria below                                 | 100 feet  | 75 feet                | 50 feet           |
| Estuarine  | 150 feet  | 110 feet               | 75 feet           |
| Interdunal   | 150 feet  | 110 feet               | 75 feet           |
| Habitat score from 29 to 36 points   | 300 feet  | 225 feet               | 150 feet          |
| Habitat score from 20 to 28 points   | 150 feet  | 110 feet               | 75 feet           |
| Water quality improvement score from 24 to 32 points and habitat score less than 20 points | 100 feet  | 75 feet                | 50 feet           |
| <b>Category III</b>  |   |                        |                   |
| Category III wetlands not meeting any of the criteria below                                | 80 feet   | 60 feet                | 40 feet           |
| Habitat score from 20 to 28 points   | 150 feet  | 110 feet               | 75 feet           |
| <b>Category IV</b>   |   |                        |                   |
| Category IV wetlands not meeting any of the criteria below                                 | 50 feet   | 40 feet                | 25 feet           |

Note: Refer to CAO Section 185 B2 for descriptions of high, moderate and low impact.

### **Buffer width modification for wetlands located outside of the urban growth area**

Certain wetland buffer widths may be modified from Table 3 and include:

1. Buffer averaging based on ecological structure and functions of the buffer;
2. Wetlands containing documented habitat for endangered, threatened or species of local importance;
3. Wetland buffer that includes a steep slope or landslide hazard areas;
4. Wetland complex located outside of the Urban Growth Boundary;

5. Wetland complex located within the Urban Growth Boundary and designated as “high” on the Basin and Shoreline Conditions Map (attachment A in the CAO);
6. Wetland buffers where a legal roadway transects the buffer;
7. Wetlands that are voluntarily created, restored or enhanced as mitigation; and
8. Approved Rural Stewardship Plan (Section 139) or Farm Management Plan (Section 138).

## **Buffer width averaging**

The concept of buffer width averaging involves decreasing an area of the buffer within the development proposal and increasing the buffer in another area of the wetland if the new buffer will provide additional protection to wetlands or enhance their functions and as long as the total area contained in the buffer on the development proposal site does not decrease. The department may approve on a case-by-case basis the minimum buffer width by buffer averaging. Criteria for reduction include:

- Ecological structure and function of the buffer after averaging is equivalent to or greater than before averaging;
- Averaging includes the corridors of a wetland complex;
- The total buffer area after averaging is equivalent to or greater than the area of the buffer before averaging;
- The additional buffer is contiguous with the standard buffer; and
- If buffer averaging allows a structure or landscape area to intrude into the area that was buffer area before averaging, the resulting landscaped area can not extend more than 15 feet from the edge of the structure’s footprint towards the reduced buffer.

Buffer width averaging criteria and implementation are detailed in the Public Rule which will be updated and will include methods for determining buffer function.

## **Wetlands with documented habitat**

For wetlands that contain documented habitat for endangered, threatened or species<sup>6</sup> of local importance<sup>7</sup> the following applies:

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<sup>6</sup> Documented habitat for endangered, threatened species is available at: WA Department of Fish and Wildlife <http://wdfw.wa.gov>

<sup>7</sup> Species of local importance are listed in the 2004 King County Comprehensive Plan (E-172) and include habitats for listed endangered, threatened or sensitive species, habitat for salmonids of local importance, habitat for raptors and herons of local importance, commercial and recreational shellfish areas, kelp and eelgrass beds, herring, sand lance and smelt spawning areas, wildlife habitat networks, riparian corridors. The King County Comp Plan is available at: <http://metrokc.gov/ddes/compplan>.

- The department will establish the appropriate buffer based on a habitat assessment to ensure that the buffer provides adequate protection for the sensitive species;
- The department may apply the buffer increase rules (CAO Section 185A2);
- The department may apply the buffer reduction rules (CAO Section 185A3); and
- The department may apply the buffer averaging rules (CAO Section 185C).

## **Steep slope or landslide hazard area**

For a wetland that contains steep slope or landslide hazard, the buffer width is the greater of either the wetland buffer or 25 feet beyond the hazard area.

## **Wetland complex**

The buffer widths for wetland complexes located outside of the Urban Growth Boundary or within the Urban Growth Boundary and designated as “high” on the Basin and Shoreline Conditions Map, the following applies:

- The buffer width for each wetland within the complex is the same width as the buffer width required for the category of the wetland;
- If the buffers of the wetlands in the complex do not touch or overlap with at least one other wetland in the complex, then a corridor is required between the two wetlands (see CAO Section 185.D.3 for the criteria for establishing the corridor width).

A wetland complex is defined as a grouping of two or more wetlands (not including grazed wetland meadows that include the following criteria:

- Each wetland included in the complex is within 500 feet of the delineated edge of at least one other wetland complex;
- The complex includes at least one Category I or II wetland, three Category III wetlands, or four Category IV wetlands;
- The area between each wetland and at least one other wetland in the complex is predominately vegetated with shrubs and trees.
- There are no barriers<sup>8</sup> to migration or dispersal of amphibian, reptile, or mammal species that are commonly recognized to exclusively or partially use

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<sup>8</sup> Barriers such as roads (wide paved roads), roads with increased traffic, large exposed or maintained areas such as lawns, agriculture fields, clear cuts, and other areas that lack mature forest cover, fallen logs and organic debris. Barriers also include fences that are not wildlife passable, drift fences that are not removed, and walls, sidewalks, curbs and gutters. Depressions that direct and channelize animals away from other wetlands or hold animals until they desiccate are barriers and seasonal barriers such as roadside and farm ditches, and other water bodies with strong current velocity.

wetland and wetland buffers during a critical life cycle stage such as breeding, rearing, or feeding.

## **Roadway transects buffer**

Where a legally established road transects a buffer, the minimum required buffer width may be reduced to the edge of the roadway if the buffer on the other side of the roadway:

- Does not provide additional protection from the proposed development or the wetland; and
- Provides insignificant biological, geological, or hydrological buffer functions.

A legally established roadway is defined as: the maintained areas cleared and graded within a road right-of-way or railroad prism. For a road right-of-way, "roadway" includes all maintained and traveled areas, shoulders, pathways, sidewalks, ditches and cut and fill slopes. For a railroad prism, "roadway" includes the maintained railbed, shoulders, and cut and fill slopes. "Roadway" is equivalent to the "existing, maintained, improved road right-of-way or railroad prism" as defined in the regional road maintenance guidelines.

## **No development proposal or alteration**

The department may approve a modification of the minimum required buffer for voluntary enhancement or restoration projects that are not mitigation for a development proposal or alteration.

## **Rural Stewardship or Farm Management Plan**

The department may approve a modification of the minimum buffer through a Rural Stewardship Plan (Section 139) or Farm Management Plan (Section 138).

## **Building and setback lines**

*Reference CAO Section 157*

A building setback line (BSBL) of 15 feet is required between the edge of the wetland area buffer and any building or structure. Landscaping, uncovered decks, building overhangs that do not exceed more than 18 inches into the setback area, driveways, patios, and drainfields, and some utility connections are allowed within the BSBL.

## **Permanent survey marking, signs, and fencing**

*Reference CAO Section 154*

### **Wetland in Tract**

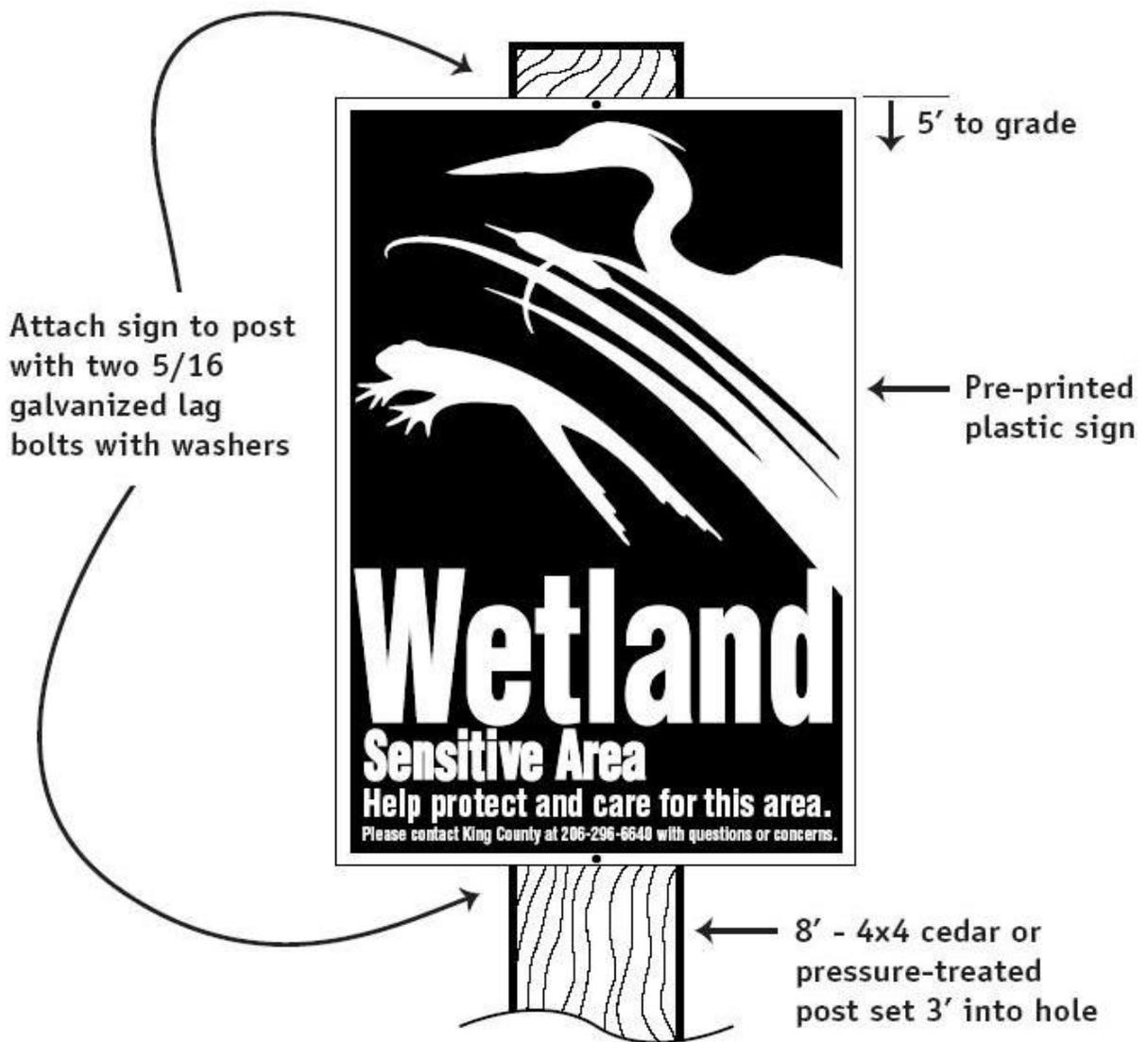
The development proposal must include permanent survey stakes delineating the boundary of the wetland tract and adjoining property. Wetland signs must be placed at the edge of the tract.

### **Wetland Not in Tract**

Wetland signs and fences may be required by the department.

### **Sign and fence Requirements**

The signs must be placed at the edge of the required buffer, between the buffer and the 15-foot BSBL. The spacing of the signs will be determined during the review of the development proposal. Generally signs are spaced every 50 feet to 150 feet and stationed in a prominent location (i.e. at the closest point to the proposed development). Signs may be attached to a post or fence. Wetland Areas Boundary signs are available from the King County Department of Development and Environmental Services for \$2.50. A Stream Sign Installation Detail is available from DDES.



## King County wetland sign installation detail

The fence should be permanent, a minimum 4 feet high, and be wildlife passable. Wildlife should be able to get into and out of the mitigation site through the fence. Small animals should be able to travel under the fence and large mammals should be able to jump over the fence. Often split rail or smooth wire fences are used.

## Notice of Critical Areas

*Reference CAO Section 155*

The applicant/owner of any development proposal that contains a wetland, wetland buffer, or wetland mitigation, will be required to file a Notice of Critical Areas. The

paperwork for the Notice of Critical Areas will be approved and prepared by the Department. The applicant/owner will be responsible for filing the Notice of Critical Areas with King County Records and Elections.

## **Critical Area Tracts**

*Reference CAO Section 156*

The applicant will use a recorded critical area tract to delineate and protect wetlands and buffers in development proposals for subdivisions, short subdivisions, or binding site plans.

## **Critical Area Review**

*Reference CAO Section 146*

Prior to any clearing, grading, or site preparation for a development proposal permit application or any other reason to alter a site, a critical area review must be conducted to see if a wetland or buffer is located on or near the development site. Wetlands that are located off site may have a buffer that extends into the proposed development. The critical area review will identify all wetlands and buffers, wetland category, determine if the wetland or buffer will be altered due to the development proposal and determine if the development proposal is consistent with this chapter. If impacts are proposed, the review will determine if the proposal has avoided impacts to the wetland area and to insure that the mitigation measures and monitoring are consistent with the goals, objectives, and requirements of this chapter.

## **Report Requirements**

*Reference CAO Section 147*

The applicant for the development proposal is required to submit a Critical Areas Report to the department for review. The department will determine whether a Level I, II, III, or IV four critical areas report is required.

A Level I report is required for development proposals requiring a critical area review and includes the following basic information:

- Wetland Delineation (CAO Section 114). The delineation will be consistent with the methods in the 1997 Washington State Wetlands Identification and Delineation Manual, titled Washington State Department of Ecology publication #96-94, available at <http://www.ecy.wa.gov/biblio/9694.html>. The delineation should be mapped accurately on a scaled site plan. In some cases the department may require that the wetland delineation is surveyed.

The wetland delineation must be conducted by an expert. The applicant may choose to hire a consultant or a King County DDES Environmental Scientist III to conduct the study. The department has a preferred wetland consultant list available at [www.metrokc.gov/ddes](http://www.metrokc.gov/ddes) and a handout called "Selecting a Wetland/Stream Consultant."

- Valid Critical Areas Designation. Results from the wetland delineation will be designated regarding the presence, type, and the location of sensitive area on the property. Additional information (Bulletin 51) and application form can be found at: [www.metrokc.gov/ddes](http://www.metrokc.gov/ddes) or by calling DDES at 206-296-6600.
- If applicable, a critical area review performed for the same site or portion of the site for another permit approval process in the prior five years.
- If applicable, an approved Farm Management Plan (approved after January 1, 1993 and consistent with CAO Section 138), rural stewardship plan (consistent with CAO Section 139), an approved forest stewardship plan (effective date of this section).
- A basic checklist for each critical area on or adjacent to the site and buffer including if relevant topographic features, general vegetation types and potential habitat and breeding sites, and any information related to the classification, type or category of the critical area. (A check list will be developed).

Level II, III, and IV reports are required when additional information beyond what is described above is needed to determine potential impacts or risks and appropriate mitigation.

## **Avoiding impacts to critical areas**

*Reference CAO Section 149*

If the development is proposing impacts or alterations to the wetland or buffer then the applicant must try to avoid the impact to the extent possible by applying the sequential measures described in this section. Often referred to as mitigation sequencing, there are seven mitigation measures that are listed in order of priority. The applicant will be required to document in the critical area report that the appropriate measure was applied. For instance, the first measure is to avoid the impact by not taking the action. Avoidance includes redesigning the proposed development to avoid all impacts to the wetland and buffer. If the site conditions do not allow for redesigning the proposed development, then the second mitigation measure, minimizing the impact would be applied. Section 149 lists the avoidance measures.

## **Mitigation and monitoring**

*Reference CAO Section 150, 188*

Mitigation is required to compensate for impacts to the wetland or wetland buffer. Prior to determining the appropriate mitigation, a Critical Areas Report has been verified and approved by the department. In addition, the sequential mitigation measures regarding avoidance of the impact have been applied and documented in the report.

Specific mitigation requirements are discussed later in this chapter. Once the mitigation plan has been approved by the department the applicant may implement the plan. When the plan is installed, the applicant will contact the department so that an inspection can be conducted. The applicant will also have to provide the department reasonable access to the property for future monitoring inspections during the monitoring period.

The purpose of the monitoring plan is to monitor the performance of the mitigation plan and includes; compliance with this title, provides a contingency plan in the event of a failure of mitigation or of unseen impacts. The monitoring schedule may extend throughout the impact of the activity. The duration, frequency, and methods of monitoring depend on the goals and objectives and performance standards for the project. In general, mitigation projects will be monitored for at least three to five-years.

There are several sources of information on how to prepare a mitigation plan and monitoring plan.

For single-family projects which involve minor encroachments into the buffer:

King County DDES "Restoration & Enhancement Guidelines of Sensitive Areas in King County". Available on the King County Web site: <http://metrokc.gov/ddes>.

For larger projects:

Ecology Publication "Guidance on Wetland Mitigation in Washington State Part 1 and Part 2. <http://www.ecy.wa.gov/biblio/0406013b.html>.

## **Off-site Mitigation**

*Reference CAO Section 151*

The applicant should mitigate for impacts to wetlands and buffers on or contiguous to the site. If this is not possible, then the department may approve mitigation off the development site if the applicant:

- Can demonstrate that it is not practical to mitigate on the site or contiguous to the site; and

- The offsite mitigation will achieve equal or greater hydrological, water quality and wetland habitat features.

Priority will be given to locations that are within the same drainage subbasin and are mitigation banking sites, resource mitigation reserves, private mitigation sites, or public mitigation sites authorized by this chapter. The department may require documentation that the mitigation site has been permanently preserved from future development.

The department is in the process of developing a list of sites available for off-site mitigation projects, a fee in-lieu of program and resource mitigation reserve .

## **Specific mitigation requirements**

*Reference CAO Section 188*

This section describes how to determine the mitigation for the adverse impacts from an alteration to the wetland or wetland buffer. The mitigation measures must achieve equivalent or greater wetland functions, including but not limited to:

- Habitat complexity, connectivity, and other biological functions; and
- Seasonal hydrological dynamics as provided in the 2004 King County Surface Water Design Manual, available at: <http://metrokc.gov>.

Criteria to determine these functions will be developed in a Public Rule .

To determine how large an area of mitigation is required, ratios of area of mitigation to area of alteration have been developed by the Washington State Department of Ecology. The ratios are based on wetland category, type of wetland, type of mitigation proposed, and whether or not the alteration is permanent or temporary. For alterations to a buffer a ratio of 1:1 (alteration:mitigation) is required.

**Table 4. Required ratios of wetland mitigation area to area of permanent alteration**

| <b>Category and Type of Wetland</b>     | <b>Wetland Re-establishment or Creation</b> | <b>Wetland Rehabilitation</b>                 | <b>1:1 Wetland Re-establishment or Wetland Creation (R/C) and Enhancement (E)</b> | <b>Enhancement Only</b> |
|---|---|---|---|-------------------------|
| Category IV                             | 1.5:1                                       | 3:1   | 1:1 R/C and 2:1 E   | 6:1                     |
| Category III                            | 2:1   | 4:1   | 1:1 R/C and 2:1 E   | 8:1                     |
| Category II Estuarine                   | Case-by-case                                | 4:1 rehabilitation of an estuarine wetland    | Case-by-case  | Case-by-case            |
| All other Category II                   | 3:1   | 8:1   | 1:1 R/C and 4:1 E   | 12:1                    |
| Category I Forested                     | 6:1   | 12:1  | 1:1 R/C and 10:1 E  | Case-by-case            |
| Category I based on score for functions | 4:1   | 8:1   | 1:1 R/C and 6:1 E   | Case-by-case            |
| Category I Natural Heritage site        | Not allowed                                 | 6:1 rehabilitation of a Natural Heritage site | Case-by-case  | Case-by-case            |
| Category I Coastal lagoon               | Not allowed                                 | 6:1 rehabilitation of a coastal lagoon        | Case-by-case  | Case-by-case            |
| Category I Bog                          | Not allowed                                 | 6:1 rehabilitation of a bog                   | Case-by-case  | Case-by-case            |
| Category I Estuarine                    | Case-by-case                                | 6:1 rehabilitation of an estuarine wetland    | Case-by-case  | Case-by-case            |

Table 5 provides ratios of mitigation area for temporary impacts where wetlands will not be impacted by permanent fill material.

**Table 5. Required ratios of wetland mitigation area to area of temporary alteration**

| Wetland category | Permanent conversion of forested and shrub wetlands into emergent wetlands |                |                         | Mitigation for temporal loss of forested and shrub wetlands when the impacted wetlands will be revegetated to forest or shrub communities |                |                         |
|------------------|--|----------------|-------------------------|---|----------------|-------------------------|
|                  | Enhancement  | Rehabilitation | Creation or restoration | Enhancement   | Rehabilitation | Creation or restoration |
| Category I       | 6:1  | 4.5:1          | 3:1                     | 3:1   | 2:1            | 1.5:1                   |
| Category II      | 3:1  | 2:1            | 1.5:1                   | 1.5:1   | 1:1            | .75:1                   |
| Category III     | 2:1  | 1.5:1          | 1:1                     | 1:1   | .75:1          | .5:1                    |
| Category IV      | 1.5:1  | 1:1            | .75:1                   | Not applicable  | Not applicable | Not applicable          |

## Increasing mitigation ratios

The department may increase the wetland mitigation ratios in Table 4 and Table 5. Specific criteria have been developed and are outlined in CAO Section 188D.

## Decreasing mitigation ratios

- The department may decrease the wetland mitigation ratios in Table 4 and Table 5. Specific criteria can be found in CAO Section 188E.
- The department may enter into an agreement to modify mitigation ratios for entities that have demonstrated a strong track record of success in terms of mitigation and have assurance of financial resources to be able to carry through a long-term (8 to 10+ years) monitoring program (CAO Section 189).

## Allowed Alterations to Wetlands and Buffers

*Reference CAO Sections 137 (subsection D), 187*

The standards established in CAO Section 137 apply to all developments that are proposed within a wetland or its buffer. Alterations are allowed in the wetland and buffer if the alteration complies with the development standards, mitigation requirements, and other applicable requirements in this chapter. Refer to the table in CAO Section 137 that lists the allowed alteration (labeled as A) with the corresponding number (1-59) which refers to the alteration condition that applies.

Several general limitations have been added to the provisions in Section 137 regarding alterations within wetlands or their buffers (CAO Section 181). The additional standards include:

- The applicant cannot introduce non-indigenous plants or wildlife to the Puget Sound lowland unless authorized by state or federal permit approval;
- A Category IV wetland less than 2,500 square feet that is not part of a wetland complex may be altered by relocating its functions into a new wetland on the site in accordance with an approved mitigation plan;
- Alterations to Category I wetlands containing bogs or fens are limited to Section 137D.20 D.52 of this ordinance (regarding harvesting of plant material for restoration projects and data collection and research).

## **Allowed alterations**

The allowed alterations from CAO Section 137 are summarized below.

### **Single detached dwelling unit**

Construction of single detached dwelling units is limited to farm residences in grazed or tilled wet meadows and subject to the limitation of subsection D.3 (nonresidential farm structures).

### **Nonresidential farm structures**

Construction of nonresidential farm structures is allowed within grazed or tilled wet meadows or buffers of wetlands or aquatic areas where:

- The site is predominately used for the practice of agriculture;
- The structure is in compliance with an approved Farm Management Plan (See CAO Section 138);
- The structure is either:
  1. on or adjacent to existing nonresidential impervious surface areas, additional impervious surface area is not created waterward of existing impervious surface areas and the area was not used for crop production,
  2. higher in elevation and no closer to the severe channel migration hazard area, or aquatic area or aquatic area buffer than its existing position,
  3. located away from existing impervious surface area that is determined to be the optimum site in the Farm Management Plan;
- Best management practices associated with the structure specified in the Farm Management Plan are installed and maintained; and

- Installation of fencing in accordance with K.C.C. chapter 21A.30 does not require the development of a Farm Management Plan if required best management practices are followed and the installation does not require clearing of critical areas or their buffers.

In severe channel migration hazard area portion of an aquatic buffer only if:

- There is on feasible location on site;
- The structure is not used to house animals or store hazardous substances; and
- The total footprint of all accessory structures within the severe channel migration.

The hazard area will not exceed the greater of 1,000 square feet within the severe channel migration hazard or 2 percent of the severe channel migration hazard area on site.

## **Existing structures**

Existing structures may be maintained or repaired.

Expansion or replacement of existing primary structures is allowed only in the buffer or building setback outside a severe channel migration hazard area if:

- The expansion or replacement does not increase the footprint of a nonresidential structure;
- The expansion or replacement does not increase the footprint of a dwelling unit by more than 1,000 square feet and the location of the expanded area has the least adverse impact on the critical area;
- The structure was not established as the result of a variance, buffer averaging or Reasonable Use Exception; and
- To the maximum extent practical, the expansion or replacement is not located closer to the critical area or within the relic channel that can be connected to an aquatic area.

Allowed upon another portion of an existing impervious surface outside a severe channel migration hazard area if:

- The structure is not located closer to the critical area; and
- The existing impervious surface within the critical area or buffer is not expanded.

## **Remodeling**

Interior remodeling is allowed.

## Docks or piers

Construction of new docks or piers are limited to seasonal floating docks or piers in a Category II, III, or IV wetland or its buffer or along a lake shoreline or its buffer where:

- The existing and zoned density of all properties abutting the entire lake shoreline averages three dwelling units per acre or more;
- At least 75 percent of the lots abutting the shoreline or 75 percent of the lake frontage, whichever constitutes the most lake frontage, has been developed with dwelling units;
- There is not any significant vegetation where the alteration is proposed and the loss of vegetation was not the result of any violation of law;
- The wetland or lake shoreline is not a salmonid spawning area;
- Hazardous substances or toxic material are not used;
- Allowed on Type N or O aquatic areas if hazardous substances or toxic materials are not used; and
- Allowed on Type S or F aquatic areas outside of the severe channel migration hazard area and if in compliance with K.C.C. Title 25 (Shorelines);

Maintenance, repair, or replacement of dock or pier is allowed when located on a lake and if in compliance with K.C.C. Title 25.

## Grading

Grading is not allowed in a wetland.

Construction of new slope stabilization is allowed only where erosion or landsliding threatens a structure, utility facility, roadway, drive way, public trails, aquatic area or wetland if to the maximum extent practical, stabilization work must not disturb the slope and its vegetation cover or any associated critical areas.

Maintenance of existing slope stabilization is allowed when not performed under the direction of a government agency only if:

- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers; and
- When the maintenance or the replacement of bridges or culverts involves waters used by salmonids, the work is in compliance with ditch standards in a Public Rule and the maintenance of culverts is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert and does not involve the excavation of a new sediment trap adjacent

to the inlet. The King County Public Rule is available online at: [http://www.metrokc.gov/ddes/pub\\_rule/#rules](http://www.metrokc.gov/ddes/pub_rule/#rules) (Chapter 21A.24 Sensitive Areas: Maintenance of Ditches Used by Salmonids).

## Clearing

Clearing is allowed for the removal of hazard trees (See CAO Section 107) and vegetation as necessary for surveying or testing purposes. Clearing is also allowed for harvesting of plants and plant materials, such as plugs, stakes, seeds or fruits, and for restoration and enhancement projects.

Cutting of firewood is subject to the following:

- Not allowed in a wildlife habitat conservation area;
- Allowed within a critical area for personal use with an approved forest management plan or rural stewardship plan; and
- Allowed within a wildlife network with an approved management plan under K.C.C.21A.14.270 as recodified by this ordinance.

Removal of vegetation for fire safety is allowed in buffers if in accordance with best management practices approved by the King County Fire Marshal.

Removal of noxious weeds or invasive vegetation is allowed if:

- In accordance with an approved Forest Management Plan, Farm Plan, or Rural Stewardship plan; or
- Without an approved Forest Management Plan or Rural Stewardship Plan if:
  1. removal is undertaken with hand labor, including hand-held mechanical tools, unless King County Noxious Weed Control Board otherwise prescribes the use of riding mowers, light mechanical cultivating equipment or biological control methods. Call 206-296-0290 or visit the King County Noxious Weed Control Web site at: <http://dnr.metrokc.gov/wlr/lands/weeds/index.htm>. The area of noxious weed or invasive vegetation removal must be stabilized to avoid re-growth or regeneration and the area must be re-vegetated with native or non-invasive vegetation and stabilized against erosion, and
  2. herbicide use is in accordance with federal and state law.

## Forest practices

Non-Conversion Class IV-G Forest Practice is allowed if conducted in accordance with chapter 76.09 RCW and Title 222 WAC and a Forest Management Plan is approved for the site by the King County Department of Natural Resources and Parks. The property owner must also provide a notice of intent in accordance with RCW 76.09.060 that the site will not be converted to non-forestry use within six

years. Additional information on Forest Management Plans is available at:  
<http://dnr.metrokc.gov/wlr/lands/forestry/index.htm>

## Roads

Construction of new roads, right-of way structure on unimproved right-of way is allowed if:

- There is no feasible location with less adverse impact on an aquatic area and its buffer;
- The road corridor is not located over habitat used for salmonid rearing or spawning or by any species listed as endangered or threatened by the state and federal government unless the department determines there are no other feasible crossing sites;
- The road corridor width is minimized to the maximum extent practical;
- The construction occurs during approved periods for instream work; and
- The corridor will not change or diminish the overall aquatic area flow peaks, duration or volume or the flood storage capacity.

Maintenance of public road right-of-way structure is allowed:

- When performed by or at the direction of or authorized by a government agency in accordance with the regional road maintenance guidelines. These guidelines are available online at:  
<http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

Expansion beyond public road right-of -way structure is allowed when:

- There is no feasible location with less adverse impact on an aquatic area and its buffer;
- The road corridor is not located over habitat used for salmonid rearing or spawning or by any species listed as endangered or threatened by the state and federal government unless the department determines there are no other feasible crossing sites;
- The road corridor width is minimized to the maximum extent practical;
- The construction occurs during approved periods for instream work; and
- The corridor will not change or diminish the overall aquatic area flow peaks, duration or volume or the flood storage capacity.

Repair, replacement or modification within the roadway is allowed when performed by or at the direction of or authorized by a government agency in accordance with the regional road maintenance guidelines. These guidelines are available online at:  
<http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

## Driveways and private access roads

Construction of driveways or private access roads is allowed if:

- An alternative access is not available;
- Impact to the critical area is minimized to the maximum extent practical including the use of walls to limit the amount of cut and fill necessary;
- The risk associated with landslide and erosion is minimized;
- Access is located where it is least subject to risk from channel migration; or
- Construction occurs during approved periods for instream work

## Farm field access drives

Construction of farm field access drives are allowed if in compliance with an approved Farm Management Plan. See CAO Section 138 relating to Farm Management Plans.

Maintenance of a driveway, private access road, or farm field access drive is allowed. When the maintenance is not performed under the direction of a government agency, the maintenance is allowed only if:

- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers; and
- When the maintenance or the replacement of bridges or culverts involves waters used by salmonids, the work is in compliance with ditch standards in a Public Rule and the maintenance of culverts is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert and does not involve the excavation of a new sediment trap adjacent to the inlet. The King County Public Rule is available online at: [http://www.metrokc.gov/ddes/pub\\_rule/#rules](http://www.metrokc.gov/ddes/pub_rule/#rules) (Chapter 21A.24 Sensitive Areas: Maintenance of Ditches Used by Salmonids).

## Bridges or culverts

Maintenance or repair of a bridge or a culvert is allowed when:

- Performed by or at the direction of a government agency in accordance with regional road maintenance guidelines. These guidelines are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>;
- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers, and

- When the maintenance or the replacement of bridges or culverts involves waters used by salmonids the work is in compliance with ditch standards in a Public Rule and the maintenance of culverts is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert and does not involve the excavation of a new sediment trap adjacent to the inlet. The King County Public Rule is available online at: [http://www.metrokc.gov/ddes/pub\\_rule/#rules](http://www.metrokc.gov/ddes/pub_rule/#rules) (Chapter 21A.24 Sensitive Areas: Maintenance of Ditches Used by Salmonids).

Replacement of a bridge or culvert is allowed when:

- Performed by or at the direction of a government agency in accordance with regional road maintenance guidelines. These guidelines are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.
- The replacement of a bridge or culvert is made fish passable in accordance with the most recent Washington State Department of Fish and Wildlife manuals or with the National Marine and Fisheries Services guidelines for federally listed salmonid species; the document Washington State Fish and Wildlife Service “Design of Fish Passage at Culverts” is available at: <http://wdfw.wa.gov/hab/engineer/cm>. The National Marine and Fisheries Services guidelines for federally listed salmonid species is available at: <http://pacific.fws.gov/jobs/orojitw/standard/fish-std.htm>.
- The site must be restored with appropriate native vegetation.

Expansion of a bridge or culvert is allowed if it is necessary to bring the bridge or culvert up to current standards; and

- There is no other feasible alternative solution available with less impact on the aquatic area and its buffer, and
- The bridge or culvert must be located to the maximum extent practical to minimize impacts to the aquatic area and its buffer.

## Utilities and other infrastructure

New utility corridors or utility facilities are allowed if they are located within an existing roadway and are consistent with the regional road maintenance guidelines. These guidelines are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

New utilities and other infrastructure are limited to construction of pipelines, cables, wires and support structures of utility facilities within utility corridors. The following requirements must be met:

- New pipelines, cables, wires and support structures are allowed only when there is no alternative location with less adverse impact on the critical area and critical area buffer;
- New utility corridors must meet all of the following requirements to the maximum extent practical;
  1. do not locate over habitat used for salmonid rearing or spawning or by a species listed as endangered or threatened by the state or federal government unless the department determines that there is no other feasible crossing site. A list of species that are endangered or threatened is available at: <http://wdfw.wa.gov/wlm/diversty/soc/concern.htm>,
  2. do not locate a new utility corridor in an aquatic area if the mean annual flow rate is equal to or greater than 20 cubic feet per second, and
  3. paralleling the channel or following a down-valley route near the channel should be avoided.
- To the maximum extent practical, new utility corridors must be located as follows;
  1. minimize the width of the utility corridor;
  2. minimize the removal of trees greater than 12 inches diameter at breast height; and
  3. provide additional, contiguous and undisturbed critical area buffer, equal in area to the disturbed critical area buffer area including any allowed maintenance roads.
- To the maximum extent practical, access for maintenance of utility corridors must be at limited access points into the aquatic area buffer rather than by a parallel maintenance road. If a parallel maintenance road is necessary, the following standards must be met:
  1. minimize the width of the maintenance road to the maximum extent practical and in no event can it be greater than 15 feet; and
  2. locate the maintenance road contiguous to the utility corridor on the side of the utility corridor farthest from the critical area.
- New utility corridors or utility facilities must not change or diminish the overall aquatic area hydrology or flood storage capacity.
- Construction must occur during approved periods for in stream work. This period is usually from about June 15 to September 30, but work at other times can sometimes be approved on a site-by-site basis. The timing is usually specified in the HPA and in DDES permit conditions.
- The utility corridor must serve multiple purposes and properties to the maximum extent practical.
- Bridges or other construction techniques that do not disturb the critical areas must be used to the maximum extent practical.
- Bored, drilled or other trenchless crossings of the aquatic area or buffer must be laterally constructed at least 4 feet below the maximum depth of scour for the base flood.

- Bridge piers or abutments for bridge crossing must not be placed within the FEMA floodway or the ordinary high water mark.
- Open trenching may only be used during low flow periods and only within aquatic areas when they are dry. The department may approve open trenching of Type S or F aquatic areas only if there is no feasible alternative and equivalent or greater environmental protection can be achieved.
- Minor communication facilities may collocate on existing utility facilities if:
  1. no new transmission support structure is required; and
  2. equipment cabinets are located on the transmission support structure.

Maintenance, repair or replacement is allowed for private individual utility service connections on site or to public utilities if the disturbed area is not expanded and no hazardous substances, pesticides or fertilizers are applied.

## **Wells and on-site sewage disposal systems**

Maintenance or repair of existing wells is allowed if the disturbed area is not expanded, clearing is limited to the maximum extent practical and no hazardous substances, pesticides or fertilizers are applied.

Maintenance or repair of onsite sewage disposal systems is allowed.

## **Surface water systems**

Construction of new surface water conveyance systems is allowed if conveying the surface water into the wetland buffer and discharging into the wetland buffer or at the wetland edge has less adverse impact upon the wetland or wetland buffer than if the surface water was discharged at the buffer's edge and allowed to naturally drain through the buffer.

Maintenance, repair or replacement of existing surface water conveyance systems are allowed if:

- Performed by or at the direction of a government agency in accordance with the regional road maintenance guidelines. These guidelines are available online at <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>;
- If they are located within an existing roadway and are consistent with the regional road maintenance guidelines; and
- Constructed only with vegetation.

Construction of new surface water flow control or surface water quality treatment facilities are allowed if they are located within an existing roadway and are consistent with the regional road maintenance guidelines. These guidelines are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

Maintenance or repair of existing surface water flow control or surface water quality treatment facility is allowed if performed by or at the direction of a government agency in accordance with the regional road maintenance guidelines. These guidelines are available online at:

<http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

## **Flood protection facilities**

Construction of a new flood protection facility is allowed in a severe channel migration hazard area portion of an aquatic area buffer to prevent bank erosion only if consistent with the Washington State Integrated Stream Protection Guidelines and if bioengineering (See CAO Section 11) techniques are used to the maximum extent practical, unless the applicant can demonstrate that other methods provide equivalent structural stabilization and environmental function. The Washington State Integrated Stream Protection Guidelines are available online at:

<http://dnr.metrokc.gov/wlr/biostabl/>.

New flood protection facilities are only allowed in a severe channel migration hazard area to protect the following:

- Public roadways;
- Sole access routes that were in existence before February 16, 1995; or
- New primary dwelling units, accessory dwelling units or accessory living quarters and residential accessory structures located outside the severe channel migration hazard area if:
  1. the site is adjacent to or abutted by properties on both sides containing buildings or sole access routes protected by legal bank stabilization in existence before February 16, 1995. The buildings, sole access routes or bank stabilization must be located no more than 600 feet apart as measures parallel to the migrating channel; and
  2. the new primary dwelling units, accessory dwelling units, accessory living quarters or residential accessory structures are located no closer to the aquatic area than similar structures on abutting adjacent properties.

Maintenance, repair or replacement of lawfully established flood protection facilities is allowed if:

- Maintained by a public agency;
- The height of the facility is not increased;
- The linear length of the affected edge of the facility is not increased;
- The footprint of the facility is not expanded waterward;

- If consistent with the King County's Guidelines for Bank Stabilization Projects and if bioengineering (See CAO Section 11) techniques are used to the maximum extent practical; and
- The site is restored with appropriate native vegetation.

## **Instream structures**

New instream structures (See CAO Section 68) or instream work is allowed if performed by or at the direction of a government agency in accordance with the regional road maintenance guidelines, which are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

Existing instream structures may be maintained or repaired.

## **Recreation areas**

Construction of a new trail is not allowed in a wildlife habitat conservation area. Otherwise, construction of a new trail is allowed as far landward as feasible in the buffer if:

- The trail surface is not made of impervious material except that public multipurpose trails may be made of impervious materials if they meet all the requirements in K.C.C. chapter 9.12; and
- To the maximum extent practical, buffers are expanded equal to the width of the trail corridor including disturbed area.

Maintenance of outdoor public park facilities, trails and publicly improved recreation areas is allowed only if the maintenance:

- Does not involve the use of herbicides or other hazardous substances except for the removal of noxious weeds or invasive vegetation;
- When salmonids are present, the maintenance must be in compliance with the King County Public Rule: Maintenance of Agricultural Ditches and Streams Used by Salmonids. This Public Rule is available online at: <http://www.metrokc.gov/ddes/pub%5Frule/acrobat/21a-24AgDitch01.pdf>; and
- Does not involve the expansion of any roadway, lawn, landscaping, ditch, culvert, engineered slope or other improved area being maintained.

## **Habitat and science projects**

Habitat restoration or enhancement projects are limited to:

- Those sponsored by a public agency that has natural resource management as a primary function or by a federally recognized tribe;

- Habitat restoration or enhancement projects prepared by a qualified biologist; or
- Conducted in accordance with an approved Forest or Farm Management Plan or Rural Stewardship Plan.

Scientific sampling for salmonids is allowed if done in accordance with a scientific sampling permit issued by Washington State Department of Fish and Wildlife and where applicable, an incidental take permit issued under Section 10 of the Endangered Species Act. Contact: <https://fortress.wa.gov/dfw/scp/scp/index.jsp>.

Drilling and testing for critical areas reports is allowed for limited clearing and grading needed to prepare a Critical Areas Report. If associated spoils are contained on site (i.e. in a manner that the spoils will not mobilize or erode), the following are allowed:

- Data collection and research if carried out by non-mechanical or hand-held equipment to the maximum extent practical;
- Survey monument placement;
- Site exploration and gage installation if performed in accordance with state-approved sampling protocols and accomplished to the maximum extent practical by hand-held equipment; and
- Similar work associated with an incidental take permit issued under Section 10 or consultation under Section 7 of the Endangered Species Act.

## **Agriculture Activities**

Horticulture activities, including tilling, disking, planting, seeding, harvesting, preparing soil, rotating crops and related activities, and grazing of livestock are allowed if these activities have been in existence since January 1, 2005, and there is no expansion into the critical area or critical area buffer. "Continuous existence" includes cyclical operations and managed periods of soil restoration, enhancement or other fallow states associated with these horticultural and agricultural activities.

The expansion of existing or new agricultural activities is allowed where:

- The site is predominately involved in the practice of agriculture;
- There is no expansion into an area that has been cleared under I, II, III, IV -S Forest Practice Permit; or
- Is more than 10,000 square feet with tree cover at a uniform density of more than 90 trees per acre and with the predominant mainstem diameter of the trees at least 4 inches in diameter at breast height, not including areas that are actively managed as agricultural crops for pulpwood, Christmas trees or ornamental nursery stock;
- The activities are in compliance with an approved Farm Management Plan (See CAO Section 138); and
- All best management practices associated with the activities specified in the Farm management plan are installed and maintained.

## **Livestock manure storage facilities**

Construction or maintenance of livestock manure storage facilities are allowed under the same conditions above for horticultural activities, but are only allowed in grazed or tilled wet meadows or their buffers if:

- The facilities are designed to the standards of an approved Farm Management Plan (See CAO Section 132) or an approved Livestock Management Plan in accordance with K.C.C. chapter 21A.30;
- There is no feasible alternative location available on the site; and
- The facilities are located close to the outside edge of the aquatic area buffer to the maximum extent practical.

## **Livestock flood sanctuaries**

Construction or maintenance of livestock flood sanctuaries is allowed.

## **Agricultural drainage**

Construction of agricultural drainage is allowed if in compliance with an approved Farm Management Plan (See CAO Section 138) and all best management practices associated with the activities specified in the Farm Management Plan are installed and maintained.

Maintenance of agricultural drainage is allowed if these activities have been in existence since January 1, 2005, and there is no expansion into the critical area or critical area buffer. "Continuous existence" includes cyclical operations and managed periods of soil restoration, enhancement or other fallow states associated with these horticultural and agricultural activities. Maintenance of agricultural drainage is allowed if:

- The site is predominately involved in the practice of agriculture;
- There is no expansion into an area that has been cleared under I, II, III, IV -S or Conversion IV -G Forest Practice Permits or where there is more than 10,000 square feet with tree cover at a uniform density of more than 90 trees per acre and with the predominant mainstem diameter of the trees at least 4 inches in diameter at breast height, not including areas that are actively managed as agricultural crops for pulpwood, Christmas trees or ornamental nursery stock;
- The activities are in compliance with an approved Farm Management Plan (See CAO Section 138); and
- All best management practices associated with the activities specified in the Farm Management Plan are installed and maintained.

Maintenance of an agricultural drainage that is used by salmonids is allowed if it is in compliance with an approved farm plan.

## **Farm ponds, fish ponds, livestock watering ponds**

Construction or maintenance of farm ponds, fish ponds, or livestock watering ponds are allowed if these activities have been in existence since January 1, 2005, and there is no expansion into the critical area or critical area buffer. "Continuous existence" includes cyclical operations and managed periods of soil restoration, enhancement or other fallow states associated with these horticultural and agricultural activities.

New farm ponds, fish ponds, or livestock watering ponds or expansion of existing farm ponds, fish ponds, or livestock watering ponds are allowed if:

- The site is predominately involved in the practice of agriculture;
- There is no expansion into an area that has been cleared under I, II, III, IV -S or Conversion IV -G Forest Practice Permits or where there is more than

10,000 square feet with tree cover at a uniform density of more than 90 trees per acre and with the predominant mainstem diameter of the trees at least 4 inches in diameter at breast height, not including areas that are actively managed as agricultural crops for pulpwood, Christmas trees or ornamental nursery stock;

- The activities are in compliance with an approved Farm Management Plan (See CAO Section 138); and
- All best management practices associated with the activities specified in the Farm Management Plan are installed and maintained.

## **Cemetery graves**

Excavation of cemetery graves in an established and approved cemetery is allowed. Maintenance of cemetery graves is allowed, whether in an established and approved cemetery or not.

## **Lawns, landscaping and gardening**

Maintenance of lawns, landscaping and gardening for personal consumption is allowed within existing landscaped areas or other previously disturbed areas.

## **Golf courses**

Maintenance of golf courses is allowed when not performed under the direction of a government agency only if:

- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers; and
- When the maintenance or the replacement of bridges or culverts involves waters used by salmonids the work is in compliance with ditch standards in a Public Rule and the maintenance of culverts is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert and does not involve the excavation of a new sediment trap adjacent to the inlet. The King County Public Rule is available online at: [http://www.metrokc.gov/ddes/pub\\_rule/#rules](http://www.metrokc.gov/ddes/pub_rule/#rules) (Chapter 21A.24 Sensitive Areas: Maintenance of Ditches Used by Salmonids).

## Part Two – Critical Areas

# Aquatic Areas

Aquatic areas are defined as any nonwetland water feature including all shorelines of the state, rivers, streams, marine waters, inland bodies of open water including lakes and ponds, reservoirs and conveyance systems and impoundments of these features if any portion of the feature is formed from a stream or wetland and if any stream or wetland contributing flows is not created solely as a consequence of storm water pond construction. "Aquatic area" does not include water features that are entirely artificially collected or conveyed storm or wastewater systems or entirely artificial channels, ponds, pools or other similar constructed water features.

## Water types

*Reference CAO Section 192*

### Type S

Type S waters include all aquatic areas inventoried as "shorelines of the state" under King County's Shoreline Master Program, K.C.C. Title 25, in accordance with chapter 90.58 RCW, including segments of streams where the mean annual flow is more than 20 cubic feet per second, marine shorelines and lakes 20 acres in size or greater.

Examples include: Puget Sound, Snoqualmie River, Ames Lake, Issaquah Creek.

### Type F

Type F waters include all segments of aquatic areas that are not Type S waters and that contain fish or fish habitat<sup>1</sup>, including waters diverted for use by a federal, state or tribal fish hatchery from the point of diversion for 1,500 feet or the entire tributary if the tributary is highly significant for protection of downstream water quality.

Examples include: Tuck Creek, Mill Creek, Rock Creek, all lakes and ponds smaller than 20 acres that contain fish or fish habitat.

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<sup>1</sup> Salmonid use can be determined by using the criteria in the Public Rule: Presumption and Rebuttal of Presumption (the public rule will be updated). The CAO has additional criteria that the department can use to determine when an area upstream of a legal human-made barrier is not fish habitat (See CAO Section 192C).

## **Type N**

Type N waters include all segments of aquatic areas that are not Type S or F waters and that are physically connected to Type S or F waters by an above-ground channel<sup>2</sup> system, stream or wetland.

Examples include: the steep upper reaches (often seasonal) of other wetlands or fish bearing streams.

## **Type O**

Type O waters include all segments of aquatic areas that are not Type S, F or N waters and that are not physically connected to Type S, F or N waters by an above-ground channel system, stream or wetland.

Examples include: springs from hillsides that then infiltrate with no known surface connection, ephemeral streams with no fish-bearing potential or associated wetlands, an isolated pond or closed depression that dries out or are too acidic or too shallow for fish to live.

## **Buffers**

*Reference CAO Section 193*

Riparian corridors provide a wide range of highly valuable functions and are essential for sustaining wild fish populations. The most common way to protect these areas is with buffers. A stream buffer is a designated area contiguous to and intended to protect and be an integral part of a stream. Buffers are generally upland areas of vegetation that protect the ecological structure and riparian function of streams from indirect impacts and from the adverse impacts of an adjacent land use. Ecological structure refers to the type, size, age of vegetation, and habitat diversity. The ecological function assessment would evaluate which function or functions the buffer or aquatic area provide and which functions would be lost or compromised from the impact. Not all buffers perform all functions and they provide functions to varying degrees. There are several functional assessment methods that have been developed for the Pacific Northwest.

Stream buffers are measured horizontally from the edge of the ordinary high water mark (OHWM) or top of the stream bank if the OHWM cannot be determined.

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<sup>2</sup> An above ground channel is considered to be present if the 100-year floodplains of both contributing and receiving waters are connected. The 100-year floodplain is determined by conducting a floodplain analysis using best available data from FEMA studies and adopted FEMA floodplain maps.

In situations where the aquatic area is located within a mapped severe channel migration hazard area, the aquatic area buffer width will be the greater of the two buffers (i.e., either the outer edge of the aquatic area or the outer edge of the severe channel migration area). If the aquatic area buffer includes a steep slope or a landslide hazard, then the aquatic buffer width is the greater of the two or 25 feet from the top of the hazard area.

The required buffer setback area is determined by one or more of the following:

- The water type;
- The location of the aquatic area inside or outside of the Urban Growth Area established by the King County Comprehensive Plan;
- The Basin or Shoreline Designation Map (found in Appendix A of the CAO); or
- Location in the Bear Creek drainage basin.

## Required Buffers

**Table 1. Required buffer widths for aquatic areas located within the Urban Growth Area**

| Water Type | Required Buffer Width | Required Buffer Width (designated “high” <sup>3</sup> ) |
|------------|-----------------------|---|
| Type S     | 115 feet              | 165 feet  |
| Type F     | 115 feet              | 165 feet  |
| Type N     | 65 feet               | 65 feet   |
| Type O     | 25 feet               | 25 feet   |

**Table 2. Required buffer widths for aquatic areas located outside the Urban Growth Area**

| Water Type | Required Buffer Width | Required Buffer Width (Bearcreek <sup>4</sup> ) |
|------------|-----------------------|---|
| Type S     | 165 feet              | 165 feet  |
| Type F     | 165 feet              | 165 feet  |
| Type N     | 65 feet               | 100 feet  |
| Type O     | 25 feet               | 25 feet   |

<sup>3</sup> If an aquatic area is located in a basin or shoreline designated as “high” on the Basin & Shoreline Map, the required buffers for Type S and F water types are increased (see CAO Attachment A).

<sup>4</sup> The required buffer for Type N aquatic areas located within the Bear Creek drainage basin.

## **Buffer width modification**

The department may approve a modification of the minimum required buffer in the following ways:

### **1. Buffer averaging**

The buffer width may be reduced if the ecological structure and function of the reduced buffer is equivalent to or greater than the structure and function of the buffer before averaging and meets all of the following:

- the total area of the buffer is not reduced;
- the buffer area is contiguous with the existing buffer; and
- averaging does not result in the reduction of the minimum buffer for the buffer area waterward of the top of the associated steep slope or for a severe channel migration hazard area.

Buffer width averaging criteria and implementation are detailed in the Public Rule: Buffer Width Averaging for Stream and Wetland Buffers. (The Public Rule is in the process of being updated and will include methods for determining buffer function).

### **2. Buffer cannot provide certain functions**

The buffer may be reduced if it cannot provide certain functions because of the soils, geology, or topography, providing that the department establishes buffers which protect the remaining ecological functions that the buffer can provide.

### **3. Reduction through a Rural Stewardship Plan**

This reduction is applicable to sites that are zoned RA and have an approved Rural Stewardship Plan. For details on the Rural Stewardship Plan, refer to CAO Section 139.

### **4. Roadway transects buffer**

Where a legally established road transects a buffer, the minimum required buffer width may be reduced to the edge of the roadway if the buffer on the other side of the roadway provides insignificant biological or hydrological buffer functions in relation to the portion of the buffer adjacent to the aquatic area.

A legally established roadway is defined as "roadway: the maintained areas cleared and graded within a road right-of-way or railroad prism". For a road right-of-way, "roadway" includes all maintained and traveled areas, shoulders,

pathways, sidewalks, ditches and cut and fill slopes. For a railroad prism, "roadway" includes the maintained railbed, shoulders, and cut and fill slopes. "Roadway" is equivalent to the "existing, maintained, improved road right-of-way or railroad prism" as defined in the regional road maintenance guidelines.

## **5. Aquatic Area created through a non-development proposal**

If the aquatic area was created as a result of a non-development enhancement or restoration project and is not mitigation for a development proposal or alteration the buffer may be reduced.

## **Building and setback lines**

*Reference CAO Section 157*

A building setback line (BSBL) of 15 feet is required between the edge of the aquatic area buffer and any building or structure. Landscaping, uncovered decks, building overhangs that do not exceed more than 18 inches into the setback area, driveways, patios, and drainfields, and some utility connections are allowed within the BSBL.

## **Permanent survey marking, signs, and fencing**

*Reference CAO Section 154*

### **Aquatic area in tract**

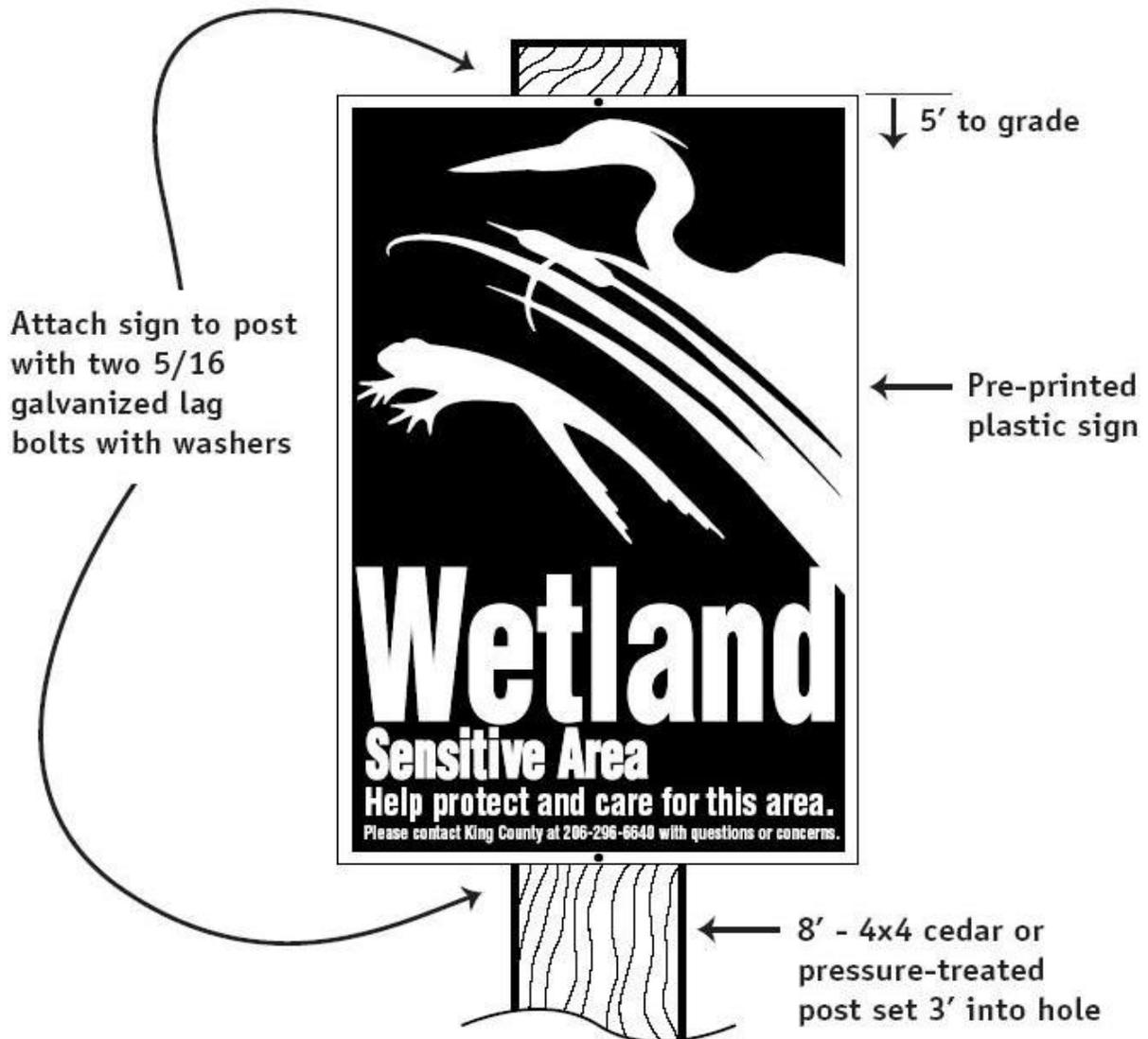
The development proposal must include permanent survey stakes delineating the boundary of the aquatic area tract and adjoining property. Wetland/Stream signs must be placed at the edge of the tract.

### **Aquatic area not in tract**

Wetland/Stream signs and fences may be required by the department.

### **Sign and fence requirements**

The signs must be placed at the edge of the required buffer, between the buffer and the 15-foot BSBL. The spacing of the signs will be determined during the review of the development proposal. Generally signs are spaced every 50 feet to 150 feet and stationed in a prominent location (i.e., at the closest point to the proposed development). Signs may be attached to a post or fence. Stream Sensitive Areas Boundary signs are available from the King County Department of Development and Environmental Services for \$2.50.



### King County wetland/stream sign installation detail

The fence should be permanent, a minimum 4-feet high, and be wildlife passable. Wildlife should be able to get into and out of the mitigation site through the fence. Small animals should be able to travel under the fence and large mammals should be able to jump over the fence. Often split rail or smooth wire fences are used.

### Notice of critical areas

*Reference CAO Section 155*

The applicant/owner of any development proposal that contains an aquatic area, aquatic area buffer, or aquatic areas mitigation, will be required to file a Notice of Critical Areas. The paperwork for the Notice of Critical Areas will be approved and

prepared by the department. The applicant/owner will be responsible for filing the Notice of Critical Areas with King County Records and Elections.

## **Critical area tracts**

*Reference CAO Section 156*

The applicant will use a recorded critical area tract to delineate and protect aquatic areas and buffers in development proposals for subdivisions, short subdivisions, or binding site plans.

## **Critical area review**

*Reference CAO Section 146*

Prior to any clearing, grading, or site preparation for a development proposal permit application, or any other reason to alter a site, a critical area review must be conducted to determine whether there is an aquatic area or buffer located on the site or mapped or identified within 300-feet of the development site. As part of the critical area review, the department will review critical area reports to determine that all of the critical areas have been accurately identified, determine if the critical area or its buffer will be altered due to the development proposal and determine if the development proposal is consistent with this chapter. If impacts are proposed, the review will determine if the proposal has avoided impacts to the critical area and to insure that the mitigation measures and monitoring are consistent with the goals, objectives, and requirements of this chapter.

## **Report requirements**

*Reference CAO Section 147*

The applicant for the development proposal is required to submit a Critical Areas Report to the department for review. The department will determine whether a Level I, II, III or IV Critical Areas Report is required.

A Level I report is required for development proposals requiring a critical area review and includes the following basic information:

- Valid Critical Areas Designation. The aquatic area will be identified by an expert and the results from the study will designate the aquatic area regarding the presence, type, and location on the property. The applicant may choose to hire a consultant or a King County DDES Environmental Scientist to conduct the study. Additional information and application form for the designation process can be found at: <http://www.metrokc.gov/ddes> or by calling DDES at 206-296-6600;

- If applicable, a critical area review performed for the same site or portion of the site for another permit approval process in the prior five years;
- If applicable, an approved Farm Management Plan approved after January 1, 1993 and consistent with CAO Section 138, a Rural Stewardship Plan consistent with CAO Section 139, an approved Forest Stewardship Plan effective date of this section; and
- A basic checklist determined by the department for each critical area on or adjacent to the site and buffer including topographic features, general vegetation types and potential habitat and breeding sites, and any information related to the classification, type or category of the critical area.

Level II, III and IV four reports are required when additional information beyond what is described above is needed to determine potential impacts or risks, functions, and appropriate mitigation. Refer to CAO Section 147C.

## **Avoiding impacts to critical areas**

*Reference CAO Section 149*

If the development is proposing impacts or alterations to the aquatic area or buffer then the applicant must try to avoid the impact to the extent possible by applying the sequential measures described in this section. Often referred to as mitigation sequencing, there are seven mitigation measures that are listed in order of priority. The applicant will be required to document in the critical area report that the appropriate measure was applied. For instance, the first measure is to avoid the impact by not taking the action. Avoidance includes redesigning the proposed development to avoid all impacts to the aquatic area and buffer. If the site conditions do not allow for redesigning the proposed development, then the second mitigation measure, minimizing the impact would be applied. Section 149 lists the avoidance measures.

## **Mitigation and monitoring**

*Reference CAO Section 150, 188*

Mitigation is required to compensate for impacts to the aquatic area or aquatic area buffer. Prior to determining the appropriate mitigation, a Critical Areas Report has been verified and approved by the department. In addition, the sequential mitigation measures regarding avoidance of the impact have been applied and documented in the report.

Specific mitigation requirements are discussed later in this chapter. Once the mitigation plan has been approved by the department the applicant may implement the plan. When the plan is installed, the applicant will contact the department so that an inspection can be conducted. The applicant will also have to provide the

department reasonable access to the property for future monitoring inspections during the monitoring period.

The purpose of the monitoring plan is to monitor the performance of the mitigation plan and includes; compliance with this title, provides a contingency plan in the event of a failure of mitigation or of unseen impacts. The monitoring schedule may extend throughout the impact of the activity. The duration, frequency, and methods of monitoring depend on the goals and objectives and performance standards for the project. In general, mitigation projects will be monitored for at least three to five years.

There are several sources of information on how to prepare a mitigation plan and monitoring plan.

For single-family projects which involve minor encroachments into the buffer:

King County DDES "Restoration & Enhancement Guidelines of Sensitive Areas in King County". Available on the King County Web site:  
<http://metrokc.gov/ddes>.

For projects that propose a stream crossing or work within the ordinary high water mark:

- King County Department of Transportation Roads Services Division "Culvert Fish Passage Construction Guidelines for Maintenance Crews October 25, 2004". Available by calling 206-296-8100.
- Washington Department of Fish and Wildlife's Manual" 2003 "Design of Road Culverts for Fish Passage." Available at  
<http://wdfw.wa.gov/hab/engineer/cm/>.

For stream restoration methods such as placing LWD placement, etc:

Washington State Department, U.S. fish and Wildlife Service, and Washington Department of fish and Wildlife "Stream Habitat Restoration Guidelines 2004) available at: <http://wdfw.wa.gov/hab/ahg/shrg/index.htm>

Any construction activity that will use, divert, obstruct, or change the bed or flow of state waters must obtain a Hydraulic Permit Approval (HPA). Contact <http://www.wdfw.wa.gov/hab/hpapage.htm>.

## **Offsite mitigation**

*Reference CAO Section 151*

The applicant should mitigate for impacts to aquatic areas and buffers on or contiguous to the site. If this is not possible, then the department may approve mitigation off the development site if the applicant:

- Can demonstrate that it is not practical to mitigate on the site or contiguous to the site; and
- The offsite mitigation will achieve equal or greater hydrological, water quality and wetland habitat features.

Priority will be given to locations that are within the same drainage subbasin and are mitigation banking sites, resource mitigation reserves, private mitigation sites, or public mitigation sites authorized by this chapter. The department may require documentation that the mitigation site has been permanently preserved from future development.

The department is in the process of developing a list of sites available for offsite mitigation projects, a fee in-lieu of program and resource mitigation reserve .

## **Specific mitigation requirements**

*Reference CAO Section 197*

This section describes how to determine the mitigation for the adverse impacts from an alteration to the aquatic area or aquatic area buffer. The mitigation measures must achieve equivalent or greater functions including but not limited to:

- Habitat complexity, connectivity, and other biological functions;
- Seasonal hydrological dynamics, water storage capacity and water quality; and
- Geomorphic and habitat process and functions .

To the maximum extent practical<sup>5</sup>, permanent alterations that require restoration or enhancement must consider the following design factors as applicable to the function being mitigated:

- The natural channel or shoreline reach dimensions including its depth, width, length, and gradient;
- The horizontal alignment and sinuosity;
- The channel bed, sea bed, or lake bottom with identical or similar substrate and similar erosion and sediment transport dynamics;
- Bank and buffer configuration and erosion and sedimentation rates; and
- Similar vegetation species diversity, size, and densities in the channel, sea bed, or lake bottom and on the riparian bank or buffer .

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<sup>5</sup> Maximum extent practical is defined as the highest level of effectiveness that can be achieved through the use of best available science or technology .

Mitigation to compensate for adverse impacts shall meet the following standards:

- Not upstream of a barrier to fish passage;
- Is equal or greater in biological function; and
- To the maximum extent practical is located on the site of the alteration or within one-half mile of the site and in the same aquatic reach at a 1:1 ratio of area of mitigation to area of alteration; OR
- Is located in the same aquatic area<sup>6</sup> drainage subbasin or marine shoreline and attains the following ratios of area of functional mitigation to area of alteration:

|             |     |
|-------------|-----|
| Type S or F | 3:1 |
| Type N or O | 2:1 |

*Reference CAO Section 197 E*

## **Reducing mitigation ratios**

The department may reduce the mitigation ratios of this section to 2:1 for Type S or F aquatic areas and 1.5:1 for Type N and O aquatic areas if the applicant provides a scientifically rigorous mitigation monitoring program. Refer to CAO Section 197.E for the elements that need to be included in the report.

## **Allowed alterations to aquatic areas and buffers**

*Reference CAO Sections 137 (subsection D), 195*

The standards established in CAO Section 137 apply to all developments that are proposed within an aquatic area or its buffer. Alterations are allowed in the aquatic area and buffer if the alteration complies with the development standards, mitigation requirements, and other applicable requirements in this chapter. Refer to the table in CAO Section 137 that lists the allowed alteration (labeled as A) with the corresponding number (1-59) which refers to the alteration condition that applies.

Several general limitations have been added to the provisions listed in Section 137 regarding alterations within aquatic areas or their buffers (*CAO Section 195*). The additional standards include:

- Grading in buffers is only allowed from May 1 to October 1, provided that this period may be modified when the department determines it is necessary along marine shorelines to protect critical forage and salmonid migration.

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<sup>6</sup> A mitigation measure is in the same aquatic area reach if the length of aquatic area shoreline meets the criteria in CAO Section 197D.

- The moisture-holding capacity of the topsoil layer on all areas of the site not covered by impervious surfaces should be maintained by minimizing soil compaction or reestablishing natural soil structure and the capacity to infiltrate. Refer to the CAO Section 10 F and G of the Clearing and Grading Code.
- New structures within buffers should be sited to avoid the creation of future hazard trees and to minimize the impact on groundwater movement.
- To the maximum extent practical, the soil duff layer should not be disturbed, but if disturbed the soil should be redistributed to other areas of the project; a spatial connection should be provided between vegetation within and outside of the buffer to prevent creation of wind throw hazards; and hazard trees should be retained in the buffer and either topped or pushed over toward the aquatic area.

## **Allowed alterations**

The allowed alterations from Section 137 are summarized below.

### **Single detached dwelling unit**

Construction of single detached dwelling units is allowed within a buffer of a lake that is 20 acres or larger on a lot that was created before January 1, 2005, if:

- At least 75 percent of the lots abutting the shoreline of the lake or 75 percent of the lake frontage, whichever constitutes the most developable lake frontage, has existing density of four dwelling units per acre or more;
- The development proposal, including mitigation required by this chapter, will have the least adverse impact on the critical area;
- Existing native vegetation within the critical area buffer will remain undisturbed except as necessary to accommodate the development proposal and required building setbacks;
- Access is located to have the least adverse impact on the critical area and critical area buffer;
- The alteration is the minimum necessary to accommodate the development proposal and in no case in excess of a development footprint of 5,000 square feet;
- The alteration does not exceed the residential development setbacks required under K.C.C. chapter 25.04 and in no circumstances shall the alteration be allowed closer than:
  1. 25 feet of the ordinary high water mark of the lake shoreline designated urban under K.C.C. chapter 25.16,
  2. 50 feet of the ordinary high water mark of a lake shoreline designated rural under K.C.C. chapter 25.20 or conservancy under K.C.C. chapter 25.24, or
  3. 100 feet of the ordinary high water mark of a lake shoreline designated natural under K.C.C. chapter 25.28; and

- To the maximum extent practical, alterations are mitigated on the development proposal site by enhancing or restoring remaining critical area buffers.

### **Nonresidential structures**

Construction of nonresidential farm structures is allowed within grazed or tilled wet meadows or buffers of wetlands or aquatic areas where:

- The site is predominately used for the practice of agriculture;
- The structure is in compliance with an approved Farm Management Plan (*See CAO Section 138*);
- The structure is either:
  1. On or adjacent to existing nonresidential impervious surface areas, additional impervious surface area is not created waterward of existing impervious surface areas and the area was not used for crop production;
  2. Higher in elevation and no closer to the severe channel migration hazard area or aquatic area or aquatic area buffer than its existing position;
  3. Located away from existing impervious surface area that is determined to be the optimum site in the Farm Management Plan;
  4. Best management practices associated with the structure specified in the Farm Management Plan are installed and maintained; or
  5. Installation of fencing in accordance with K.C.C. chapter 21A.30 does not require the development of a Farm Management Plan if required best management practices are followed and the installation does not require clearing of critical areas or their buffers.

In the severe channel migration hazard area portion of an aquatic buffer only if:

- There is no feasible location on site;
- The structure is not used to house animals or store hazardous substances; and
- The total footprint of all accessory structures within the severe channel migration hazard area will not exceed the greater of 1,000 square feet within the severe channel migration hazard or two percent of the severe channel migration hazard area on site.

### **Existing structures**

Existing structures may be maintained or repaired.

Expansion or replacement of existing primary structures is allowed within a severe channel migration hazard area if:

- There is not an increase of the footprint of any existing structure;
- There is not a substantial improvement as defined in K.C.C. 21A.06.1270; and
- Expansion or replacement does not increase the footprint of a nonresidential structure.

Expansion or replacement of existing accessory structures is allowed if:

- Addition to the footprint will not make the total footprint of all existing structures more than 1,000 square feet; and
- There is not an expansion of the footprint towards any source of channel migration hazard unless the applicant demonstrates that the location is less subject to risk and has less impact on the critical area.

Expansion or replacement of existing primary structures is allowed only in grazed wet meadows or the buffer or building setback outside a severe channel migration hazard area if:

- The expansion or replacement does not increase the footprint of a nonresidential structure;
- The expansion or replacement does not increase the footprint of a dwelling unit by more than 1,000 square feet and the location of the expanded area has the least adverse impact on the critical area;
- The structure was not established as the result of a variance, buffer averaging or reasonable use exception, and
- To the maximum extent practical, the expansion or replacement is not located closer to the critical area or within the relic channel that can be connected to an aquatic area.

Existing structures are allowed upon another portion of an existing impervious surface outside a severe channel migration hazard area if:

- The structure is not located closer to the critical area; and
- The existing impervious surface within the critical area or buffer is not expanded.

## **Remodeling**

Interior remodeling is allowed.

## **Docks or piers**

Construction of new docks or piers is limited to seasonal floating docks or piers in a Category II, III, IV wetland or its buffer or along a lake shoreline or its buffer where:

- The existing and zoned density of all properties abutting the entire lake shoreline averages three dwelling units per acre or more;
- At least 75 percent of the lots abutting the shoreline or 75 percent of the lake frontage, whichever constitutes the most lake frontage, has been developed with dwelling units;
- There is not any significant vegetation where the alteration is proposed and the loss of vegetation was not the result of any violation of law;
- The wetland or lake shoreline is not a salmonid spawning area;
- Hazardous substances or toxic material are not used;
- Allowed on Type N or O aquatic areas if hazardous substances or toxic materials are not used; or
- Allowed on Type S or F aquatic areas outside of the severe channel migration hazard area and if in compliance with K.C.C. Title 25 (Shorelines).

Maintenance, repair or replacement of docks or piers is allowed if:

- Allowed on Type N or O aquatic areas if hazardous substances or toxic materials are not used; or
- Allowed on Type S or F aquatic areas outside of the severe channel migration hazard area and if in compliance with K.C.C. Title 25 (Shorelines)

## Grading

The following are allowed in the severe channel migration hazard area if:

- Conducted more than 165 feet from the ordinary high water mark (See definition in CAO Section 82) in the rural area and 115 feet from the ordinary high water mark in the urban area;
- Grading up to 50 cubic yards on lots less than five acres; and
- Clearing up to 1,000 square feet or up to a cumulative 35 percent of the severe channel migration hazard area.

Construction of new slope stabilization is allowed only where erosion or landsliding threatens a structure, utility facility, roadway, drive way, public trails, aquatic area or wetland if to the maximum extent practical, stabilization work must not disturb the slope and its vegetation cover or any associated critical areas.

Maintenance of existing slope stabilization is allowed when performed by or at the direction of a government agency in accordance with regional road maintenance guidelines. These guidelines are available online at <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

Maintenance of existing slope stabilization is allowed when not performed under the direction of a government agency only if:

- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers; and
- When the maintenance or the replacement of bridges or culverts involves waters used by salmonids, the work is in compliance with ditch standards in a Public Rule and the maintenance of culverts is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert and does not involve the excavation of a new sediment trap adjacent to the inlet. The King County Public Rule is available on line at: [http://www.metrokc.gov/ddes/pub\\_rule/#rules](http://www.metrokc.gov/ddes/pub_rule/#rules) (Chapter 21A.24 Sensitive Areas: Maintenance of Ditches Used by Salmonids).

## Clearing

The following are allowed in the severe channel migration hazard area if:

- Conducted more than 165 feet from the ordinary high water mark (*See definition in CAO Section 82*) in the rural area and 115 feet from the ordinary high water mark in the urban area;
- Grading up to 50 cubic yards on lots less than five acres; and
- Clearing up to 1,000 square feet or up to a cumulative 35 percent of the severe channel migration hazard area.

Clearing is allowed for the removal of hazard trees (*See CAO Section 107*) and vegetation as necessary for surveying or testing purposes. Clearing is also allowed for harvesting of plants and plant materials, such as plugs, stakes, seeds or fruits, for restoration and enhancement projects.

Cutting of firewood is:

- Not allowed in a wildlife habitat conservation area;
- Allowed within a critical area for personal use with an approved Forest Management Plan or Rural Stewardship Plan; and
- Allowed within a wildlife network with an approved management plan under K.C.C.21A.14.270 as recodified by this ordinance.

Removal of vegetation for fire safety is allowed in buffers if in accordance with best management practices approved by the King County Fire Marshal.

Removal of noxious weeds or invasive vegetation is allowed if:

- In accordance with an approved Forest Management Plan, farm plan, or Rural Stewardship Plan; or

- Without an approved Forest Management Plan or Rural Stewardship Plan if:
  1. Removal is undertaken with hand labor, including hand-held mechanical tools, unless the King County Noxious Weed Control Board otherwise prescribes the use of riding mowers, light mechanical cultivating equipment or biological control methods. Call 206-296-0290 or visit the King County Noxious Weed Control Web site at: <http://dnr.metrokc.gov/wlr/lands/weeds/index.htm>. The area of noxious weed or invasive vegetation removal must be stabilized to avoid re-growth or regeneration and the area must be re-vegetated with native or non-invasive vegetation and stabilized against erosion; and
  2. Herbicide use is in accordance with federal and state law.

## Forest practices

Non-Conversion Class IV-G Forest Practice is allowed if conducted in accordance with chapter 76.09 RCW and Title 222 WAC and a Forest Management Plan is approved for the site by the King County Department of Natural Resources and Parks. The property owner must also provide a notice of intent in accordance with RCW 76.09.060 that the site will not be converted to non-forestry use within six years. Additional information on Forest Management Plans is available at:

<http://dnr.metrokc.gov/wlr/lands/forestry/index.htm>

Class I, II, III, IV-S forest practice is allowed.

## Roads

Construction of new roads, right-of way structure on unimproved right-of way is allowed if:

- There is no feasible location with less adverse impact on an aquatic area and its buffer;
- The road corridor is not located over habitat used for salmonid rearing or spawning or by any species listed as endangered or threatened by the state and federal government unless the department determines there are no other feasible crossing sites;
- The road corridor width is minimized to the maximum extent practical;
- The construction occurs during approved periods for instream work; and
- The corridor will not change or diminish the overall aquatic area flow peaks, duration or volume or the flood storage capacity.

Maintenance of a public road right-of-way structure is allowed:

- When performed by or at the direction of a government agency in accordance with the regional road maintenance guidelines. These guidelines are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

Expansion beyond public road right-of-way structure is allowed when:

- There is no feasible location with less adverse impact on an aquatic area and its buffer;
- The road corridor is not located over habitat used for salmonid rearing or spawning or by any species listed as endangered or threatened by the state and federal government unless the department determines there are no other feasible crossing sites;
- The road corridor width is minimized to the maximum extent practical;
- The construction occurs during approved periods for instream work; and
- The corridor will not change or diminish the overall aquatic area flow peaks, duration or volume or the flood storage capacity.

Repair, replacement or modification within the roadway is allowed if:

- When performed by or at the direction of a government agency in accordance with the regional road maintenance guidelines. These guidelines are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

## **Driveways and private access roads**

Construction of a driveway or private access road is allowed if:

- An alternative access is not available;
- Impact to the critical area is minimized to the maximum extent practical including the use of walls to limit the amount of cut and fill necessary;
- The risk associated with landslide and erosion is minimized;
- Access is located where it is least subject to risk from channel migration; and
- Construction occurs during approved periods for instream work.

## **Farm field access drives**

Construction of farm field access drives is allowed with an approved Farm Management Plan. See CAO Section 138 relating to Farm Management Plans.

Maintenance of a driveway, private access road, or farm field access drive is allowed. When the maintenance is not performed under the direction of a government agency, the maintenance is allowed only if:

- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers, and
- When the maintenance or the replacement of bridges or culverts involves waters used by salmonids, the work is in compliance with ditch standards in a

Public Rule and the maintenance of culverts is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert and does not involve the excavation of a new sediment trap adjacent to the inlet. The King County Public Rule is available online at: [http://www.metrokc.gov/ddes/pub\\_rule/#rules](http://www.metrokc.gov/ddes/pub_rule/#rules) (Chapter 21A.24 Sensitive Areas: Maintenance of Ditches Used by Salmonids).

## Bridges or culverts

Maintenance or repair of a bridge or a culvert is allowed when:

- Performed by or at the direction of a government agency in accordance with regional road maintenance guidelines. These guidelines are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>;
- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers, and
- When the maintenance or the replacement of bridges or culverts involves waters used by salmonids, the work is in compliance with ditch standards in a Public Rule and the maintenance of culverts is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert and does not involve the excavation of a new sediment trap adjacent to the inlet. The King County Public Rule is available online at: [http://www.metrokc.gov/ddes/pub\\_rule/#rules](http://www.metrokc.gov/ddes/pub_rule/#rules) (Chapter 21A.24 Sensitive Areas: Maintenance of Ditches Used by Salmonids).

Replacement of a bridge or culvert is allowed when:

- Performed by or at the direction of a government agency in accordance with regional road maintenance guidelines. These guidelines are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.
- The replacement of a bridge or culvert is made fish passable in accordance with the most recent Washington State Department of Fish and Wildlife manuals or with the National Marine and Fisheries Services guidelines for federally listed salmonid species. The document Washington State Fish and Wildlife Service “Design of Fish Passage at Culverts” is available at: <http://wdfw.wa.gov/hab/engineer/cm>. The National Marine and Fisheries Services guidelines for federally listed salmonid species is available at: <http://pacific.fws.gov/jobs/orojitw/standard/fish-std.htm>.
- The site must be restored with appropriate native vegetation.

Expansion of a bridge or culvert is allowed if it is necessary to bring the bridge or culvert up to current standards; and

- There is no other feasible alternative solution available with less impact on the aquatic area and its buffer; and
- The bridge or culvert must be located to the maximum extent practical to minimize impacts to the aquatic area and its buffer.

## Utilities and other infrastructure

New utility corridors or utility facilities are allowed if they are located within an existing roadway and are consistent with the regional road maintenance guidelines. These guidelines are available online at:

<http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

New utilities and other infrastructure are limited to construction of pipelines, cables, wires and support structures of utility facilities within utility corridors. The following requirements must be met:

- New pipelines, cables, wires and support structures are allowed only when there is no alternative location with less adverse impact on the critical area and critical area buffer.
- New utility corridors must meet all of the following requirements to the maximum extent practical:
  1. do not locate over habitat used for salmonid rearing or spawning or by a species listed as endangered or threatened by the state or federal government unless the department determines that there is no other feasible crossing site. A list species that are endangered or threatened is available at: <http://wdfw.wa.gov/wlm/diversty/soc/concern.htm>.
  2. Do not locate a new utility corridor in an aquatic area if the mean annual flow rate is equal to or greater than 20 cubic feet per second.
  3. Paralleling the channel or following a down-valley route near the channel should be avoided.
- To the maximum extent practical, new utility corridors must be located as follows:
  1. minimize the width of the utility corridor;
  2. minimize the removal of trees greater than 12 inches diameter at breast height; and
  3. Provide additional, contiguous and undisturbed critical area buffer, equal in area to the disturbed critical area buffer area including any allowed maintenance roads.
- To the maximum extent practical, access for maintenance of utility corridors must be at limited access points into the aquatic area buffer rather than by a parallel maintenance road. If a parallel maintenance road is necessary, the following standards must be met:
  1. minimize the width of the maintenance road to the maximum extent practical and in no event can it be greater than 15 feet; and

2. locate the maintenance road contiguous to the utility corridor on the side of the utility corridor farthest from the critical area.
- New utility corridors or utility facilities must not change or diminish the overall aquatic area hydrology or flood storage capacity.
  - Construction must occur during approved periods for instream work. This period is usually from about June 15th to September 30th, but work at other times can sometimes be approved on a site-by site basis. The timing is usually specified in the HPA and in DDES permit conditions.
  - The utility corridor must serve multiple purposes and properties to the maximum extent practical.
  - Bridges or other construction techniques that do not disturb the critical areas must be used to the maximum extent practical.
  - Bored, drilled or other trenchless crossings of the aquatic area or buffer must be laterally constructed at least four feet below the maximum depth of scour for the base flood.
  - Bridge piers or abutments for bridge crossing must not be placed within the FEMA floodway or the ordinary high water mark.
  - Open trenching may only be used during low flow periods and only within aquatic areas when they are dry. The department may approve open trenching of Type S or F aquatic areas only if there is no feasible alternative and equivalent or greater environmental protection can be achieved.
  - Minor communication facilities may collocate on existing utility facilities if:
    1. no new transmission support structure is required; and
    2. equipment cabinets are located on the transmission support structure.

Maintenance, repair or replacement is allowed for private individual utility service connections on site or to public utilities if the disturbed area is not expanded and no hazardous substances, pesticides or fertilizers are applied.

## **Wells and onsite sewage disposal systems**

Maintenance or repair of existing wells and onsite sewage disposal systems is allowed if the disturbed area is not expanded, clearing is limited to the maximum extent practical and no hazardous substances, pesticides or fertilizers are applied.

## Surface water systems

Construction of new surface water conveyance systems, surface water flow control or surface water quality treatment facilities are allowed if they are within an existing roadway and are constructed to be consistent with the regional road maintenance guidelines. These guidelines are available online at <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>. If not within the roadway, only vegetation may be used to construct a new surface water conveyance system.

Maintenance, repair or replacement of existing surface water conveyance systems or surface water flow control or surface water quality treatment facilities is allowed if performed by or at the direction of a government agency in accordance with the regional road maintenance guidelines. These guidelines are available online at <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

Open, vegetated storm water management conveyance systems and outfall structures that simulate natural conditions may be maintained, repaired or replaced if:

- Fish habitat features necessary for feeding, cover and reproduction are included, when appropriate;
- The vegetation is maintained and added adjacent to all open channels and ponds, if necessary, to prevent erosion, filter out sediments or shade the water; and
- Bioengineering techniques are used to the maximum extent practical.

Closed, tight lined conveyance system and outfall structures may be maintained, repaired or replaced if:

- Necessary to avoid erosion of slopes; and
- Bioengineering techniques are used to the maximum extent practical.

## Flood protection facilities

Construction of a new flood protection facility is allowed in a severe channel migration hazard area portion of an aquatic area buffer to prevent bank erosion only if consistent with the Washington State Integrated Stream Protection Guidelines and if bioengineering (See CAO Section 11) techniques are used to the maximum extent practical, unless the applicant can demonstrate that other methods provide equivalent structural stabilization and environmental function. The Washington State Integrated Stream Protection Guidelines are available online at: <http://dnr.metrokc.gov/wlr/biostabl/>. New flood protection facilities are only allowed in a severe channel migration hazard area to protect the following:

- Public roadways;

- Sole access routes that were in existence before February 16, 1995; or
- New primary dwelling units, accessory dwelling units or accessory living quarters and residential accessory structures located outside the severe channel migration hazard area if:
  1. the site is adjacent to or abutted by properties on both sides containing buildings or sole access routes protected by legal bank stabilization in existence before February 16, 1995. The buildings, sole access routes or bank stabilization must be located no more than 600 feet apart as measures parallel to the migrating channel; and
  2. the new primary dwelling units, accessory dwelling units, accessory living quarters or residential accessory structures are located no closer to the aquatic area than similar structures on abutting adjacent properties.

Maintenance, repair or replacement of lawfully established flood protection facilities is allowed if:

- Maintained by a public agency;
- The height of the facility is not increased;
- The linear length of the affected edge of the facility is not increased;
- The footprint of the facility is not expanded waterward;
- If consistent with the King County's Guidelines for Bank Stabilization Projects and if bioengineering (*See CAO Section 11*) techniques are used to the maximum extent practical; and
- The site is restored with appropriate native vegetation.

## **Instream structures**

New instream structures (*See CAO Section 68*) or instream work is allowed if performed by or at the direction of a government agency in accordance with the regional road maintenance guidelines, which are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>.

If the aquatic area is a Type N or O, the new instream structure or work must be done in the least impacting way and at the least impacting time of the year. It must also be done in conformance with applicable best management practices and all the affected instream and buffer features restored. If the aquatic area is a Type S or F, the new instream structure or work must be included as part of a project to evaluate, restore or improve habitat, and must be sponsored or co-sponsored by a public agency that has natural resource management as a function or by a federally recognized tribe.

Existing instream structures may be maintained or repaired.

## Recreation areas

Construction of a new trail is not allowed in a wildlife habitat conservation area. Otherwise, a new trail is allowed as far landward as feasible in the buffer if:

- The trail surface is not made of impervious material except that public multipurpose trails may be made of impervious materials if they meet all the requirements in K.C.C. chapter 9.12; and
- To the maximum extent practical, buffers are expanded equal to the width of the trail corridor including disturbed area.

Maintenance of outdoor public park facilities, trails and publicly improved recreation areas is allowed only if the maintenance:

- Does not involve the use of herbicides or other hazardous substances except for the removal of noxious weeds or invasive vegetation;
- When salmonids are present, the maintenance must be in compliance with the King County Public Rule for *Maintenance of Agricultural Ditches and Streams Used by Salmonids*. This Public Rule is available online at: <http://www.metrokc.gov/ddes/pub%5Frule/acrobat/21a-24AgDitch01.pdf>; and
- Does not involve the expansion of any roadway, lawn, landscaping, ditch, culvert, engineered slope or other improved area being maintained.

## Habitat and science projects

Habitat restoration or enhancement projects are limited to:

- Those sponsored by a public agency that has natural resource management as a primary function or by a federally recognized tribe.
- Habitat restoration or enhancement projects prepared by a qualified biologist; or
- Conducted in accordance with an approved forest or Farm Management Plan or Rural Stewardship Plan.

Scientific sampling for salmonids is allowed if done in accordance with a scientific sampling permit issued by Washington State Department of Fish and Wildlife and where applicable an incidental take permit issued under Section 10 of the Endangered Species Act. Contact: <https://fortress.wa.gov/dfw/scp/scp/index.jsp>.

Drilling and testing for Critical Areas Reports is allowed for limited clearing and grading needed to prepare a Critical Areas Report. If associated spoils are contained on site (i.e. in a manner that the spoils will not mobilize or erode), the following are allowed:

- Data collection and research if carried out by non-mechanical or hand-held equipment to the maximum extent practical;
- Survey monument placement;
- Site exploration and gage installation if performed in accordance with state-approved sampling protocols and accomplished to the maximum extent practical by hand-held equipment; and
- Similar work associated with an incidental take permit issued under Section 10 or consultation under Section 7 of the Endangered Species Act. See <https://fortress.wa.gov/dfw/scp/scp/index.jsp>.

## **Agricultural activities**

Horticulture activities, including tilling, disking, planting, seeding, harvesting, preparing soil, rotating crops and related activities, and grazing of livestock are allowed if these activities have been in existence since January 1, 2005, and there is no expansion into the critical area or critical area buffer. "Continuous existence" includes cyclical operations and managed periods of soil restoration, enhancement or other fallow states associated with these horticultural and agricultural activities.

Allowed for the expansion of existing or new agricultural activities where:

- The site is predominately involved in the practice of agriculture;
- There is no expansion into an area that has been cleared under a I, II, III, IV-S Forest Practice Permit; or
- Is more than 10,000 square feet with tree cover at a uniform density of more than 90 trees per acre and with the predominant mainstem diameter of the trees at least 4 inches in diameter at breast height, not including areas that are actively managed as agricultural crops for pulpwood, Christmas trees or ornamental nursery stock;
- The activities are in compliance with an approved Farm Management Plan (See CAO Section 132); and
- All best management practices associated with the activities specified in the Farm Management plan are installed and maintained.

## **Livestock manure storage facilities**

Construction or maintenance of livestock manure storage facilities is allowed under the same conditions above for horticultural activities, but are only allowed in grazed or tilled wet meadows or their buffers if:

- The facilities are designed to the standards of an approved Farm Management Plan (See CAO Section 138) or an approved Livestock Management Plan in accordance with K.C.C. chapter 21A.30.
- There is no feasible alternative location available on the site; and

- The facilities are located close to the outside edge of the aquatic area buffer to the maximum extent practical;

Construction or maintenance of livestock manure storage facilities is allowed in a severe channel migration hazard area portion of an aquatic area buffer if:

- The facilities are designed to the standards of an approved Farm Management Plan (See *CAO Section 138*);
- There is no feasible alternative location available on the site; and
- The structure is located where it is least subject to risk from channel migration.

Construction or maintenance of a livestock flood sanctuary is allowed in a severe channel migration hazard area portion of an aquatic area buffer if:

- The facilities are designed to the standards of an approved Farm Management Plan (See *CAO Section 138*);
- There is no feasible alternative location available on the site; and
- The structure is located where it is least subject to risk from channel migration.

## **Agricultural drainage**

Construction of agricultural drainage is allowed if in compliance with an approved Farm Management Plan (See *CAO Section 132*) and all best management practices associated with the activities specified in the Farm Management Plan are installed and maintained.

Maintenance of agricultural drainage is allowed if these activities have been in existence since January 1, 2005, and there is no expansion into the critical area or critical area buffer. "Continuous existence" includes cyclical operations and managed periods of soil restoration, enhancement or other fallow states associated with these horticultural and agricultural activities. Maintenance of agricultural drainage is allowed if:

- The site is predominately involved in the practice of agriculture;
- There is no expansion into an area that has been cleared under I, II, III, IV -S or Conversion IV -G Forest Practice Permits or where there is more than 10,000 square feet with tree cover at a uniform density of more than 90 trees per acre and with the predominant mainstem diameter of the trees at least 4 inches in diameter at breast height, not including areas that are actively managed as agricultural crops for pulpwood, Christmas trees or ornamental nursery stock;
- The activities are in compliance with an approved Farm Management Plan (See *CAO Section 132*); and

- All best management practices associated with the activities specified in the Farm Management Plan are installed and maintained.

Maintenance of an agricultural drainage that is used by salmonids is allowed if it is in compliance with an approved farm plan.

## **Farm ponds, fish ponds, livestock watering ponds**

Construction or maintenance of farm ponds, fish ponds, or livestock watering ponds is allowed if these activities have been in existence since January 1, 2005, and there is no expansion into the critical area or critical area buffer. "Continuous existence" includes cyclical operations and managed periods of soil restoration, enhancement or other fallow states associated with these horticultural and agricultural activities.

New farm ponds, fish ponds, or livestock watering ponds or expansion of existing farm ponds, fish ponds, or livestock watering ponds are allowed if:

- The site is predominately involved in the practice of agriculture;
- There is no expansion into an area that has been cleared under I, II, III, IV -S or Conversion IV -G Forest Practice Permits or where there is more than 10,000 square feet with tree cover at a uniform density of more than 90 trees per acre and with the predominant mainstem diameter of the trees at least 4 inches in diameter at breast height, not including areas that are actively managed as agricultural crops for pulpwood, Christmas trees or ornamental nursery stock;
- The activities are in compliance with an approved Farm Management Plan (*See CAO Section 138*); and
- All best management practices associated with the activities specified in the Farm Management Plan are installed and maintained.

## **Cemetery graves**

Excavation of cemetery graves in an established and approved cemetery is allowed. Maintenance of cemetery graves is allowed, whether in an established and approved cemetery or not.

## **Lawns, landscaping and gardening**

Maintenance of lawns, landscaping and gardening for personal consumption is allowed within existing landscaped areas or other previously disturbed areas.

## Golf courses

Maintenance of golf courses is allowed when not performed under the direction of a government agency only if:

- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers; and
- When the maintenance or the replacement of bridges or culverts involves waters used by salmonids, the work is in compliance with ditch standards in a Public Rule and the maintenance of culverts is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert and does not involve the excavation of a new sediment trap adjacent to the inlet. The King County Public Rule is available online at: [http://www.metrokc.gov/ddes/pub\\_rule/#rules](http://www.metrokc.gov/ddes/pub_rule/#rules) (Chapter 21A.24 Sensitive Areas: Maintenance of Ditches Used by Salmonids).

## **Part Two – Critical Areas**

# **Wildlife Habitat Conservation Areas**

# WILDLIFE HABITAT CONSERVATION AREAS: BREEDING SITE PROTECTION



## Bald eagle

Bald eagles typically nest in a large tree with stout upper branches within a stand of large trees close to a lake, river, or marine shoreline.

If a bald eagle nest is identified on the property, the following protections will apply:

- No alterations within 800 feet from March 15 through April 30 (incubation and first three weeks of brooding).
- Maintain a 400 foot radius around nest trees.
- Prohibit use of land-clearing machinery within 800 feet from January 1 through August 31.



photo: © Bill Pratt

## Great blue heron

Great blue herons nest in rookeries (communal groups of nests) typically found in a mature forest stand with an uneven canopy of trees at least 50 feet high, within 0.6 miles of water.

If a great blue heron rookery is identified on the property, the following protections will apply:

- No clearing or grading disturbance from January 1 through July 31 within 924 feet around existing rookeries.
- Maintain 820 foot radius around existing rookeries that are known to be stable; buffer may be increased by 164 feet if population of rookery is declining.



photo: © Gus van Olfelt

## Marbled murrelet

Marbled murrelets nest in large Douglas-fir, Sitka spruce, western hemlock, or western redcedar in old-growth forest. They nest in trees containing platforms or deformities such as large or forked limbs, broken tops, dwarf mistletoe infections, or witches' brooms. The parents take turns every 24 hours incubating the egg or flying up to 12 miles out to sea to feed.

If a marbled murrelet nest site is identified on the property, the following protections will apply:

- Protect area within 0.5 mile of nest trees.



## Northern goshawk

Northern goshawks typically nest in large, contiguous tracts of old-growth or mature forest with large trees, a closed canopy, and an open understory of shrubs and herbs, generally near the base of north-facing slopes. The goshawk is very protective of its nest and will attack anyone who ventures too close.

If a northern goshawk nest is identified on the property, the following protections will apply:

- Maintain 1,500 foot radius around active nest sites located outside the urban growth area.



## Red-tailed hawk

Red tailed hawks are one of the earliest breeders in the Pacific Northwest. Nest characteristics vary widely with vegetation and topography. Common characteristics include an unobstructed access to nests from above and a commanding view of the adjacent environment. Nest sites are tall trees, in open areas and often close to water.

If a red-tailed hawk nest is identified on the property, the following protections will apply:

- Maintain an area with a radius of 325 feet from an active nest located outside the urban growth area.
- Clearing and grading is not allowed within 660 feet of an active nest located outside of the urban growth area from March 1-July 31



**King County**

**Department of Development and Environmental Services**

**Department of Natural Resources and Parks**

**Department of Transportation**

# WILDLIFE HABITAT CONSERVATION AREAS: BREEDING SITE PROTECTION *continued*



## Osprey

Ospreys typically nest in snags that are 10-130 feet tall, with a broken top or strong side limbs, and surrounded by water or within 330 feet of water.

If an osprey nest is identified on the property, the following protections will apply:

- No disturbance within 660 feet from April 1 through September 30.
- Maintain 230 foot radius around active nest.



photo © Mark E. Elbertson

## Peregrine falcon

Peregrine falcons typically locate their nests (eyries) on cliffs at least 150 feet high.

If a peregrine falcon nest (eyrie) is identified on the property, the following protections will apply:

- No human activity along the nest cliff rim, immediately below nest cliffs, on on the cliff face within 1,000 feet at any time of year.
- No surface-disturbing activities that would produce loud noises (e.g. blasting, operation of chainsaws and heavy machinery) from March 1 through June 30 within .5 mile feet of nest.
- Route powerlines 1,000 feet from eyries.



## Spotted owl

Spotted owls typically nest in cavities, broken tops, or other deformities in trees located in old-growth forest or other mature forest with a layered, closed canopy and a supply of large trees or snags with appropriate nest sites.

If a spotted owl nest is identified on the property, the following protections will apply:

- Protect 3,700 foot radius from nest tree.



photo © Merlin D. Tuttle

## Townsend's big-eared bat

Townsend's big-eared bats typically form nesting colonies and hibernate in caves or mines, or occasionally in buildings.

If a cave, mine or other structure containing a Townsend's big-eared bat colony is identified on the property, the following protections will apply:

- Maintain a minimum 450' radius in all directions from the entrance of a cave or mine of an active and alternate nursery sites located outside of the urban growth area from June 1-October 1
- Establish 450 foot radius around the entrance to the cave or mine serving as winter hibernacula November 1 - March 31 outside of the urban growth boundary
- A building, bridge or tunnel, or other structure used solely for day or night roosting shall not be altered from March 1-November 30
- The entrance to a cave or mine that is protected because of bat presence is protected from human entry May 1 - September 15
- Gate entrance to cave or mine that is protected because of bat presence must be designed to allow bats to enter and exit.



## Vaux's swift

Vaux's swifts nest in hollow trees or cavities left by pileated woodpeckers within old-growth forest.

If a Vaux's swift nest is identified on the property, the following protections will apply:

- Maintain a 300 foot radius around active nest sites outside the urban growth area.
- No clearing or construction activities within 400 feet of active or potential nest trees from April 1 through October 31, unless potential nest tree is proved to contain no nests.

# **Wildlife habitat conservation areas overview**

## **Development standards**

### **Wildlife habitat conservation areas**

*Reference CAO Section 198*

A wildlife habitat conservation area is an area for a species whose habitat the King County Comprehensive Plan requires the county to protect including an active breeding site and the area surrounding the breeding site that is necessary to protect breeding activity. Nine species of birds and one bat species have been identified as having habitat to protect. They include the bald eagle, great blue heron, marbled murrelet, northern goshawk, osprey, peregrine falcon, spotted owl, Red-tailed Hawk, and Townsend's big-eared bat.

The development standards that apply to development proposals for each species are listed in Section 198.

Active breeding sites of species not listed above will also be protected if they are identified in the King County Comprehensive Plan. The majority of these species is not likely to be found in the urban or rural residential portions of King County (areas more likely to be developed) or is not known to be actively breeding in the county. However, their breeding habitat is protected. A list of these species can be found in Table 8-1 of The Best Available Science (BAS) Report Volume I: A Review of Science Literature available at: <http://www.metrokc.gov/ddes/cao>.

Adopted management recommendations by the Washington State Department of Fish will be used for the species that are listed. Priority Habitat and Species management recommendations and Priority Habitat Species (PHS) maps and digital data are available at: <http://wdfw.wa.gov/hab/phspage.htm>.

If management recommendations have not been adopted for a species identified in the King County Comprehensive Plan, then the department will base recommendations on best available science.

## **Critical area review**

*Reference CAO Section 146*

Before clearing, grading, onsite preparation, alterations, or a development proposal permit request is made; the applicant must conduct a critical area review. The purpose of the critical area review is to determine if there is an active breeding site of a protected species on the site, mapped or identified within 300 feet of the site, or

visible from property boundaries of the development proposal site. To determine if your site has a priority habitat species, you will need to hire a wildlife expert to conduct a wildlife study.

## Report requirements

*Reference CAO Section 147*

The applicant for the development proposal is required to submit a Critical Areas Report to the department for review.

A report is required for development proposals requiring a critical area review and includes the following basic information:

- Valid Critical Areas Designation. The wildlife habitat area will be identified by an expert and the results from the study will designate the wildlife habitat area regarding the presence, type, and location on the property. The applicant may choose to hire a wildlife consultant or King County DDES Environmental Scientist to conduct the study. Additional information and an application form for the designation process can be found at: <http://www.metrokc.gov/ddes/cao/> or by calling DDES at 206-296-6600;
- If applicable, a critical area review performed for the same site or portion of the site for another permit approval process in the prior five years; and
- A basic checklist (determined by the department) for each critical area on or adjacent to the site and buffer including topographic features, general vegetation types and potential habitat and breeding sites, and any information related to the classification, type or category of the critical area.

Level II, III, and IV reports are required when additional information beyond what is described above is required to determine potential impacts or risks, functions, and appropriate mitigation. Refer to CAO Section 147C.

As part of the Critical Area Review, the department will review Critical Area Reports to determine:

1. That all of the critical areas have been identified accurately;
2. If the critical area will be altered as a result of the development proposal;
3. If the development proposal is consistent with this chapter; and
4. That the proposal has avoided impacts to the critical area.

The report requirements and a Public Rule are in the process of being developed and adopted to implement the criteria and provisions set forth in this section.

**Table 1. Wildlife habitat conservation area setbacks**

| <b>Species</b>   | <b>Wildlife Habitat Conservation Area</b>  | <b>Timing of Alteration</b>  |
|------------------|--|--|
| Bald eagle       | 400-foot radius from active nest   | March 15-April 30, alterations not allowed within 800 feet of nest. January 1 -August 31, land clearing machinery (bulldozers, graders, heavy equipment may not be operated within 800 feet of the nest                                  |
| Great Blue Heron | 820-foot radius from the rookery. Department can increase radius up to an additional 164 feet if population of rookery is declining                      | January 1 -July 31, clearing or grading not allowed within 924 feet of the rookery   |
| Marbled Murrelet | One-half mile radius around an active nest   |  |
| Northern goshawk | 1,500-foot radius around an active nest located outside of the Urban Growth Area (UGA)   |  |
| Osprey           | 230-foot radius around an active nest  | April 1-September 30, alterations not allowed within 660 feet of nest  |
| Peregrine falcon | Extending 1,000 feet of an eyrie on a cliff face, the area immediately above the eyrie on the rim of the cliff, and the area immediately below the cliff | March 1 -June 30, land-clearing activities that result in loud noises (blasting, chain sawing, or heavy machinery) are not allowed within one-half mile of eyrie. New power lines may not be constructed within 1,000 feet of the eyrie. |
| Spotted Owl      | 3,700-foot radius from an active nest  |  |

| Species                   | Wildlife Habitat Conservation Area   | Timing of Alteration   |
|---------------------------|--|--|
| Townsend's long-eared bat | June 1-Oct 1 – 450-foot radius around from entrance to a cave or mine located outside of the UGA, within an active nursery colony<br>Nov. 1-March 31 – 450-foot radius around the entrance to a cave or mine located outside the UGA serving as a winter hibernacula | March 1-Nov 30, a building, bridge, tunnel, or other structure used solely for day or night roosting may not be altered or destroyed.<br>May 1-Sept 15, the entrance into a cave or mine that is protected because of bat presence is protected from human entry<br>A gate across the entrance to a cave or mine that is protected because of bat presence must be designed to allow bats to enter and exit the cave or mine |
| Vaux's swift              | 300-foot radius around an active nest located outside of the UGA   | April 1-Oct 31 clearing grading, or outdoor construction is not allowed within 400 feet of an active or potential nest tree. A species survey may be used to demonstrate that the potential nest tree does not contain an active nest  |
| Red-tailed hawk           | 325-foot radius from an active nest located outside of the UGA   | March 1 – July 31 clearing and grading is not allowed within 660 feet of an active nest located outside of the UGA   |

## Modification of requirements

*Reference CAO Section 199*

The department may approve a reduction of the wildlife habitat conservation area for the bald eagle, goshawk, great blue heron, osprey, peregrine falcon, and red-tailed hawk based on a site-specific Critical Areas Report that demonstrates the evaluation of the tolerance of the animals occupying the nest or rookery to the existing level of development in the vicinity of the nest or rookery. The report requirements and a Public Rule are in the process of being developed and adopted to implement the criteria and provisions set forth in this section.

## Wildlife habitat network

*Reference CAO Section 201*

The official wildlife habitat network is defined and mapped in the King County Comprehensive Plan. The wildlife habitat network is a network of contiguous

vegetated corridors that are intended to link wildlife habitat with critical area buffers, priority habitats, trails, open space and other areas to provide for wildlife movement and alleviate habitat fragmentation.

All urban planned developments, fully contained communities, binding site plans, subdivisions, short subdivisions, and individual lots that have a segment of the wildlife habitat network within them are required to identify and protect the wildlife habitat network (unless it already exists in a tract, easement, or setback, and has been recorded).

## **Development standards**

### **1. Establishing the wildlife habitat network**

The wildlife habitat network must be sited to meet the following conditions:

- Form one contiguous track or setback area that enters and exits the property where the network crosses the property boundary;
- To the maximum extent practicable, maintain a width of 300 feet and not be less than 150 feet at any point,
- Be contiguous with and include critical areas and their buffers;
- To the maximum extent practicable<sup>1</sup>, connect isolated critical areas or habitat;
- To the maximum extent practicable, connect wildlife network segments, open space tracts, or wooded areas on adjacent properties; and
- Be permanently marked in accordance with this chapter.

### **2. Proposals for recreation, forestry and other compatible uses**

Proposals for recreation, forestry, or any other use compatible with preserving and enhancing the habitat value of the wildlife network must have an approved management plan. The applicant must record the plan and monitor and assure compliance with the plan.

### **3. Clearing within a wildlife habitat network**

Clearing within the wildlife habitat area network in a tract or tracts are limited to that allowed by an approved management plan. If a wildlife habitat network is contained within a setback, a management plan is not required. Clearing is not allowed within a setback area on individual lots unless the property owner has an approved management plan.

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<sup>1</sup> “Maximum extent practicable” is defined as the highest level of effectiveness that can be achieved through the use of best available science or technology.

In urban planned developments, fully contain communities, binding site plans, subdivisions and short subdivisions, a homeowner's associate or other entity capable of long-term maintenance and operations shall monitor and assure compliance with any approved management plan.

Segments of the wildlife habitat network set aside in tracts, conservation easements, or setback area must comply with K.C.C. 16.82.150 (Grading Code).

The department may credit a permanent open space tract containing the wildlife habitat network toward the other applicable requirements (*refer to Section 203.H*).

The director may waive or reduce these standards for public facilities such as schools, fire stations, parks and road projects.

## **Mitigation requirements – wildlife habitat conservation area and wildlife habitat network**

*Reference CAO Section 204*

In addition to the requirements in Sections 137 (Allowed Alterations of Critical Areas), Section 149 (Avoiding Impacts to Critical Areas), and Section 151 (Offsite Mitigation), the following mitigation applies to compensate for adverse impacts in wildlife habitat conservation areas and wildlife habitat networks.

### **Wildlife habitat Conservation Area**

Mitigation to compensate for the adverse impacts must prevent disturbance of each protected species. Onsite mitigation may include management practices such as timing of the disturbance. Offsite mitigation is limited to sites that will enhance the wildlife habitat conservation area.

### **Wildlife habitat network**

Mitigation to compensate for the adverse impacts must achieve equivalent or greater biological functions including but not limited to greater biologic functions including but not limited to habitat complexity and connectivity functions. Specific mitigation requirements for impacts include:

- Expand or enhance as close to the impact as feasible ;
- Attain the mitigation ratios in Table 2 for the area of alteration;

**Table 2. Mitigation ratios for wildlife habitat network**

| <b>Onsite Mitigation</b>         | <b>Offsite Mitigation</b>      |
|----------------------------------|--------------------------------|
| 1:1 rectify illegal alteration   | 2:1 rectify illegal alteration |
| 1.5:1 enhancement or restoration | 3:1 enhancement or restoration |

For temporary alterations the department may require rectification, restoration, or enhancement of the altered wildlife habitat network.

The department may increase the width of the wildlife habitat network to mitigate for risks to habitat functions.

To the maximum extent possible the mitigation should replicate the site prior to the alteration, including soil type, conditions and physical features, vegetation diversity and density, and biologic and habitat functions.

### **Modifying requirements**

The department may modify the requirements in this section if the applicant demonstrates that greater wildlife habitat functions will be obtained in the same wildlife habitat conservation area or wildlife habitat network through alternative mitigation measures. The methodology and report requirements and a Public Rule are in the process of being developed and adopted to implement the criteria and provisions set forth in this section.

### **Allowed alterations**

*Reference CAO Section 137*

The standards established in CAO Section 138 apply to all developments that are proposed at or near a wildlife habitat conservation area or wildlife habitat network. Alterations are allowed in these areas if the alteration complies with the development standards, mitigation requirements, and other applicable requirements in this chapter. Refer to the table in CAO Section 138 that lists the allowed alteration (labeled as A) with the corresponding number (1-59) which refers to the alteration condition that applies and is listed in Section 138.D.

### **Single detached dwelling unit**

Construction of single detached dwelling units is not allowed.

### **Nonresidential farm structures**

Construction of nonresidential farm structures is allowed within grazed or tilled wet meadows or buffers of wetlands or aquatic areas where:

- The site is predominately used for the practice of agriculture;
- The structure is in compliance with an approved Farm Management Plan (*See CAO Section 133*);
- The structure is either:
  1. on or adjacent to existing nonresidential impervious surface areas, additional impervious surface area is not created waterward of existing impervious surface areas and the area was not used for crop production,
  2. higher in elevation and no closer to the severe channel migration hazard area, or aquatic area or aquatic area buffer than its existing position, or
  3. located away from existing impervious surface area that is determined to be the optimum site in the Farm Management Plan;
- Best management practices associated with the structure specified in the Farm Management Plan are installed and maintained; and
- Installation of fencing in accordance with K.C.C. chapter 21A.30 does not require the development of a Farm Management Plan if required best management practices are followed and the installation does not require clearing of critical areas or their buffers.

Construction of nonresidential farm structures is allowed in a severe channel migration hazard area portion of an aquatic buffer only if:

- There is no feasible location on site;
- The structure is not used to house animals or store hazardous substances; and
- The total footprint of all accessory structures within the severe channel migration hazard area will not exceed the greater of 1,000 square feet within the severe channel migration hazard or two percent of the severe channel migration hazard area on site.

These alterations are allowed in a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding seasons established under Section 198 of this ordinance.

## **Existing structures**

Existing structures may be maintained or repaired in a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding seasons established under Section 198 of this ordinance.

Expansion or replacement of existing primary structures is allowed in a wildlife conservation area if:

- No clearing, external construction or other disturbance occurs during breeding season established under Section 198 of this ordinance.

- The expansion or replacement does not increase the footprint of a nonresidential structure;
- The expansion or replacement does not increase the footprint of a dwelling unit by more than 1,000 square feet and the location of the expanded area has the least adverse impact on the critical area;
- The structure was not established as the result of a variance, buffer averaging or reasonable use exception; and
- To the maximum extent practical, the expansion or replacement is not located closer to the critical area or within the relic channel that can be connected to an aquatic area.

## **Remodeling**

Interior remodeling is allowed within wildlife habitat conservation areas and the wildlife habitat network.

## **Docks or piers**

Construction of a new dock or pier is not allowed in wildlife habitat conservation areas or the wildlife habitat network.

Maintenance, repair or replacement of docks or piers is allowed in a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding seasons established under Section 198 of this ordinance.

## **Grading**

Grading is allowed in a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding season established under Section 198 of this ordinance.

The following are allowed in the severe channel migration hazard area if conducted more than 165 feet from the ordinary high water mark (*See definition in CAO Section 82*) in the rural area and 115 feet from the ordinary high water mark in the urban area:

- Grading up to 50 cubic yards on lots less than 5 acres; and
- Clearing up to 1,000 square feet or up to a cumulative 35 percent of the severe channel migration hazard area.

Construction of new slope stabilization is allowed:

- In a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding seasons established under Section 198 of this ordinance; and
- Only where erosion or landsliding threatens a structure, utility facility, roadway, driveway, public trails, aquatic area or wetland if to the maximum extent practical, stabilization work must not disturb the slope and its vegetation cover or any associated critical areas.

Maintenance of existing slope stabilization is allowed in a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding seasons established under Section 198 of this ordinance.

## Clearing

Clearing is allowed in a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding season established under Section 198 of this ordinance.

The following are allowed in the severe channel migration hazard area if conducted more than 165 feet from the ordinary high water mark (*See definition in CAO Section 82*) in the rural area and 115 feet from the ordinary high water mark in the urban area:

- Grading up to 50 cubic yards on lots less than 5 acres; and
- Clearing up to 1,000 square feet or up to a cumulative 35 percent of the severe channel migration hazard area.

Clearing is allowed for the removal of hazard trees (*See CAO Section 107*) and vegetation as necessary for surveying or testing purposes. Clearing is also allowed for harvesting of plants and plant materials, such as plugs, stakes, seeds or fruits, for restoration and enhancement projects.

Cutting of firewood is:

- Not allowed in a wildlife habitat conservation area, but
- Allowed within wildlife habitat network with an approved management plan under K.C.C.21A.14.270 as recodified by this ordinance.

Removal of vegetation for fire safety is allowed in a wildlife habitat conservation area if:

- No clearing, external construction or other disturbance occurs during breeding seasons established under Section 198 of this ordinance; and

- If in accordance with best management practices approved by the King County Fire Marshal.

Removal of noxious weeds or invasive vegetation is allowed in a wildlife conservation area if:

- No clearing, external construction or other disturbance occurs during breeding seasons established under Section 198 of this ordinance;
- In accordance with an approved Forest Management plan, farm plan, or Rural Stewardship Plan; or
- Without an approved Forest Management Plan or Rural Stewardship Plan if:
  1. Removal is undertaken with hand labor, including hand-held mechanical tools, unless the King County Noxious Weed Control Board otherwise prescribes the use of riding mowers, light mechanical cultivating equipment or biological control methods. Call 206-296-0290 or visit the King County Noxious Weed Control Web site at: <http://dnr.metrokc.gov/wlr/lands/weeds/index.htm>. The area of noxious weed or invasive vegetation removal must be stabilized to avoid re-growth or regeneration and the area must be re-vegetated with native or non-invasive vegetation and stabilized against erosion, and
  2. Herbicide use is in accordance with federal and state law.

## Forest practices

Non-Conversion Class IV-G Forest Practice is allowed in wildlife areas if:

- Conducted in accordance with chapter 76.09 RCW and Title 222 WAC and a Forest Management Plan is approved for the site by the King County Department of Natural Resources and Parks. The property owner must also provide a notice of intent in accordance with RCW 76.09.060 that the site will not be converted to non-forestry use within six years. Additional information on Forest Management Plans is available at: <http://dnr.metrokc.gov/wlr/lands/forestry/index.htm>.
- In compliance with published Washington State Department of Fish and Wildlife and Washington State Department of Natural Resources Management standards for the species. If there are no published Washington Standards, only if in compliance with management standards determined by the county to be consistent with best available science.

Priority Habitat and Species, management recommendations, and Priority Habitat Species (PHS) maps and digital data are available at <http://wdfw.wa.gov/hab/phspage.htm>.

Class I, II, III, and IV-S Forest Practices are allowed in wildlife habitat conservation areas and wildlife habitat networks.

## **Roads**

Construction of a new public road right-of-way and expansion beyond a public road right-of-way structure is prohibited in wildlife habitat conservation areas and wildlife habitat network.

Maintenance of public road right-of-way structures and repair, replacement or modification of a road within an existing right-of-way is allowed when:

- Performed by or at the direction of a government agency in accordance with the regional road maintenance guidelines. These guidelines are available online at <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>; and
- To the maximum extent practical, during breeding season established under Section 198 of this ordinance, land clearing machinery such as bulldozers, graders or other heavy equipment is not operated within a wildlife habitat conservation area.

## **Farm field access drives**

Construction of farm field access drives are allowed if approved through a Farm Management Plan. See CAO Section 138 relating to Farm Management Plans.

## **Driveways and private access roads**

Construction of driveways or private access roads is allowed if:

- An alternative access is not available;
- Impact to the critical area is minimized to the maximum extent practical including the use of walls to limit the amount of cut and fill necessary;
- The risk associated with landslide and erosion is minimized;
- Access is located where it is least subject to risk from channel migration; and
- Construction occurs during approved periods for instream work.

Maintenance of a driveway, private access road, or farm field access drive is allowed only if:

- To the maximum extent practical, during breeding season established under Section 198 of this ordinance, land clearing machinery such as bulldozers, graders or other heavy equipment is not operated within a wildlife habitat conservation area;
- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers; and

- When the maintenance or the replacement of bridges or culverts involves waters used by salmonids, the work is in compliance with ditch standards in a Public Rule and the maintenance of culverts is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert and does not involve the excavation of a new sediment trap adjacent to the inlet. The King County Public Rule is available online at: [http://www.metrokc.gov/ddes/pub\\_rule/#rules](http://www.metrokc.gov/ddes/pub_rule/#rules) (Chapter 21A.24 Sensitive Areas: Maintenance of Ditches Used by Salmonids).

## Bridges or culverts

Maintenance or repair of a bridge or a culvert is allowed when:

- Performed by or at the direction of a government agency in accordance with regional road maintenance guidelines. These guidelines are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>;
- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers; and
- When the maintenance or the replacement of bridges or culverts involves waters used by salmonids the work is in compliance with ditch standards in a Public Rule and the maintenance of culverts is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert and does not involve the excavation of a new sediment trap adjacent to the inlet. The King County Public Rule is available online at: [http://www.metrokc.gov/ddes/pub\\_rule/#rules](http://www.metrokc.gov/ddes/pub_rule/#rules) (Chapter 21A.24 Sensitive Areas: Maintenance of Ditches Used by Salmonids); and
- To the maximum extent practical, during breeding season established under Section 198 of this ordinance, land clearing machinery such as bulldozers, graders or other heavy equipment is not operated within a wildlife habitat conservation area.

Replacement of a bridge or culvert is allowed:

- When performed by or at the direction of a government agency in accordance with regional road maintenance guidelines. These guidelines are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>; and
- To the maximum extent practical, during breeding season established under Section 198 of this ordinance, land clearing machinery such as bulldozers, graders or other heavy equipment is not operated within a wildlife habitat conservation area.

Expansion of a bridge or culvert is allowed in a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding season established under Section 198 of this ordinance.

## **Utilities and other infrastructure**

Construction of a new utility corridor or utility facility is allowed if:

- An alternative access is not available;
- Impact to the critical area is minimized to the maximum extent practical including the use of walls to limit the amount of cut and fill necessary;
- The risk associated with landslide and erosion is minimized;
- Access is located where it is least subject to risk from channel migration;
- Construction occurs during approved periods for instream work; and
- Allowed only for new utility facilities in existing utility corridors.

Maintenance, repair or replacement of a utility corridor or utility facility is allowed:

- In a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding season established under Section 198 of this ordinance;
- In an existing roadway if constructed with the regional road maintenance guidelines; and
- If the disturbed area is not expanded, clearing is limited to the maximum extent practical and no hazardous substances, pesticides or fertilizers are applied.

Maintenance or repair of existing well or maintenance, repair, or replacement of an existing surface water conveyance system is allowed:

- In a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding season established under Section 198 of this ordinance; and
- If the disturbed area is not expanded, clearing is limited to the maximum extent practical and no hazardous substances, pesticides or fertilizers are applied.

Maintenance or repair of an onsite sewage disposal system, existing surface water flow control, surface water quality treatment facility, and exiting instream structure or construction of a new surface water conveyance system is allowed in:

- Wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding season established under Section 198 of this ordinance.

Construction of new surface water flow control or a surface water quality facility is allowed:

- In a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding season established under Section 198 of this ordinance; and
- In an existing roadway if constructed with the regional road maintenance guidelines.

Construction of a new flood protection facility is allowed:

- If to the maximum extent practical, during breeding season established under Section 198 of this ordinance, land clearing machinery such as bulldozers, graders or other heavy equipment is not operated within a wildlife habitat conservation area;
- In a severe channel migration hazard area portion of an aquatic area buffer to prevent bank erosion only if consistent with the King County's Guidelines for Bank Stabilization Projects and if bioengineering (*See CAO section 11*) techniques are used to the maximum extent practical, unless the applicant can demonstrate that other methods provide equivalent structural stabilization and environmental function. The King County Guidelines for Bank Stabilization Projects is available online at: <http://dnr.metrokc.gov/wlr/biostabl/>.

New flood protection facilities are only allowed in a severe channel migration hazard area to protect the following:

- Public roadways;
- Sole access routes that were in existence before February 16, 1995; or
- New primary dwelling units, accessory dwelling units or accessory living quarters and residential accessory structures located outside the severe channel migration hazard area if:
  1. The site is adjacent to or abutted by properties on both sides containing buildings or sole access routes protected by legal bank stabilization in existence before February 16, 1995. The buildings, sole access routes or bank stabilization must be located no more than 600 feet apart as measured parallel to the migrating channel; and
  2. the new primary dwelling units, accessory dwelling units, accessory living quarters or residential accessory structures are located no closer to the aquatic area than similar structures on abutting adjacent properties.

Maintenance, repair or replacement of lawfully established flood protection facilities is allowed if:

- Maintained by a public agency;
- The height of the facility is not increased;

- The linear length of the affected edge of the facility is not increased;
- The footprint of the facility is not expanded waterward;
- If consistent with the King County's Guidelines for Bank Stabilization Projects and if bioengineering (See *CAO Section 11*) techniques are used to the maximum extent practical;
- The site is restored with appropriate native vegetation; and
- To the maximum extent practical, during breeding season established under Section 198 of this ordinance, land clearing machinery such as bulldozers, graders or other heavy equipment is not operated within a wildlife habitat conservation area.

A new instream structure (See *CAO section 68*) or instream work is allowed:

- If performed by or at the direction of a government agency in accordance with the regional road maintenance guidelines, which are available online at: <http://www.metrokc.gov/kcdot/roads/esa/index.cfm>;
- In a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding season established under Section 198 of this ordinance; and
- If the aquatic area is a Type N or O, the new instream structure or work must be done in the least impacting way and at the least impacting time of the year. It must also be done in conformance with applicable best management practices and all the affected instream and buffer features restored. If the aquatic area is a Type S or F, the new instream structure or work must be included as part of a project to evaluate, restore or improve habitat, and must be sponsored by a public agency that has natural resource management as a function or by a federally recognized tribe.

## Recreation areas

Construction of a new trail is not allowed in a wildlife habitat conservation area.

Maintenance of outdoor public park facilities, trails and publicly improved recreation areas is allowed in the wildlife conservation area if:

- No clearing, external construction or other disturbance occurs during breeding seasons established under Section 198 of this ordinance; and
- It does not involve the use of herbicides or other hazardous substances except for the removal of noxious weeds or invasive vegetation. When salmonids are present, the maintenance must be in compliance with the King County Public Rule for Maintenance of Agricultural Ditches and Streams Used by Salmonids. This Public Rule is available online at: <http://www.metrokc.gov/ddes/pub%5Frule/acrobat/21a-24AgDitch01.pdf>.

## Habitat and science projects

Habitat restoration or enhancement projects are allowed in a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding season established under Section 198 of this ordinance and are limited to:

- Those projects sponsored by a public agency that has natural resource management as a primary function or by a federally recognized tribe;
- Habitat restoration or enhancement projects prepared by a qualified biologist; and
- Being conducted in accordance with an approved forest or Farm Management Plan or Rural Stewardship Plan.

Scientific sampling for salmonids is allowed on Type N or O aquatic areas if hazardous substances or toxic materials are not used.

Drilling and testing for Critical Areas Reports are allowed in a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding season established under Section 198 of this ordinance.

## Agricultural activities

Horticulture activities, including tilling, disking, planting, seeding, harvesting, preparing soil, rotating crops and related activities; grazing of livestock; construction or maintenance of livestock manure storage facility; and construction or maintenance of farm pond, fish pond, or livestock watering pond are allowed:

- If these activities have been in continuous existence since January 1, 2005, and there is no expansion into the critical area or critical area buffer. "Continuous existence" includes cyclical operations and managed periods of soil restoration, enhancement or other fallow states associated with these horticultural and agricultural activities; and
- For the expansion of existing or new agricultural activities where:
  1. the site is predominately involved in the practice of agriculture,
  2. there is no expansion into an area that has been cleared under I, II, III, IV-S Forest Practice Permits, or is more than 10,000 square feet with tree cover at a uniform density of more than 90 trees per acre and with the predominant mainstem diameter of the trees at least 4 inches in diameter at breast height, not including areas that are actively managed as agricultural crops for pulpwood, Christmas trees or ornamental nursery stock,
  3. the activities are in compliance with an approved Farm Management Plan (See CAO Section 138); and
  4. all best management practices associated with the activities specified in the Farm Management Plan are installed and maintained.

Construction or maintenance of livestock flood sanctuaries is not allowed in wildlife habitat conservation areas and wildlife habitat networks.

Construction of agricultural drainage is allowed in a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding season established under Section 198 of this ordinance and if in compliance with an approved Farm Management Plan (See *CAO section 138*) and all best management practices associated with the activities specified in the Farm Management Plan are installed and maintained.

Maintenance of agricultural drainage is allowed if these activities have been in continuous existence since January 1, 2005, and there is no expansion into the critical area or critical area buffer. "Continuous existence" includes cyclical operations and managed periods of soil restoration, enhancement or other fallow states associated with these horticultural and agricultural activities. Maintenance of agricultural drainage is allowed if:

- The site is predominately involved in the practice of agriculture;
- There is no expansion into an area that has been cleared under I, II, III, IV -S or Conversion IV -G Forest Practice Permits or where there is more than 10,000 square feet with tree cover at a uniform density of more than 90 trees per acre and with the predominant mainstem diameter of the trees at least 4 inches in diameter at breast height, not including areas that are actively managed as agricultural crops for pulpwood, Christmas trees or ornamental nursery stock;
- The activities are in compliance with an approved Farm Management Plan (See *CAO Section 138*); and
- All best management practices associated with the activities specified in the Farm Management Plan are installed and maintained.

Maintenance of an agricultural drainage system that is used by salmonids is allowed if it in compliance with an approved farm plan.

## **Cemetery graves**

Excavation of cemetery graves in an established and approved cemetery is allowed. Maintenance of cemetery graves is allowed, whether in an established and approved cemetery or not.

## **Lawns, landscaping and gardening**

Maintenance of lawns, landscaping and gardening for personal consumption is allowed within existing landscaped areas or other previously disturbed areas.

## Golf courses

Maintenance of golf courses is allowed in a wildlife conservation area if no clearing, external construction or other disturbance occurs during breeding season established under Section 198 of this ordinance, and when not performed under the direction of a government agency only if:

- The maintenance does not involve the use of herbicides, hazardous substances, sealants or other liquid oily substances in aquatic areas, wetlands or their buffers, and
- When the maintenance or the replacement of bridges or culverts involves waters used by salmonids, the work is in compliance with ditch standards in a public rule and the maintenance of culverts is limited to removal of sediment and debris from the culvert and its inlet, invert and outlet and the stabilization of the disturbed or damaged bank or channel immediately adjacent to the culvert and does not involve the excavation of a new sediment trap adjacent to the inlet. The King County Public Rule is available online at [http://www.metrokc.gov/ddes/pub\\_rule/#rules](http://www.metrokc.gov/ddes/pub_rule/#rules) (Chapter 21A.24 Sensitive Areas: Maintenance of Ditches Used by Salmonids).

## Part Three – Surface Water

# Drainage Review and Requirements

Projects that require permits in King County may be subject to drainage review as required under the surface water runoff policies codified in Chapter 9.04 of the King County Code (K.C.C.). This chapter describes the drainage review procedures and types, and provides an overview of drainage requirements. The information presented is intended as a guide for applicants proposing small projects such as single-family residences on lots without approved drainage plans and short subdivisions. These projects can usually be reviewed under the small project drainage review process that is described here. Projects requiring full drainage review will typically need the services of a professional engineer and are beyond the scope of this manual. For more detail on full drainage review, see the Surface Water Design Manual (SWDM). Additional detail for small project design and review is contained in Appendix C of the manual, which is available separately in printed or electronic form.

## Drainage Review

Drainage review is the evaluation by the Department of Development and Environmental Services (DDES) permit review staff of a proposed project's compliance with the drainage requirements of the SWDM. During drainage review, members of the DDES permit review staff also evaluate the proposed project for compliance with other King County drainage-related requirements such as those specified in the critical areas and clearing and grading codes. Drainage review is an integral part of the overall permit review process. This section describes when drainage review is required for a proposed project and how to determine which type of drainage review is required.

## Guide to Using This Chapter

The following steps are recommended for efficient use of this chapter.

Determine whether your proposed project is subject to the requirements of the SWDM by seeing if it meets any of the thresholds for drainage review specified in "Projects Requiring Drainage Review" below. Making this determination requires an understanding of the key definitions listed below.

If drainage review is required, use the flow chart to determine what type of drainage review will be conducted by DDES. The type of drainage review defines the scope of drainage requirements that will apply to your project. Check the more detailed

threshold information in the narrative discussion under the heading “Projects Requiring Drainage Review” to verify that you have determined the correct type of drainage review. For projects eligible for small project drainage review, see the "Small Project Drainage Review" section below.

For projects not eligible for small project drainage review, use the information in Section 1.1.2 of the SWDM to determine which core requirements (found in Section 1.2) and which special requirements (found in Section 1.3) must be evaluated for compliance by your project. This will typically require the services of an engineer and is beyond the scope of this manual.

*Note: It is recommended that you arrange a pre-design meeting with the DDES permit review staff to confirm the type of drainage review and scope of drainage requirements that apply to your proposed project.*

## **Key Words and Phrases**

Proper application of the drainage review thresholds in this section requires an understanding of the key definitions listed below.

### **Construct or modify:**

To install a new drainage pipe/ditch or make improvements to an existing drainage pipe/ditch (for purposes other than maintenance, and excluding driveway culverts installed as part of single-family residential building permits) that either serves to concentrate previously non-concentrated surface and storm water runoff or serves to increase, decrease, and/or redirect the conveyance of surface and storm water runoff.

### **High-use site:**

A commercial or industrial site that (1) has an expected average daily traffic (ADT) count equal to or greater than 100 vehicles per 1,000 square feet of gross building area, (2) is subject to petroleum storage or transfer in excess of 1,500 gallons per year, not including delivered heating oil, or (3) is subject to use, storage, or maintenance of a fleet of 25 or more diesel vehicles that are over 10 tons net weight (trucks, buses, trains, heavy equipment, etc.). Also included is any road intersection with a measured ADT count of 25,000 vehicles or more on the main roadway and 15,000 vehicles or more on any intersecting roadway, excluding projects proposing primarily pedestrian or bicycle use improvements.

### **Land disturbing activity:**

Any activity that results in a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land disturbing activities

include, but are not limited to demolition, construction, clearing, grading, filling, excavation, and compaction. Landscape maintenance, gardening, and farming activities are not considered to be land disturbing activities.

### **Maintenance:**

Those usual activities taken to prevent a decline, lapse, or cessation in the use of currently serviceable structures, facilities, equipment or systems if there is no expansion of the structure, facilities, equipment or system and there are no significant hydrologic impacts. Maintenance includes the repair or replacement of non-functional facilities and the replacement of existing structures with different types of structures, if the repair or replacement is required to meet current engineering standards or is required by one or more environmental permits and the functioning characteristics of the original facility or structure are not changed. For the purposes of applying this definition to the thresholds and requirements of this manual, DDES will determine whether the functioning characteristics of the original facility or structure will remain sufficiently unchanged to consider replacement as maintenance.

### **Native vegetated surface:**

A surface in which the soil conditions, ground cover, and species of vegetation are like those of the original native condition for the site. More specifically, this means (1) the soil is either undisturbed or has been treated according to the "native vegetated landscape" specifications in Appendix C, Section C2.2.7, (2) the ground is either naturally covered with vegetation litter or has been top-dressed with 4 inches of hog fuel (or other suitable mulch) consistent with the native vegetated landscape specifications in Appendix C, and (3) the vegetation is either (a) comprised predominantly of plant species, other than noxious weeds, which are indigenous to the coastal region of the Pacific Northwest and which reasonably could have been expected to naturally occur on the site, or (b) comprised of plant species as specified for a native vegetated landscape in Appendix C. Examples of plant species include trees such as Douglas fir, Western hemlock, Western red cedar, alder, big-leaf maple and vine maple; shrubs such as willow, elderberry, salmonberry and salal; and herbaceous plants such as sword fern, foam flower, and fireweed.

### **Natural discharge area:**

An onsite area tributary to a single natural discharge location.

### **Natural discharge location:**

The location where runoff leaves the project site under existing site conditions.

## **New impervious surface:**

The addition of a hard or compacted surface such as roofs, pavement, gravel or dirt, or the addition of a more compacted surface such as the paving of pre-existing dirt or gravel.

## **New pervious surface:**

The conversion of a native vegetated surface or other native surface to a non-native pervious surface (e.g., conversion of forest or meadow to pasture land, grass land, cultivated land, lawn, landscaping, bare soil, etc.), or any alteration of existing non-native pervious surface that significantly increases surface and storm water runoff (e.g., conversion of pasture land, grass land, or cultivated land to lawn, landscaping, or bare soil).

## **Project:**

Any proposed action to alter or develop a site that may also require drainage review.

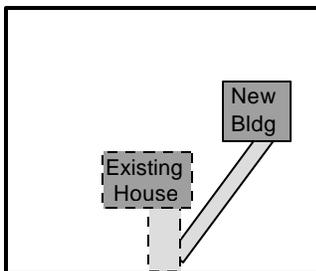
## **Project site:**

That portion of a site and any offsite areas subject to proposed project activities, alterations, and improvements including those required by this manual. .

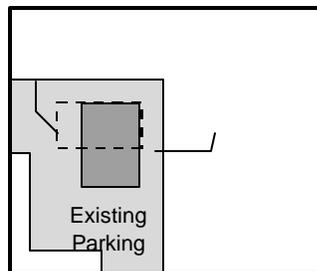
## **Redevelopment project:**

A project that proposes to add, replace, or modify impervious surfaces (for purposes other than a residential subdivision or maintenance) on a site that is already substantially developed in a manner consistent with its current zoning or with a legal non-conforming use or has an existing impervious surface coverage of 35% or more. The following examples illustrate the application of this definition.

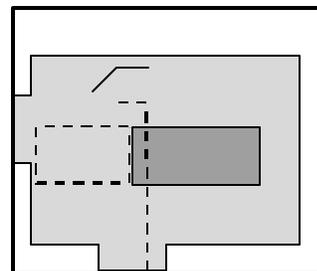
**A Redevelopment Project that Adds New Impervious Surface**



**A Redevelopment Project that Replaces Impervious Surface**



**A Redevelopment Project that Adds and Replaces Impervious Surface**



### **Replaced impervious surface:**

Any existing impervious surface on the project site that is proposed to be removed and re-established as impervious surface, excluding impervious surface removed for the sole purpose of installing utilities or performing maintenance. Removed means the removal of buildings down to bare soil or the removal of Portland cement concrete (PCC) slabs and pavement or asphaltic concrete (AC) pavement together with any asphalt-treated base (ATB). It does not include the removal of pavement material through grinding or other surface modification unless the entire layer of PCC or AC together with ATB is removed.

### **Single-family residential project:**

Any project that (a) constructs or modifies a single-family dwelling unit, (b) makes improvements (e.g., driveways, roads, outbuildings, play courts, etc.) or clears native vegetation on a lot that contains or will contain a single-family dwelling unit, or (c) is a plat, short plat, or boundary line adjustment which creates or adjusts lots that will contain single-family dwelling units.

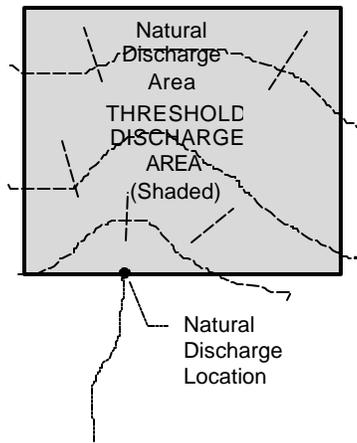
### **Site (a.k.a. development site):**

A single parcel, or two or more contiguous parcels that are under common ownership or documented legal control, used as a single parcel for purposes of applying for authority from King County to carry out a development/project proposal. For projects located primarily within dedicated rights-of-way, site includes the entire width of right-of-way within the total length of right-of-way subject to improvements proposed by the project.

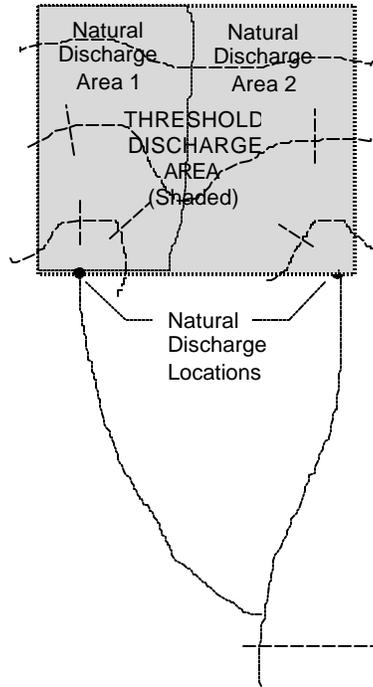
### **Threshold discharge area:**

An onsite area draining to a single natural discharge location or multiple natural discharge locations that combine within one-quarter-mile downstream (as determined by the shortest flowpath). The following examples illustrate this definition. The purpose of this definition is to clarify how the thresholds of this manual are applied to project sites with multiple discharge points.

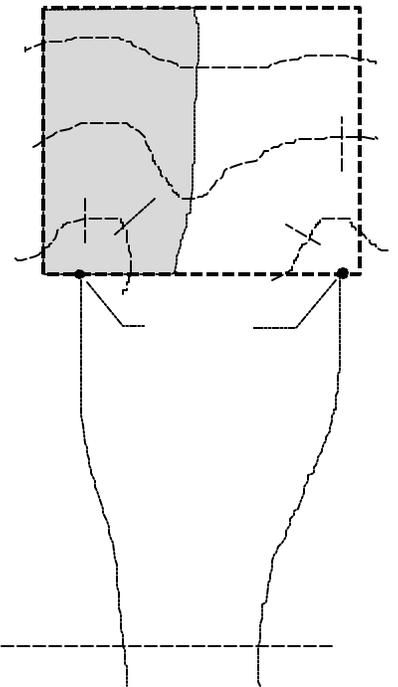
**Example of a Project Site with a Single Natural Discharge and a Single Threshold Discharge Area**



**Example of a Project Site with Multiple Natural Discharges and a Single Threshold Discharge Area**



**Example of a Project Site with Multiple Natural Discharges and Multiple Threshold Discharge Areas**



## Projects Requiring Drainage Review

Drainage review is required for any proposed project (except those proposing only **maintenance**) that is subject to a King County development proposal, permit, or approval listed at right, AND which meets any one of the following conditions:

The project adds or will result in 2,000 square feet<sup>1</sup> or more of **new impervious surface**; OR

The project proposes 7,000 square feet<sup>1</sup> or more of **land disturbing activity**; OR

The project proposes to **construct or modify** a drainage pipe/ditch that is 12 inches or more in size/depth, or receives surface and storm water runoff from a drainage pipe/ditch that is 12 inches or more in size/depth; OR

The project contains or is adjacent to a floodplain, stream, lake, wetland, closed depression, or other **critical area** as defined in K.C.C. 21A.24, excluding seismic, coal mining, and volcanic hazard areas; OR

The project is located within a **critical drainage area**;<sup>2</sup> OR

The project is a **redevelopment project** proposing \$100,000<sup>3</sup> or more of improvements to an existing **high-use site**; OR

The project is a **redevelopment project** on a single or multiple parcel site in which the total of new plus replaced impervious surface is 5,000 square feet or more and whose valuation of proposed improvements (including interior improvements and excluding required mitigation and frontage improvements) exceeds 50% of the assessed value of the existing site improvements.

### King County Permits and Approvals

Administrative Subdivision (short plat)  
 Binding Site Plan  
 Boundary Line Adjustment  
 Conditional Use\*  
 Clearing  
 Commercial Building  
 Experimental Design Adjustment\*  
 Formal Subdivision (plat)  
 Franchise Utility Right-of-Way Use  
 Grading  
 Pre-application Adjustment\*  
 Right-of-Way Use  
 Shoreline Substantial Development\*  
 Single-family Residential Building  
 Special Use\*  
 Unclassified Use\*  
 Urban Planned Development  
 Zoning Reclassification\*  
 Zoning Variance\*

\*Note: If the proposed project will require subsequent permits subject to drainage review, then DDES may allow the drainage review to be deferred until application for the later permits.

<sup>1</sup> The thresholds for new impervious surface and land disturbing activity shall be applied by **threshold discharge area** and in accordance with the definitions of these surfaces and activities.

<sup>2</sup> See Reference Section 3 for a list of critical drainage areas.

<sup>3</sup> This is the "project valuation" as declared on the permit application submitted to DDES. The dollar amount of this threshold is considered to be as of January 8, 2001 and may be adjusted on an annual basis using the local consumer price index (CPI).

Note: January 8, 2001 is the effective date of the ESA 4(d) Rule for Puget Sound Chinook salmon.

If drainage review is required for the proposed project, the type of drainage review must be determined based on project and site characteristics as described below. The type of drainage review defines the scope of drainage requirements that must be evaluated for project compliance with the SWDM.

## **Drainage Review Types and Requirements**

For most projects adding 5,000 square feet or more of impervious surface, the full range of core and special requirements contained in Sections 1.2 and 1.3 must be evaluated for compliance through the drainage review process. However for some types of projects, the scope of requirements applied is narrowed to allow more efficient, customized review.

Each of the following four drainage review types tailors the review process and application of drainage requirements to a project's size, location, type of development, and anticipated impacts to the local and regional surface water system:

- Small Project Drainage Review
- Targeted Drainage Review
- Full Drainage Review
- Large Project Drainage Review

Each project requires only one of the above drainage review types, with the single exception that a project which qualifies for small project drainage review may also require targeted drainage review. The following flow chart can be used to determine which drainage review type would be required. Note that projects requiring full drainage review and large site drainage review will require the services of a professional engineer and are beyond the scope of this manual. Many projects requiring targeted drainage review will also require the services of a professional engineer and are beyond the scope of this manual.

## FLOW CHART FOR DETERMINING TYPE OF DRAINAGE REVIEW REQUIRED

Is the project a single family residential or agricultural project that results in  $\geq 2,000$  sf of new impervious surface and meets one of the following criteria?

- The project results in  $\leq 10,000$  sf of total impervious surface added since 1/8/01 and  $\leq 35,000$  sf of new pervious surface, or for sites zoned as RA, F, or A, new pervious surface  $\leq 70,000$  sf or 35% of the site, whichever is greater, OR
- The project results in  $\leq 4\%$  total impervious surface and  $\leq 15\%$  new pervious surface on a single parcel site zoned as RA or F, or a single/multiple parcel site zoned as A, and all impervious area on the site, except 10,000 sf of it, is set back from any down slope site boundary, drainage system, or critical area at least 100 ft for every 10,000 sf of total impervious surface?

Yes

### SMALL PROJECT DRAINAGE REVIEW

*Note: The project may also be subject to Targeted Drainage Review as determined below.*

No

Does the project result in  $\geq 2,000$  sf of new impervious surface or  $\geq 35,000$  sf of new pervious surface, OR is the project a redevelopment project on a parcel or combination of parcels in which new plus replaced impervious surface totals  $\geq 5,000$  sf and whose valuation of proposed improvements (excluding required mitigation and frontage improvements) is  $> 50\%$  of the assessed value of existing improvements?

No

Does the project have the characteristics of one or more of the following categories of projects (see the more detailed threshold language on p. 3.7)?

1. Projects that contain or are adjacent to floodplains or critical areas; projects within a Critical Drainage Area or Landslide Hazard Drainage Area; or projects that propose  $\geq 7,000$  sf (3 ac if the project is in Small Project Drainage Review) of land disturbing activity.
2. Projects proposing to construct or modify a drainage pipe/ditch that is 12" or larger or receives runoff from a 12" or larger drainage pipe/ditch.
3. Redevelopment projects proposing  $\geq \$100,000$  in improvements to an existing high-use site.

Yes

Reassess whether drainage review is required

No

Yes

### TARGETED DRAINAGE REVIEW

*Note: see Surface Water Design Manual.*

Is the project an Urban Planned Development (UPD), OR does it result in  $\geq 50$  acres of new impervious surface within a subbasin or multiple subbasins that are hydraulically connected, OR does it have a project site  $\geq 50$  acres within a critical aquifer recharge area?

No

### FULL DRAINAGE REVIEW

*Note: See Surface Water Design Manual.*

Yes

### LARGE PROJECT DRAINAGE REVIEW

*Note: See Surface Water Design Manual*

## **Purpose and Intent of Small Project Drainage Review**

The purpose of small project drainage review is to provide a simpler, less costly method of review and approval of drainage plans for small-scale single-family residential projects and agricultural projects. Small project drainage review is a simplified alternative to the full drainage review process that most projects must undergo as part of permit review and approval by the county. In full drainage review, the county's full complement of core and special requirements for mitigation of storm water impacts from new development and redevelopment are applied as specified in the *SWDM*. Because these requirements usually involve engineering analysis, collection and assessment of technical information, and the design of drainage facilities among other things, a licensed civil engineer is required to address compliance with each requirement. In small project drainage review, most of the core and special requirements are replaced with simplified requirements and BMPs that can be applied by a non-engineer.

The intent of small project drainage review is to achieve the same level of mitigation as full drainage review while minimizing the need for a licensed civil engineer, thus reducing costs to the applicants of smaller projects. This is made possible by limiting the size and type of projects eligible for small project drainage review such that the core and special requirements of the *SWDM* are either not applicable or can be adequately addressed by a non-engineer through proper application of the BMPs and measures Appendix C of the *SWDM*. A licensed engineer is then only required when the county identifies site-specific drainage concerns that must be addressed by an engineer through targeted drainage review.

## **Small Project Drainage Review Process**

Drainage review, when required, is one of several reviews conducted by the Department of Development and Environmental Services (DDES) as part of its review process for county development permits and approvals. The process used for drainage review depends largely on the permit review process already established for different types of developments (e.g., subdivision, single-family residence, or commercial building). For projects in small project drainage review, the review process primarily depends on whether the project is a proposed short plat or just proposed site improvements to an existing parcel or combination of parcels. A flow chart that shows the general drainage review process common to these two types of development follows this text. Following is a description of the small project drainage review process for each of these development types.

### **Site Improvement Projects**

This section describes the small project drainage review process for single-family residential projects and agricultural projects that apply for a permit or approval to

make specific site improvements such as construction of buildings, additions, driveways, or other impervious surfaces, or clearing of native vegetation.

When a permit/approval for a single-family residential project or agricultural project requires drainage review as specified in the *SWDM*, members of the DDES Site Engineering staff plot the project location on various maps (Assessor's, Kroll, topography, soils, etc.), research sensitive areas on or near the site, and check for adopted area-specific conditions which might affect the drainage requirements for the site. A DDES engineer reviews this information with respect to the proposed application. In most cases, a visit to the site is made to check existing conditions and drainage concerns.

The DDES engineer makes a determination of the type of drainage review required for the site and will either:

- Approve the permit subject to complying with an approved small project drainage plan or engineered plan;
- Request additional information as needed;
- Request that a small project drainage plan be submitted in accordance with Appendix C of the *SWDM*;
- Request that an engineered drainage plan be submitted in accordance with the *Surface Water Design Manual*; OR
- Deny the permit application because it cannot meet required codes (e.g., a proposed new residence located in a FEMA floodway or in a channel migration hazard area).

## **Short Plat Projects**

For single-family residential projects that are short plats, the small drainage review process generally includes the following elements.

### **Pre-application**

The short plat process requires a mandatory pre-application meeting prior to formal submittal. The purpose of the pre-application meeting is to identify potential site constraints and regulatory requirements for the proposed project. If the short plat is potentially eligible for small project drainage review, the applicant may use Appendix C of the *SWDM* and other information necessary to complete the small project drainage plan.

If the drainage requirements for a specific short plat are determined during a pre-application meeting, small project drainage plans or full drainage review engineering plans [site improvement plans, erosion and sediment control plans, and a technical information report (as necessary) – see *SWDM* Section 2.3] may be submitted with the application. Reference C of Appendix C contains a series of questions that may help assess the requirements for a potential small project short plat. Submitting

plans with the short plat permit application may expedite the review of the proposed application. However, there is risk that the plans prepared may exceed, or not adequately address, the yet-to-be-determined conditions of preliminary approval.

### **Preliminary Approval**

After formal permit application, a more detailed review of the site and a determination of the type of drainage review required for the proposed short plat are made. If eligible for small project drainage review, the application may be placed on hold pending the completion of a small project drainage plan.

The applicant is responsible for submitting a small project drainage plan. Upon completion and approval of the small project drainage plan (and other application requirements), preliminary approval may be granted, subject to the conditions of the small project drainage plan. For simple short plats that have no drainage issues triggering targeted drainage review, engineered drainage plans are not usually required.

For proposed short plats requiring some engineering analysis, preliminary approval may be granted subject to the approval of engineering plans and a small project drainage plan. The applicant may choose to have the small project drainage plan incorporated into the engineered plans (prepared by a licensed civil engineer) or may elect to have a separate small project drainage plan that is not prepared by an engineer.

Proposed short plats that qualify for small project drainage review but cannot, or elect not to, comply with the small project drainage requirements will be subject to full drainage review. Any proposed short plats unable to comply with all applicable regulations (drainage or non-drainage) may be denied.

### **Engineering Review**

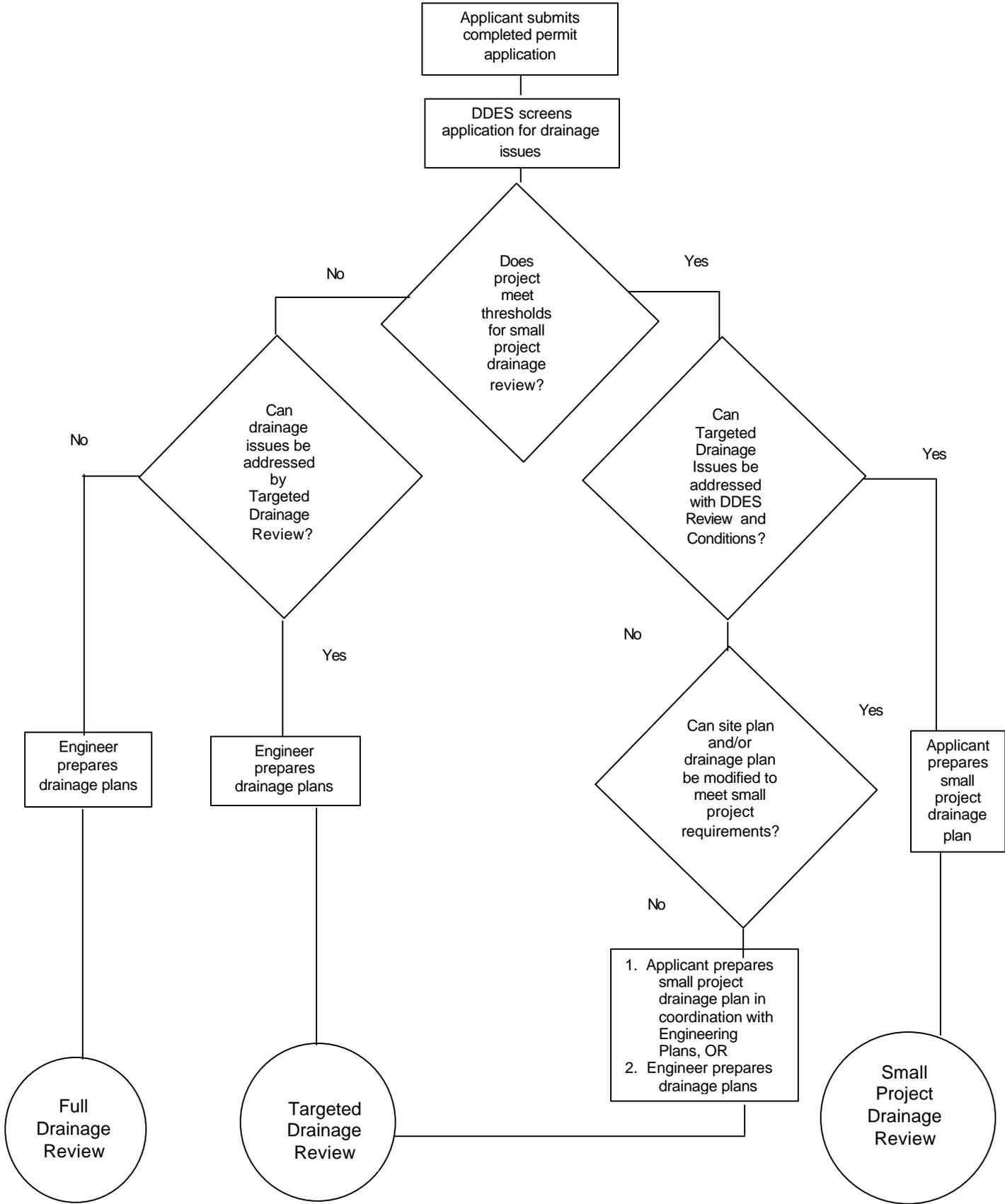
Short plats receiving preliminary approval subject to the completion of a small project drainage plan and/or engineering plans are subject to engineering review. When separate plans are being prepared, submittals for engineering review should include both sets of plans to minimize review time and re-submittal fees.

### **Final Recording**

All short plat applications must complete the requirements of final recording. Small projects will require additional note(s) be placed on the recorded documents which reference the approved small project drainage plan for future lot construction.

Note: Future building permit applications which do not comply with the conditions of the approved small project drainage plan (e.g., impervious coverage limits, location of BMPs, etc.) may be subject to full drainage review.

# SMALL PROJECT DRAINAGE REVIEW PROCESS



## **Water Quality Code**

The Water Quality Code (King County Code 9.12 Water Quality) protects surface and ground water quality by providing minimum requirements for reducing and controlling the discharge of contaminants. The code prohibits any person from discharging contaminants into surface and storm water and ground water, and requires preventative measures to restrict contaminants from entering such waters. King County provides technical assistance to identify appropriate preventative measures, or Best Management Practices (BMPs). Failure to prevent contaminants from entering the water could result in enforcement and fines can be levied.

## **Stormwater Pollution Prevention Manual**

The Stormwater Pollution Prevention Manual was developed to identify BMPs to prevent contaminants from entering storm, surface and ground waters. Pollutant source control BMPs, either structural or nonstructural, are identified by pollutant-generating activities. Examples include: 1) an engine repair activity would require the use of drip pans and ground cloths (nonstructural) to capture oil spills and drips, 2) a vehicle washing activity may require hookup to a sanitary sewer (structural) for discharge of soapy wash water. If source control measures are not sufficient to prevent contamination, then a treatment BMP, such as an oil/water separator, may be required to remove the pollutant.

The Stormwater Pollution Prevention Manual can be viewed online at: <http://dnr.metrokc.gov/wlr/dss/spcm.htm>. Technical assistance is provided to identify required BMPs. A water quality audit can be scheduled by calling 206-296-1900.

## Part Four – Clearing and Grading

# Clearing and Grading

## Purpose

King County's clearing and grading regulations are intended to regulate and protect critical areas from adverse clearing and grading operations including but not limited to the removal of vegetation, grading and earthwork construction, and mining and materials processing operations. These regulations establish standards for how and when clearing and grading activities can be undertaken, establishes administrative procedures for the approval, issuance and inspection of clearing and grading permits and provides for penalties for the violation of these regulations.

## When is a Clearing and Grading Permit required?

- Clearing or grading in any amounts within critical areas or buffers defined in K.C.C. 21A.24.
- Clearing in any quantities in areas subject to property specific development standards provided under K.C.C. 21A.38.
- Different thresholds apply if the work is occurring outside of critical areas.

Exceptions: Certain activities conducted in and adjacent to critical areas are exempt from the need to obtain a permit PROVIDED the work is conducted in accordance with operating standards in K.C.C. 16.82.100 and conforms to the limitations outlined in the permit exception table and the critical area alterations table. These exempt activities include:

- Maintenance of lawn, landscaping and gardening for personnel consumption;
- Maintenance of public and private roadways with some limitations adjacent to aquatic areas and wetlands;
- Construction and maintenance of farm field access roads subject to an approved farm management plan;
- Certain agricultural practices including tilling, discing, planting and seeding, and related activities;
- Construction and maintenance of manure storage facilities, and maintenance of ponds and drainage facilities subject to an approved farm management plan.

## Permitting

Once property owners have determined that a Clearing and/or Grading Permit is necessary, they should conduct further review to determine which permit process most appropriately fits their needs and is most suitable for their proposed project.

### Short Form Permits

The short form is a field issued permit for projects that generally meet the following criteria:

1. In certain limited instances, short form permits are used to authorize hazard tree removal and other minor miscellaneous clearing from critical area buffers provided the alterations are allowed under the Critical Areas Ordinance.
2. The project is exempt from State Environment Policy Act (SEPA) review or was covered under a prior determination. If applicants are not sure whether or not an Environmental Checklist is required for a proposed project, contact the Land Use Services Division's SEPA Section at 206-296-6600; and
3. The proposal does not include any permanent drainage facilities or exceed the thresholds requiring preparation of a drainage plan as outlined in K.C.C. 9.04 and the King County Surface Water Design Manual.

To obtain a Short Form Permit, the following steps will need to be completed:

1. Complete the Affidavit for Application Form;
2. Complete the Certification and/or Transfer of Applicant Status Form;
3. Prepare a site plan, and
4. Call 206-296-6600 to schedule an onsite meeting with a site development specialist.

Permit fees will be assessed during the onsite meeting and mailed to the department in an envelope provided. Work will not be authorized until fees owing are paid. A Short Form Permit may be issued for up to a year but may not be extended.

### Standard Application

If you do not qualify for a short form a standard permit application will be required. Fees and specific submittal requirements for a proposed project will be determined during the pre-application meeting. Please note that applications will not be accepted without a pre-application review. Call 206-296-6600 to schedule an appointment.

At the pre-application meeting, it is important to determine everything that must be submitted for the standard application to be considered complete. Review of a

standard application will not begin until all application materials have been submitted.

Please note that verification of the applicant is now required per Chapter 20.20 of the King County Code (K.C.C.). The Certification of Applicant Status Form is used to ensure that the property owner is aware that an application has been made to develop his/her property and to document the name of the legal applicant, as well as any consultants. The legal applicant is the individual or group authorized to receive plans and correspondence from King County. When the applicant is someone other than the property owner, the Certification and Transfer of Applicant Status Form is used to transfer applicant status to an agent. This form must include authorization from the legal property owner.

Unless a pre-application waiver form has been signed by the Site Development Services Section Supervisor or the supervisor's designee and accompanies the permit application, the pre-application number must be identified on the permit application form at the time of submittal. In addition, the standard application requirements listed below are required to submit a complete and vested permit application.

- Signed Clearing and Grading Permit Application Worksheet Form
- Applicant Status or Certification and Transfer of Applicant Status Form
- Affidavit for Application Form
- Completed and signed State Environmental Policy Act (SEPA) Checklist – If a project is categorically exempt from SEPA, the checklist requirement is then waived and a separate waiver form is not required. The Permit Application Worksheet must specify the applicable SEPA exemption.
- Fees – The applicant must submit a completed and signed permit fee worksheet with the permit application. The worksheet will be provided to the applicant by the site development specialist.
- List of pending or obtained permits – This information will be included on the application form.
- Documentation required by the code requirements set forth in the K.C. SWDM
- Site plan prepared in accordance with K.C.C. 16.82.060(A)(6), (B) and (C)
- Legal Description – The legal description should be included on the permit application form or included as an attachment to the application.
- Variances obtained or required under Title 21A, to the extent known at the time of application
- Description of Work – This information will be included on the completed permit application form.
- Identification of critical areas
- Identification any clearing restrictions pertaining to the property

All of the items listed above must be included with every standard permit application before it will be input by the Permit Center unless specific items have been waived

by the Site Development Services Section Supervisor or the supervisor's designee and a completed and signed permit requirements waiver form accompanies the permit file.

In addition to the statutory requirements listed above, the applicant shall also submit completed and signed fee and application worksheets for each permit application.

## **Emergencies**

Any activity that would normally require a permit, including alterations to critical areas, that at the time taken was not in compliance with the provisions of this code, will not be considered a violation if the action was undertaken in response to an emergency and the following steps are taken:

- The department was notified prior to undertaking the activity, or if that is not possible, within 48 hours of performing the work.
- A pre-application meeting is scheduled within 48 hours of conducting the work and is held within 30 days.

At the pre-application meeting, the department will assign permit application number to track and bill staff time for filing a completed permit application as well as provide direction to the applicant for corrective action or mitigation necessary to comply with K.C.C. 21A.24.

The department will confirm in a written decision that the activity was an emergency that was unanticipated and not caused by the action or inaction of the applicant, immediate action was necessary and that the action taken was appropriate for the risks posed by the emergency.

## **Plans, specification and other permit requirements**

### **Site clearing, grading and erosion control plans**

The first sheet of the plans must show the vicinity map and legal description of the property. Plans must be folded to fit into an 8½x14-inch folder and must include the following information:

1. A legal description of the property (Customers can get this from the King County Department of Assessments.);
2. A north arrow;
3. A vicinity map drawn to a scale of approximately one inch equals 2,000 feet that is in sufficient detail to clearly locate the project in relation to arterial streets, natural features, landmarks and municipal boundaries;
4. Grading plan scale (horizontal and vertical);

5. The size and location of existing improvements within 50 feet of the project, indicating which will be retained and which will be removed;
6. Property boundaries, easements, setback requirements and clearing limits (e.g., floodplains, shorelines, etc.);
7. Existing and proposed contours (maximum 5-foot intervals) that extend 100 feet beyond the edge of the project;
8. At least two cross-sections, one in each direction, showing existing and proposed contours and the horizontal and vertical scales;
9. The location of areas affected by clearing restrictions when such areas are contained within any of the following:
  - Wildlife Habitat Corridors, as specified in Chapter 21A.14 of the King County Code;
  - Special District overlays in an adopted community plan.
10. Clear marking of any open space tract or conservation easement (per Chapter 21A.14 of the King County Code);
11. Give the total area to be cleared on site as a percentage of the total site area;
12. Show temporary and permanent erosion-sediment control facilities. Temporary facilities (i.e., silt fence, mulching, netting, sediment ponds, etc.) must be designed to control runoff during clearing and grading. Permanent facilities (i.e., detention ponds, revegetation, biofiltration swales, etc.) must be designed to control erosion after grading is complete. All facilities must be designed in accordance with the current King County *Surface Water Design Manual*; and
13. A stamp and signature from a registered civil engineer licensed to practice in the State of Washington must appear on the following information:
  - plans that include permanent drainage facilities;
  - plans for work in landslide hazard areas; and
  - plans prepared in conjunction with the proposed construction or placement of a structure.

## Other requirements

1. Plan review fees must be paid at the time of permit application. Before permit issuance, the remaining fee balance, any bonds or insurance, and verification that property taxes are current will be required;
2. If access to the property is from a state highway, a State Highway Access Permit must be obtained from the Washington State Department of Transportation. If access to the property is from a King County road, the access must comply with the *King County Road Standards*. The standards include requirements for entering site distance, landings and other issues that may need to be reviewed;
3. If permanent drainage facilities are proposed, a separate storm drainage plan must be submitted. Consult Chapter 9.04 of the King County Code and the current *Surface Water Design Manual* for specific design criteria;
4. Two copies of the soils report or geotechnical evaluations prepared for the site must be provided. This provision may be waived for certain permits if the

- proposed grading is not intended to provide structural support, is not located in a hazard area (landslide, seismic, steep slope, or coal mine) and a covenant is placed in the Title advising of the nature of any fill;
5. Copies of any correspondence with King County regarding the project or site must be provided;
  6. Copies of any approvals or permits granted by other agencies, such as the Washington State Department of Fish and Wildlife, U.S. Army Corps of Engineers, U.S. Department of Natural Resources, Washington State Department of Ecology, etc., must be provided;
  7. Earthwork calculations must be submitted with the application if the earthwork quantities are greater than 3,000 cubic yards or the disturbed area is greater than one acre. If the project is located in a no-burn zone, or clearing will be done outside the normal burning season, or building demolition will be completed as part of the initial site development, a description of the proposed clearing/demolition waste management plan must be provided;

If customers have any questions regarding Clearing and/or Grading Permits, please contact the Land Use Services Division at 206-296-6600.

## **Permit decision processes**

Clearing and Grading permits are Type 1 land use actions<sup>1</sup>. Permit applications are reviewed pursuant to the permit process and procedures provisions of K.C.C. Chapter 20.20 for compliance with applicable King County Codes including, but not limited to, the critical area ordinance, shoreline management program and King County Surface Water Design Manual and may also be conditioned to mitigate identified project impacts. Projects that cannot mitigate impacts to less than significant levels or that cannot be modified or conditioned to meet King County Code requirements will be denied. Conditions necessary to comply with the critical area, shoreline, drainage and other King County development regulations are incorporated by reference into all Clearing and Grading Permits.

Any decision to approve, condition or deny a Clearing and Grading Permit based upon the requirements of the CAO with the provisions of the Land Use Petition Act as provided in 36.70C RCW, may be appealed to the Zoning and Subdivision Hearing Examiner in accordance with K.C.C. 20.20.090.

## **Permit duration and renewal**

Clearing and grading permits have varied durations which can last up to five years. The normal timeframes for an issued permit are:

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<sup>1</sup> Clearing and grading permits that require preparation of an Environmental Impact Statement are a Type 2 land use decision and decisions to approve, deny or condition such permits may be appealed to the Zoning and Subdivision Hearing Examiner in accordance with the provisions of Title 20.

- Short Form Permits – 1 year with no renewals; and
- Standard Applications – 1 year with annual renewals.

Permits will only be renewed after the department has determined that operating conditions and performance standards have been met and that permit conditions are adequate to protect against impacts resulting from the permitted activity. If a contrary finding is made, the department may require revisions to the permit, initiate periodic review or initiate an enforcement action to bring about necessary corrections.

## **Clearing and grading standards**

Any activity that involves clearing, grading or that otherwise alters the condition of any critical area or buffer, whether or not a permit has been obtained or is required, in addition to meeting the critical area development standards, must also meet the operating standards of the Clearing and Grading Ordinance. These operating conditions are aimed primarily at developing stable construction sites while maintaining soil hydrology, protecting water quality, preserving native vegetation.

### **Soil hydrology**

Areas that have been cleared or graded shall have the soil moisture holding capacity restored to that of the original undisturbed soil native to the site. This can be accomplished in several ways.

- The organic duff layer and native topsoil can be left in an undisturbed state. If any of these materials are removed during grading, they should be stockpiled on site in designated areas that are not adjacent to public resources or critical areas. The duff layer and topsoil shall be reapplied to other portions of the site at the completion of grading. If the reapplication of duff and topsoil is not adequate to meet this requirement, soil amendments can be applied.
- If the soil in any area has been compacted or if portions of the duff or topsoil layers have been removed, the soil shall be amended to mitigate for the lost moisture-holding capacity. The topsoil shall be replaced between May 1 and October 1 : and
  1. be a minimum of 8 inches thick unless the owner can demonstrate that a different application will replicate the pre-disturbance soil moisture holding capacity of the site;
  2. have an organic matter content of 8 to 13 percent dry weight and a pH suitable for the proposed landscaping.

Organic matter content can be achieved by:

- Amending soils on site with compost;
- importing compost-amended soil to the site and mixing it with existing soil;

- importing compost-amended soil and spreading it over the graded areas, or
- scooping native soils with plants intact to a depth of 18 inches, or below the root zone, whichever is deeper, and moving them to a receiving site, or back to the original location.

Topsoil-compost blends imported from offsite should contain from 10 to 30 percent fines passing the number 200 sieve. For best results, subsoils should be scarified to a depth of at least 2 inches in order to avoid stratified soil layers.

These standards do not apply if the cleared or graded area will be covered by an approved impervious surface or incorporated into an approved drainage facility.

## **Water quality protection**

Any person who clears, grades or disturbs a site is required to provide erosion and sediment control that prevents the transport of sediment to wetlands and aquatic resources, drainage facilities or adjacent properties. In addition, from October 1 through April 30, no clearing or grading shall be performed until it has been determined by the director, in writing, that work during this period will comply with the erosion and sediment control performance and implementation requirements of the King County Surface Water Design Manual. In making this determination, the director will consider:

- Slope, soil type, aspect, vegetative cover and proximity of receiving waters;
- Proposed limitations on activities and extent of disturbed areas;
- Proposed erosion and sediment control measures; and
- Natural resource values.

Certain activities are exempt from the seasonal requirements listed above. These include:

- Repair and maintenance of erosion and sediment control facilities;
- Sites with approved, installed ESC facilities that infiltrate 100% of surface water runoff;
- Routine landscape activities of existing single-family residences that do not require a permit; and
- Response to emergencies that threaten the public health, safety or welfare.

Activities that are exempt from these seasonal limitations must still comply with other provisions of this ordinance as well as the development conditions in the CAO.

## **Vegetation management**

On individual lots in the RA Zone, native vegetation shall be retained as follows:

- For lots 1¼ acre or smaller, excluding clearing necessary for access, utilities and onsite septic systems, clearing shall not exceed the greater of:
  1. the amount cleared before January 1, 2005, or cleared under a complete permit application filed before October 25, 2004;
  2. 50 percent of the lot area; or
  3. 7,000 thousand square feet.
- For lots greater than 1¼ acres and up to 5 acres, clearing shall not exceed the greater of:
  1. the amount legally cleared before January 1, 2005, or cleared under a complete permit application filed before October 25, 2004; or
  2. 50 percent of the lot area.
- For lots greater than 5 acres, clearing shall not exceed the greater of:
  1. the amount legally cleared before January 1, 2005, or cleared under a complete permit application filed before October 25, 2004;
  2. 2½ acres; or
  3. 35 percent of the lot area.
- For lots greater than 1¼ acres in either the Bear Creek, Issaquah Creek or May Creek Basins, clearing shall not exceed the greater of:
  1. the amount legally cleared before January 1, 2005 or cleared under a complete permit application filed before October 25, 2004; or
  2. 35 percent of the lot area.

These standards will not apply if more restrictive standards apply through application of the CAO or Special District overlays under K.C.C. 21A.38. Areas set aside for critical areas or buffers may count towards these clearing retention standards. The maximum amount of clearing may also be modified through an approved and current rural stewardship or farm management plan prepared pursuant to K.C.C. 21A.24. These clearing standards will also not apply under the following circumstances:

- Lots within a subdivision or short subdivision that were approved with clearing restrictions that conform to these standards;
- Areas within open space tracts created as part of a subdivision or short subdivision may be credited on a pro-rata basis towards the clearing retention standards for an individual lot within the subdivision or short subdivision;
- Areas encumbered by a utility corridor, or easement for a public road or trail rights-of-way or access easement will not be counted toward the cleared area limit; and
- The minimum clearing necessary to relocate an equestrian trail will not be counted towards the cleared area limit;

Within the urban growth area, conifer trees greater than 8 inches in diameter and deciduous trees greater than 12 inches in diameter shall be retained or replaced. The rate of retention and/or replacement is a function of the intensity of development. Project sites with 25 percent or more of the total gross site area in critical areas, critical area buffers or other areas to be left undisturbed, such as wildlife corridors, are exempt from these urban tree retention standards.