

C. Environment & Critical Areas

C.1 Executive Summary

Standards have been developed for King County (K.C.C. 21A.24) and the City of Maple Valley (MVMC 18.60) to protect critical areas, including geologic hazard areas, critical aquifer recharge areas, wetlands, streams, wildlife habitat conservations areas, and shorelines. A Critical Area Review is required for any development proposal permit application or other request to alter a site that includes critical area, its buffer, or building setback area (BSBL). Critical area tracts are required to be designated on site plans and a Notice on Title of the Critical Area(s) shall be filed on public record. Permanently marking the Critical Areas at the boundary of the critical area tract and contiguous land is also required.

The property associated with this project has a critical aquifer recharge area (CARA), steep slopes (> 40% grade), and Category III wetland mapped on-site. Permitted alterations to Critical Areas and buffers may be allowed if they are in accordance with code, they comply with best management practices (BMPs), and special studies prepared by qualified professionals have been completed.

Several activities and uses are prohibited in critical aquifer recharge areas; however these restrictions should not limit the proposed site development. Steep slopes will be graded pursuant to the appropriate standards. The steep slope analysis is based on GIS data. Further steep slope studies are recommended before development commences to obtain a more accurate analysis of their location.

The onsite wetland was rated as a Category III wetland (Total Score = 34; Habitat Score = 10) using the revised Washington State Rating System for Western Washington. In a High Impact Area inside the King County Urban Growth Area (UGA), Category III wetlands with a Habitat score less than 20 require a standard buffer of 75 feet with a building setback (BSBL) of 15 feet in King County. In the City of Maple Valley the standard buffer is 75 feet with a 15' BSBL. Impacts to the wetland have been avoided; however a trail with a pervious surface is proposed in the buffer. Mitigation and monitoring provisions will be provided. Noxious weed and invasive plant species are proposed to be removed from the buffer area and replanted with native vegetation.

Preserving trees is important for the aesthetic and environmental benefits that they provide. Incentives to protect significant trees and discourage unnecessary land clearing and disturbance promotes compatibility between land use activities and maintaining a natural quality within the built environment.

C. 2 Background

The “Donut Hole” property is located within the Duwamish-Green River Watershed, Water Resource Inventory (WRIA) 9. This watershed is comprised of a number of separate sub-watersheds, with the site being located in the Middle Green River Sub-Watershed. Additional drainage basin information is available in Section E. Public Utilities/Facilities.

C.3 King County Critical Areas Regulations

Critical Areas regulations in King County are described in Chapter 21A.24 of the County’s code, effective January 1, 2005. These standards have been developed to protect critical areas, including geologic hazard areas, critical aquifer recharge areas, wetlands, streams, wildlife habitat conservations areas, and shorelines.

Geographic Information System (GIS) maps of critical areas are available from resources such as King County, the City of Maple Valley, and National Wetlands Inventory (NWI). However, these sources can underestimate the extent of critical areas and field work is necessary to “ground truth” the presence and boundaries so that development impacts can be more accurately assessed and appropriate compensatory mitigation provided.

The property associated with this project has a critical aquifer recharge area (CARA), steep slopes, and wetland mapped on-site. Buffers from off-site Critical Areas do not appear to encumber the site. Washington Department of Fish & Wildlife (WDFW) provided information on Priority Habitats and Species (PHS) in the vicinity of the subject property. Some of this information is considered sensitive and is not available for general distribution. Although there are PHS areas identified on the WDFW maps, on-site development activities should not be affected and seasonal work restrictions should not be imposed.

A Critical Area Review is required by the County for any development proposal permit application or other request to alter a site that includes critical area, its buffer, or building setback area (BSBL). Critical area tracts are required to be designated on site plans and a Notice on Title of the Critical Area(s) shall be filed on public record. The County also requires permanently marking the Critical Areas at the boundary of the critical area tract and contiguous land.

Permitted alterations to Critical Areas and buffers may be allowed if they are in accordance with the County’s code, they comply with best management practices (BMPs), and special studies prepared by qualified professionals have been completed.

Permitted alterations are also subject to State and Federal statutes that regulate jurisdictional wetlands and streams [The Army Corps of Engineers (ACOE) is typically the lead agency on jurisdictional determinations], as well as priority habitats and ESA (Endangered Species Act)-listed plants and animals. Impacts to these environmentally sensitive areas will require approval by the relevant agency; timing to obtain the required permit(s) should be considered as part of the planning process.

Standard mitigation sequencing for development requires 1) avoiding impacts, 2) to minimize the impacts if impacts cannot be avoided, 3) repair or restore impacts, and 4) mitigate for the

impacts by replacing the lost functional performance of the critical area. Therefore, planned development activities should follow this procedure to reduce impacts to on-site Critical Areas and buffers to the maximum extent practicable.

On-site Critical Areas

Critical Aquifer Recharge Areas (CARAs), steep slopes, and one wetland are located on the “Donut Hole” property.

Critical Aquifer Recharge Areas

Category I Critical Aquifer Recharge Areas are “highly susceptible to groundwater contamination and are located within a sole source aquifer or a wellhead protection area (K.C.C. 21A.24.313). King County mapping currently shows that portions of the site are located in a Category 1 CARA wellhead protection area; the site is not within a sole source aquifer. See Figure C.1.

Several activities and uses are prohibited in critical aquifer recharge areas, including underground and above ground storage tanks, and site mining. In addition, the County lists golf courses as one of these activities. However, it should be noted that exceptions are made for expansion of existing uses if it is demonstrated through a special study that the proposed expansion will not negatively impact groundwater quality or recharge. Development standards are outlined in K.C.C. 21A.24.316.

Additional CARA information is available in Section E. Public Utilities/Facilities.

Steep Slopes

A steep slope hazard area in King County is defined as “an area on a slope of forty percent or more within a vertical elevation change of at least ten feet” (K.C.C. 21A.06.1230). Steep slope hazard area development standards are outlined in K.C.C. 21A.24.310. The areas are regulated in order “to eliminate or minimize the risk of property damage or injury resulting from slope instability, landsliding or erosion” [K.C.C. 21A.24.310(B)].

A buffer is required from all edges of the steep slope hazard area, which is determined based on a critical area report prepared by a geotechnical engineer or geologist. If no report is submitted to the County, the minimum buffer is 50 feet. Note: steep slope areas were estimated based on a steep slope analysis prepared by Group Four, Inc. using 5-foot GIS contours provided in a King County GIS dataset. Further studies are recommended before development commences to obtain a more accurate analysis.

Fifteen steep slope areas > 40% with a 10 foot or greater vertical elevation change were identified on the subject property as shown in Figure C.2.

Grading is allowed in steep slopes and their buffers but it is limited to regrading and stabilizing of a slope formed as a result of a legal grading activity (K.C.C. 21A.24.045). Existing grading activities are permitted through approval by the County for project #M44435.

Wetlands

Otak, Inc. provided the mapped wetland information (© 2000), which was georeferenced and digitized by Group Four, Inc. Wetland development standards are outlined in K.C.C. 21A.24.318 through K.C.C. 21A.24.345.

The wetland located onsite was rated using the revised Washington State Rating System for Western Washington. It appears to rate as a Category III wetland (Total Score = 34; Habitat Score = 10), which, inside the Urban Growth Area (UGA), requires a standard buffer of 75 feet in a High Impact area when the Habitat Score is less than 20 points, with a building setback (BSBL) of 15 feet (Figure C.3).

Buffers may be reduced for allowed activities if disturbance minimization actions are used as described in K.C.C. 21A.24.325(A)(3)(b).

Per K.C.C. 21A.24.325(C), buffer averaging may be allowed provided:

- 1) There is equivalent or greater structure and function after the averaging
- 2) The total area of the buffer averaging is equivalent to or greater than before averaging
- 3) The additional buffer is contiguous with the standard buffer
- 4) If the buffer width averaging allows a structure or landscaped area to intrude into the area that was buffer area before averaging, the resulting landscaped area shall extend no more than fifteen feet from the edge of the structure's footprint toward the reduced buffer

All impacts to the wetland have been avoided. Locating a trail in the wetland buffer is an allowed activity. Typically the trail surface should be made using pervious materials; however, public multipurpose trails may be made of impervious materials if they meet all the requirements in K.C.C. chapter 9.12.

Trails in a wetland buffer are also governed by a Public Rule. The trail location shall be located in the outer one-third of the buffer. When a trail in a buffer is proposed, a plan that includes the following should be submitted:

- 1) The location of the proposed trail
- 2) Cross sections of the proposed trail
- 3) Identification of all regulated trees in the area extending twenty feet on either side of the proposed trail bed

Noxious weeds and invasive plants can be removed in the wetland and buffer if removal is undertaken with hand labor including hand-held mechanical tools (unless King County directs otherwise), the cleared area is revegetated with native or noninvasive vegetation and stabilized against erosion and regrowth of the undesirable plants, and herbicides are used in accordance with federal and state laws.

King County Significant Trees ~Tree Retention/Replacement

Building and construction within the Urban Growth Area (UGA) requires tree retention and/or replacement for coniferous trees greater than eight inches in diameter and deciduous trees greater than 12 inches in diameter (K.C.C 16.82.156). Landscaping provisions also promote preserving the aesthetic qualities of communities.

A Tree Retention Plan shall be submitted, which includes an inventory of Significant Trees and trees proposed to be retained or replaced. The ratio of retention and/or replacement is determined based on the intensity of development. Based on the proposed site development, retention is required to be ten trees per acre or five percent of the trees, whichever is greater. Construction standards to protect remaining significant trees are provided in K.C.C 16.82.156(D).

Landscaping provisions in K.C.C. 21A.16 also provide requirements for preserving the aesthetic attributes of communities. Native plant species are encouraged to be used in landscaping because they are typically better adapted to local growing conditions.

C.4 Maple Valley Critical Areas Regulations

Critical Areas regulations in the City of Maple Valley are described in Chapter 18.60 of the City's Critical Areas Regulations of the municipal code effective September 11, 2006. These standards have been developed to protect critical areas, including geologic hazard areas, critical aquifer recharge areas, wetlands, streams, wildlife habitat conservations areas, and shorelines (reserved).

Geographic Information System (GIS) maps of critical areas are available from resources such as the City, King County, and National Wetlands Inventory (NWI). However, these sources can underestimate the extent of critical areas and field work is necessary to "ground truth" the presence and boundaries so that development impacts can be more accurately assessed and appropriate compensatory mitigation provided.

The property associated with this project has critical aquifer recharge area (CARA), steep slopes, and wetland mapped on-site. Buffers from off-site Critical Areas do not appear to encumber the site. Washington Department of Fish & Wildlife (WDFW) provided information on Priority Habitats and Species (PHS) in the vicinity of the subject property. Some of this information is considered sensitive and is not available for general distribution. Although there are PHS areas identified on the WDFW maps, on-site development activities should not be affected and seasonal work restrictions should not be imposed.

A Critical Area Review is required by the City for any development proposal permit application or other request to alter a site that includes critical area, its buffer, or building setback area (BSBL). Critical area tracts are required to be designated on site plans and a Notice on Title of the Critical Area(s) shall be filed on public record. The City also requires permanently marking the Critical Areas at the boundary of the critical area tract and contiguous land.

Permitted alterations to Critical Areas and buffers may be allowed if they are in accordance with the municipal code, they comply with best management practices (BMPs), and special studies prepared by qualified professionals have been completed.

Permitted alterations are also subject to State and Federal statutes that regulate jurisdictional wetlands and streams [The Army Corps of Engineers (ACOE) is typically the lead agency on jurisdictional determinations], as well as priority habitats and ESA (Endangered Species Act)-listed plants and animals. Impacts to these environmentally sensitive areas will require approval by the relevant agency; timing to obtain the required permit(s) should be considered as part of the planning process.

Standard mitigation sequencing for development requires 1) avoiding impacts, 2) to minimize the impacts if impacts cannot be avoided, 3) repair or restore impacts, and 4) mitigate for the impacts by replacing the lost functional performance of the critical area. Therefore, planned development activities should follow this procedure to reduce impacts to on-site Critical Areas and buffers to the maximum extent practicable.

On-site Critical Areas

Critical Aquifer Recharge Areas (CARAs), steep slopes, and one wetland are located on the “Donut Hole” property.

Critical Aquifer Recharge Areas

CARAs are susceptible to groundwater contamination and are located within a sole source aquifer or a wellhead protection area. GIS mapping for the City of Maple Valley currently shows that the entire site is located in a Critical Aquifer Recharge Area wellhead protection area; it is not located in a sole source aquifer. See Figure C.4. Several activities and uses are prohibited in critical aquifer recharge areas, including underground and above ground storage tanks, and site mining. Development standards for the City are outlined in MVMC 18.60.255. Additional CARA information is available in Section E. Public Utilities/Facilities.

Steep Slopes

A steep slope hazard area in the City of Maple Valley is defined as an “area on slopes of forty percent or steeper within a vertical elevation change of at least ten feet” [MVMC 18.60.030(M)]. Steep slope hazard area development standards are outlined in MVMC 18.60.250. The areas are regulated so that the risk of property damage or injury resulting from slope instability, landslides, or erosion is minimized or eliminated. A minimum 50 foot buffer is required from all edges of the steep slope hazard area.

Three steep slope areas > 40% with a 20 foot or greater vertical elevation change were identified on the subject property as shown in Figure C.5. Additional steep slope areas were identified where the grade is 25% within a vertical elevation change of ten feet (Figure C5.1). Note: steep slope areas were estimated based on a steep slope analysis prepared by Group Four, Inc. using 5-foot GIS contours provided in a King County GIS dataset. Further studies are recommended before development commences to obtain a more accurate analysis.

Slopes which are 40 percent or steeper with a vertical elevation change of up to 20 feet are exempt from regulation if no adverse impact will result from the exemption based on the City's review of and concurrence with a soils report prepared by a geologist or geotechnical engineer

(MVMC 18.60.250(E)(1)). Existing grading activities are permitted through approval by the County for project #M44435.

Wetlands

Otak, Inc. provided the mapped wetland information (© 2000), which was georeferenced and digitized by Group Four, Inc. Wetland development standards are outlined in MVMC 18.60.260 through 18.60.300.

The wetland located onsite was rated using the revised Washington State Rating System for Western Washington. It appears to rate as a Category III wetland (Total Score = 34; Habitat Score = 10), which requires a standard buffer of 75 feet, with a building setback (BSBL) of 15 feet (Figure C.6).

Buffers may be reduced by twenty-five feet, subject to City approval, if disturbance minimization actions are used as described in MVMC 18.60.260(E) and (F).

Per MVMC 18.60.260(B), buffer averaging may be allowed provided:

- 1) The total area of the buffer on the site does not decrease
- 2) The minimum buffer width is at least seventy-five percent of the standard width

All impacts to the wetland have been avoided. Locating a trail in the wetland buffer may be allowed if there is a net improvement into the functions of the wetland system, and mitigation and monitoring provisions are implemented [MVMC 18.60.270(2)]. Hazardous substances, pesticides, and fertilizers are not permitted in the wetland and buffer.

Maple Valley Significant Trees ~ Tree Retention/Replacement

In the City of Maple Valley retention and replacement of Landmark and Significant Trees is provided to “preserve and enhance the valuable natural resources and aesthetic character and image” of the city [MVMC 18.40.130(J)]. Tree Protection Areas (TPAs), which stay with the title of the lands, have land use limitations to prevent activities that might harm trees that have been preserved.

Tree retention and replacement is required for Landmark and Significant Trees in the City pursuant to MVMC 18.40.130(J). A Tree Retention Plan is required for any Development Permit. This Plan includes the number of trees and mature canopy coverage calculation of trees existing on the site. Twenty percent mature canopy coverage is required for non-commercial developments. The approved Plan shall provide replacement trees as mitigation for the loss of any significant trees.

When trees need to be planted as mitigation for the loss of Landmark or Significant Trees, sixty percent shall be native conifers. Alternate high-quality landscape design options may be considered when it is not feasible to meet the required canopy coverage.