King County
Local Services

PERMITS

Ecological Critical Area Report Criteria

The purpose of an ecological critical area report is to convey an objective, factual picture of the location, extent, and important characteristics of wetlands, aquatic areas, riparian areas, and protected wildlife habitat at a given site. It must be prepared or overseen by a qualified environmental professional. The report is based on the collection of field data and review of any pertinent background information. The documentation must include applicable field data sheets and rating forms; an accurate map of the site, including wetland boundaries, ordinary high water mark (OHWM) of aquatic areas, and the location of all the data collection points; and a narrative that explains the environmental professional's approach to collecting data as well as their conclusions.

Field Procedures

Environmental professionals shall:

- Evaluate and affirm in writing that the entire project site and surrounding vicinity within a minimum of 300 feet of the project boundaries were examined on the ground (except where access was denied) and whether wetlands, aquatic areas, or protected wildlife habitats are present within these areas, in accordance with King County Code (KCC) Title 21A.
- Uniquely identify the boundaries of each wetland and OHWM of each aquatic area in the field by affixing colored, lettered and numbered flagging to fixed objects such as woody vegetation or survey stakes (e.g., Wetland A, Flags #A1-AX; Wetland B, Flags #B1-BY; Stream Y, Flags #Y1-YZ, etc.). Flagging shall be placed at intervals no greater than 25 feet in wooded areas, up to 40 feet in open areas. Place flagging to be easily readable when agency staff conduct field verification of the delineation.
- Complete data forms and uniquely identify in the field each sample plot site for which data are recorded by affixing colored, lettered and numbered flagging to fixed objects such as woody vegetation or survey stakes. As a rule, large and/or complex sites with broad transition zones are likely to need many sample points to adequately reflect ground conditions, whereas smaller, less complex sites may only need a few sample points.
- For wetlands, examine soils to a depth below the A horizon, or to 18 inches, whichever is greater, per the USACE Wetlands Delineation Manual and Regional Supplement (Western Mountains, Valleys, and Coast Region/ WMVCR). Soil characteristics (e.g., Munsell colors, mottling, oxidized rhizospheres, textures, moisture content, etc.) must be described throughout the entire soil profile examined.

- For aquatic areas, note at minimum what characteristics were used to determine OHWM. Data forms (see references section) are not strictly required but may be beneficial where OHWM is not easily distinguishable.
- Note field observations of sources of hydrology and hydrologic connections between wetlands and aquatic areas, both on-site and off-site, to be shown on the site map and discussed in the report. If a wetland or aquatic area connects to a culvert, the path and both ends of the culvert shall be mapped, and the culvert diameter shall be recorded.
- Classify wetlands into categories using the revised Washington State Wetland Rating System for Western Washington, 2014 Update, Version 2.0, Ecology Publication #23-06-009. A Wetland Rating Form (updated 2023) with figures must be completed for each wetland.
- Classify aquatic areas into types in accordance with KCC 21A.24.355. A stream may need to be divided into multiple reaches for classification if its slope and morphology vary widely between upstream and downstream portions. Where hydrology is known to be perennial or intermittent, it should be noted.
- Take at least two color photographs of each wetland and aquatic area to be included as an appendix to the report.
- Determine the county's required buffer width in KCC 21A.24.325 for each wetland based on its rating, and the required riparian area width in KCC 21A.24.358 for each aquatic area based on its type. For wetland buffers, include an evaluation of whether the buffer may require increased width or revegetation under KCC 21A.24.325.C.1.
- List the dominant species of plants present in each wetland, buffer, and riparian area, as well as in other upland areas. Multiple lists for a single critical area may be necessary if the vegetative communities vary widely.
- Prior to visiting the site, evaluate desktop resources to determine which species, if any, have the potential to breed or hibernate on or within 300 feet of the site. On the site, document any known or potential breeding or hibernating locations observed, such as nests, cavities, or cave entrances. Make note of all wildlife species for which presence or signs were observed on the site, including, but not limited to visual and auditory detection; tracks; scat; egg masses; evidence of foraging; or shed feathers, fur, skin, or antlers. A Permitting ecologist may request a more methodical survey for particular species if necessary to precisely locate a breeding site.
- If proposed clearing limits are known and if a separate arborist report has not been provided, record the location, species, and diameter at breast height (DBH) of all trees with a DBH of three inches or larger within critical areas and associated buffers that are within the proposed clearing limits or within striking distance of the proposed development activity.

Ecological Critical Area Maps

Critical area maps shall show the following information:

1. Reference streets, North arrow and scale.
2. Wetland boundary flags, with flag numbers.
3. Sample points corresponding to field data sheets.
4. Wetland units used for rating purposes.
5. Wetland ratings and standard buffer widths.
6. Ordinary high water mark (OHWM) flags, with flag numbers.
7. Aquatic area types and riparian area widths.
8. Mapped channel migration zones, steep slope hazard areas, landslide hazard areas, and alluvial fan hazard areas, indicating where they affect wetland buffer or riparian area widths. Refer to King County iMap and geological critical area reports.
9. Wildlife habitat networks, including centerline and 150 ft to either side.
10. Floodways and 100-year floodplains if they are mapped or determined by a floodplain study.
11. Shoreline jurisdiction extent for any Type S aquatic areas.
12. Contours at the smallest easily available interval. For large developments, plats and short plats, or where mitigation is proposed, flagged wetland boundaries and OHWM and the numbered sample plots shall be mapped at the 2-foot contour interval following a civil survey conducted by a qualified professional surveyor. Smaller projects such as residential building permits may measure as accurately as possible from identifiable points.
13. Grading in or within 15 feet of a wetland and/or aquatic area (including proposed creation areas) should be shown at the 1-foot contour interval.
14. Stream channels should be shown at whichever of the above contour intervals is appropriate. Additional information about stream channel morphology may be required.
15. Observed hydrologic connections among wetlands or between on-site or off-site streams or other aquatic areas and wetlands.
16. Photo points where photographs of site wetlands and/or aquatic areas were taken.
17. Observed breeding or hibernation sites (known or potential) of any protected wildlife species.

Ecological Critical Area Reports

Critical area reports submitted to the county for review shall contain at a minimum the following:

1. Field data sheets documenting vegetation, soils, and hydrology observations at indicated sample points.
2. Date(s) and weather conditions when the delineation occurred.
3. Colors of flagging to identify critical area boundaries, sample points, and all other civil survey features.

4. Wetland rating form, including figures, for each wetland in the report.
5. OHWM field data forms where necessary to support determinations for any aquatic areas that do not have a well-defined OHWM.
6. Site map(s) showing project vicinity, existing and planned lot lines, existing and proposed roads and trails, existing and planned structures, culverts, stormwater facilities, and utilities, mapped critical areas, and significant trees (where required).
7. Critical area map, as described in the section above.
8. Methodology section. Describe the environmental professional's approach to collecting data and discuss any modification to the standard sampling methodology and rationale. Include a description of how plant dominance was established and why the methodology used was adequate to characterize the vegetation. Include wildlife survey methodology if used for specific species or types of wildlife.
9. Results and discussion section. This must include the rationale for the determination of critical area presence or absence, as well as any wetland boundary, OHWM, or wildlife habitat network or conservation area, and how each was subsequently marked or flagged. The rationale for determining applicable wetland buffers and riparian areas must also be included, including application of KCC 21A.24.325.C.1. This discussion must be supported by the data as documented on the field data sheets and wetland rating forms. Other information to support the environmental professional's conclusions may include a discussion of site topography, the location of plant communities, site land use history, aerial photographs, soil survey mapping and soils descriptions, and unusual site characteristics.
10. For reports supporting proposed development activities**:** Impact Assessment section. The report should provide general information on the development proposal and whether and how critical areas and buffer functions will be adversely affected by the proposed project. More detailed information will be required as part of a mitigation proposal (described in the following section) if the county agrees that critical area or buffer impacts or modifications, including buffer averaging, are unavoidable for an individual proposal.
11. Summary. This section should briefly summarize and conclude the results of the field investigation.
12. Literature cited.

Impact and Mitigation Proposals (can be a separate document or included in the main report)

Impact analyses should include the following:

1. Evaluation of how avoidance and mitigation sequencing, consistent with K.C.C. 21A.24.125, was applied to the development proposal, including depictions and/or descriptions of any alternative project designs that were considered. Alternatives may include changing the location, shape, orientation, or size of a proposed project to reduce impacts or locate them further from a critical area. Indicate if and why alternatives were deemed infeasible.

2. Description of vegetation, habitat, functions, and values of each critical area or buffer that will be eliminated or modified due to the proposed impacts.
3. If buffer averaging or riparian area averaging is proposed, square footage of reduction and addition areas, along with comparison of habitat and functions between those areas.
4. Square footage of direct permanent impacts to each critical area and buffer.
5. Square footage of temporary impacts to each critical area and associated buffer, and estimation of the time required for ecological functions to be restored (*e.g.,* less than 1 year, 1-2 years, more than 2 years).
6. Evaluation of indirect impacts to wetlands in accordance with Wetland Mitigation in Washington State: Part 1 Agency Report and Guidance, Version 2 Washington state Department of Ecology (2021).
7. Description of any critical areas or buffers that have been impacted by existing unpermitted alterations, square footage of impacts, and actions required to restore prior functions.
8. Evaluation of whether the hydrology of any wetlands on or adjacent to the site will be substantially impacted by the project, using the wetland hydrology protection guidelines in the Surface Water Design Manual.
9. If a separate arborist report is not provided: the location, species, and diameter at breast height (DBH) of all trees with a DBH of three inches or larger within critical areas and associated buffers that are within the proposed clearing limits or within striking distance of the proposed development activity. Identify any hazard trees proposed for removal or snagging outside of the project envelope and provide a tree risk assessment form.
10. Site map depicting all proposed impacts in relation to the critical areas and buffers.

Mitigation and restoration plans should include the following:

1. Evaluation of on-site potential for enhancement, rehabilitation, restoration, or creation of critical areas and associated buffers for which mitigation is required.
2. Description of on-site mitigation activities proposed and justification that impacts will be adequately offset to ensure no net loss of critical area functions and values. Where appropriate for wetland mitigation activities, use Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington, Washington state Department of Ecology (2012).
3. Calculation of mitigation area required for permanent impacts, indirect impacts, and long-term temporary impacts, based on the ratios specified within K.C.C. chapter 21A.24.
4. Calculation of restoration area required for short-term temporary impacts (expected functional recovery within 1 year), and any existing unpermitted impacts, if applicable.
5. If buffer averaging or addition is proposed, justification that equal or greater ecological function will be achieved, including any necessary enhancement measures.
6. Site map depicting the areas of all proposed mitigation activities and restoration activities, as well as any required fencing or critical area signs.
7. Total numbers of each proposed species to be planted, and justification if any climate-adaptive species are not expected to occur naturally on the site.

8. Depiction of the proposed species and spacings in the planting plan, as well as temporary irrigation infrastructure, if applicable. Also depict any supplementary actions such as those described in K.C.C 21A.24.380. For large mitigation areas, a sample area representation may be used.
9. If applicable, justification for and description of any proposed off-site mitigation activities. For use of a mitigation bank or in-lieu fee program, provide the location and amount of credits. For all other activities, provide 2-7 above as applicable.
10. Description of proposed measures to protect any wildlife habitat conservation areas on or adjacent to the site, as well as a depiction of where any outdoor lighting will be located and what measures will be used to reduce wildlife impacts.
11. Monitoring schedule of at least 5 years unless otherwise directed by Permitting staff.
12. Success criteria to be met for each scheduled monitoring report.
13. Methods proposed to monitor success criteria progress, such as transects or plots with accompanying photo points. For large mitigation areas requiring multiple sample points, include a depiction on the site plan.
14. Description of proposed maintenance activities and contingency actions if success criteria are not being met.

Standards and References

Wetland Delineation: Wetlands Delineation Manual (1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (WMVCR) (2010), US Army Corps of Engineers

Wetland Rating: Washington State Wetland Rating System for Western Washington Version 2.0 (2014, updated 2023), Washington Department of Ecology

Aquatic Area Delineation: Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State (2010, updated 2016), Washington Department of Ecology

Aquatic Area Typing: King County Code (KCC) 21A.24.355

Wildlife Habitat Network: Refer to the 2024 King County Comprehensive Plan – Wildlife Habitat Network and Public Ownership. This map has been digitized and made available on King County iMap. The WHN extends 150 feet to either side of the depicted centerline. Where the WHN follows a stream or river but is not precisely mapped to the channel, the centerline should be presumed to conform to the centerline of the stream or river.

Wildlife Habitat Conservation Area: Refer to federal and state lists of endangered, threatened, sensitive, and candidate species; KCC 21A.24.382.B-J; and species of local importance listed in the 2024 King County Comprehensive Plan (E-328).

Mitigation Proposals: Critical Areas Restoration and Enhancement guidelines for King County

Other References: King County Department of Local Services, Permitting ; Guidance on Choosing an Ecological Consultant