

CRITICAL AREAS REPORT

Edgewood West Preliminary Plat

Redmond, Washington

November 19, 2014

RAEDEKE ASSOCIATES, INC.

Report To: Mr. Corey Watson
Quadrant Homes
14725 SE 36th Suite 100
Bellevue WA 98006

Title: Critical Areas Report
Edgewood West Preliminary Plat
Redmond, Washington

Project Number: 2013-036-002

Prepared by: RAEDEKE ASSOCIATES, INC.
9510 Stone Avenue North
Seattle, Washington, 98103
(206) 525-8122

Date: November 19, 2014



Project Manager: Christopher W. Wright, B.S.
Principal / Wetland Ecologist

Project Personnel: Richard W. Lundquist, M.S.
Vice President/ Wildlife Biologist

Anne Cline, P.L.A.
Landscape Architect

Submitted by:

Signature

Christopher W. Wright
Printed Name

November 19, 2014

TABLE OF CONTENTS

	Page
LIST OF FIGURES	V
1.0 INTRODUCTION	1
1.1 Purpose	1
1.2 Project Location.....	1
1.3 Project Description	1
2.0 METHODS	2
2.1 Definitions and Methodologies.....	2
2.2 Background Research	3
2.3 Field Reconnaissance.....	4
3.0 EXISTING CONDITIONS.....	6
3.1 General Site Description.....	6
3.2 Wetland.....	6
3.3 Site Habitat Conditions.....	6
3.4 Wildlife.....	7
4.0 REGULATORY CONSIDERATIONS.....	9
4.1 Wetlands	9
4.2 Wildlife.....	9
5.0 IMPACTS	11
5.1 Impacts to Vegetation	11
5.2 Impacts to Wildlife	11
5.3 Impacts to the Wetland Buffer.....	12
6.0 MITIGATION.....	14
6.1 Avoidance and Minimization	14
6.2 Compensatory Mitigation.....	15
7.0 LIMITATIONS.....	16
8.0 LITERATURE CITED	17
FIGURES.....	21

TABLE OF CONTENTS (Cont'd)

	Page
APPENDIX A: Sample Plot Data Sheets	A-1
APPENDIX B: Wetland Summary Sheet	B-1
APPENDIX C: Wetland Summary Sheet and Habitat Assessment Form	C-1
APPENDIX D: Redmond Maps	D-1

LIST OF FIGURES

Figure		Page
1.	Regional and Vicinity Map.....	22
2.	King County iMap	23
3.	Edgewood West Property Existing Conditions.....	24
4.	Edgewood West Property Site Plan & Buffer Averaging Plan.....	25

1.0 INTRODUCTION

1.1 PURPOSE

Raedeke Associates, Inc. was retained by Quadrant Homes to provide a critical areas evaluation of the proposed Edgewood West project site, including a wetland delineation and wildlife habitat evaluation. The report presents the findings of our background information review, June 6, 2013 April 2, 2014, and May 28, 2014 site investigations of the project site, and associated avoidance, minimization and mitigation measures related to the site wetland and buffer. The report follows the City of Redmond critical areas reporting requirements (City of Redmond 2014). The report also provides a summary of mitigation measures that are to be implemented to compensate for identified impacts to the wetland buffer.

1.2 PROJECT LOCATION

The Edgewood West project area is an approximately 11.5-acre irregularly shaped parcel located along the east side of 172nd Avenue NE, north of NE 120th Way in the City of Redmond, Washington. This places the property in a portion of Section 25, Township 26 North, Range 5 East, W.M. (Figure 1). Parcel maps retrieved from King County (2014) iMap depict the property boundaries.

1.3 PROJECT DESCRIPTION

The proposed Edgewood West project would involve developing the parcel into 51 single-family residential lots. Primary access to the lots would be provided by extending NE 122nd Street between 172nd Avenue NE and 176th Avenue NE. Buffer averaging is proposed along the margins of the wetland located in the western portion of the site. The proposed site plan and buffer averaging plan are provided in Figure 4.

2.0 METHODS

2.1 DEFINITIONS AND METHODOLOGIES

Wetlands and streams are protected by federal law as well as by state and local regulations. Federal law (Section 404 of the Clean Water Act) prohibits the discharge of dredged or fill material into “Waters of the United States,” including certain wetlands, without a permit from the U.S. Army Corps of Engineers (COE 2012). The COE makes the final determination as to whether an area meets the definition of a wetland and whether the wetland is under their jurisdiction.

2.1.1 Wetland Investigation

The COE wetland definition was used to determine if any portions of the project area could be classified as wetland. A wetland is defined as an area “inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (Federal Register 1986:41251).

We based our investigation upon the guidelines of the U. S. Army Corps of Engineers (COE) Wetlands Delineation Manual (Environmental Laboratory 1987) and subsequent amendments and clarifications provided by the COE (1991a, 1991b, 1992, 1994), as updated for this area by the regional supplement to the COE wetland delineation manual for the Western Mountains, Valleys, and Coast Region (COE 2010). The COE wetlands manual is required by state law (WAC 173-22-035, as revised) for all local jurisdictions, including the City of Redmond. Hydrophytic vegetation is defined as “macrophytic plant life growing in water, soil or substrate that is at least periodically deficient in oxygen as a result of excessive water content” (Environmental Laboratory 1987). The U.S. Army Corps of Engineers National Wetland Plant List wetland indicator status (WIS) ratings were used to make this determination (Lichvar and Kartesz 2009). The WIS ratings “reflect the range of estimated probabilities (expressed as a frequency of occurrence) of a species occurring in wetland versus non-wetland across the entire distribution of the species” (Reed 1988:8). Plants are rated, from highest to lowest probability of occurrence in wetlands, as obligate (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and upland (UPL), respectively. In general, hydrophytic vegetation is present when the majority of the dominant species are rated OBL, FACW, and FAC.

A hydric soil is defined as “a soil that is formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part” (Federal Register 1995: 35681). The morphological characteristics of the soils in the study area were examined to determine whether any could be classified as hydric.

According to the 1987 methodology, wetland hydrology could be present if the soils were saturated (sufficient to produce anaerobic conditions) within the majority of the rooting zone (usually the upper 12 inches) for at least 5% of the growing season, which in this area is usually at least 2 weeks (COE 1991a). It should be noted, however, that areas having saturation to the surface between 5% and 12% of the growing season may or may not be wetland (COE 1991b). Depending on soil type and drainage characteristics, saturation to the surface would occur if

water tables were shallower than about 12 inches below the soil surface during this time period. Positive indicators of wetland hydrology include direct observation of inundation or soil saturation, as well as indirect evidence such as drift lines, watermarks, surface encrustations, and drainage patterns (Environmental Laboratory 1987). Hydrology was further investigated by noting drainage patterns and surface water connections between wetlands and streams within and adjacent to the project area.

2.2 BACKGROUND RESEARCH

2.2.1 Wetlands

In preparation for our site investigation, we collected and analyzed background information available for the site prior to the on-site investigation. We collected maps and information from the U.S.D.A Natural Resources Conservation Service (2014) Web Soil Survey and U.S. Fish and Wildlife Service (USFWS 2014) National Wetland Inventory on-line mapper, and the King County (2014) iMap.

The King County (2013) iMap revealed a mapped palustrine, forested wetland occupying the western one-third of the Edgewood West property, based on previous mapping by the USFWS National Wetland Inventory (Figure 2). The USDA NRCS (2014) Soil maps list the entirety of the property as having Alderwood series soil, a non-hydric soil.

2.2.2 Wildlife

We also accessed the online priority habitats and species (PHS) database maintained by Washington Department of Fish and Wildlife (WDFW 2014a) for documented information on the potential occurrence of federal- or state-listed endangered, threatened, sensitive, candidate, other priority, or monitor wildlife species (hereafter “species of concern”), or priority habitats on the project site and vicinity. State priority species are defined as those fish and wildlife species “requiring protective measures and/or management actions to ensure their survival”, and State priority habitats are defined as habitat types “with unique or significant value to many species” (WDFW 2008). We also reviewed database information maintained by the Washington Natural Heritage Program (2014) for occurrence of endangered, threatened, and sensitive plants in the vicinity of the project site.

Reference lists maintained by WDFW (2008) were consulted for information on the status of wildlife species of concern that could use the site during at least some part of the year. Species accounts and management recommendations provided by WDFW (e.g., Rodrick and Milner 1991, Larsen 1997, Azerrad 2004, Larsen et al. 2004) were consulted to determine habitat associations of such species and to evaluate the likelihood of their occurrence on the project site. During the field investigation, we searched for the presence of these species, or signs thereof, which could be found on the property.

The WDFW (2014) PHS database map shows no occurrences of species of concern, including endangered, threatened, sensitive, or other priority species or habitats on or adjacent to the project site. The City of Redmond’s (2005) map of core preservation areas shows no mapped fish and wildlife habitat conservation areas on the project site or immediate vicinity. The Washington Natural Heritage Program (2014) database contains no records of Natural Heritage

Features (e.g., listed plant species or Natural Heritage wetlands) in the section in which the project site occurs.

2.3 FIELD RECONNAISSANCE

2.3.1 Wetlands

An initial field reconnaissance was conducted on June 6, 2013 to search the site for the presence of wetlands and streams and characterize general site conditions. A second visit was conducted on April 2, 2014 in response to City of Redmond concerns that there were wetland areas on the site that had not been identified. A third visit to the site with City and WDOE staff, on May 28, 2014 resulted in the delineation of a small wetland located in the western portion of the site.

Vegetation, soils, and hydrology were examined in representative portions of the study area according to the procedures described in the Regional Supplement (COE 2010). Plant communities were inventoried, classified, and described during our field investigation. We estimated the percent coverage of each species. Plant identifications were made according to standard taxonomic procedures described in Hitchcock and Cronquist (1976), with nomenclature as updated by the U.S. Army Corps of Engineers National Wetland Plant List (Lichvar and Kartesz 2009). Wetland classification follows the USFWS wetland classification system (Cowardin et al. 1992). We determined the presence of a hydrophytic vegetation community using the procedure described in the Regional Supplement (COE 2010), which requires the use of the dominance test, unless positive indicators of hydric soils and wetland hydrology are also present, in which case the prevalence index or the use of other indicators of a hydrophytic vegetation community as described in the Regional Supplement (COE 2010) may also be required.

We excavated pits to at least 18 inches below the soil surface, where possible, in order to describe the soil and hydrologic conditions throughout the study area. We sampled soil at locations that corresponded with vegetation sampling areas and potential wetland areas. Soil colors were determined using the Munsell Soil Color Chart (Munsell Color 2009). We used the indicators described in the Regional Supplement (COE 2010) to determine the presence of hydric soils and wetland hydrology.

2.3.2 Wildlife

During the field investigations, we documented wildlife presence, sign, and habitat while inventorying and describing plant communities. We recorded information regarding reproduction, habitat use, and activities of all wildlife species observed. In addition, we noted special habitat features such as large and/or hollow trees, snags [standing dead or partly dead trees at least 4 inches diameter at breast height (dbh) and 6 feet tall], and large down logs. Historic and present land-use of the site and immediate vicinity were noted from direct observations in the field and analysis of aerial photographs.

During our field surveys, we also searched specifically for the presence, sign, or habitats of any wildlife species of concern that may occur on the project site or vicinity. In particular, we

searched for the presence of large stick-type nests, hollow trees, tree cavities, and pileated woodpecker foraging sign. Large stick nests are built and used by several species of concern, including bald eagles and great blue herons. Tree cavities are created and used by woodpeckers, including species of concern such as the pileated woodpecker, and can provide habitat for a host of bird and mammal species, including species of concern such as purple martins, various cavity-nesting duck species, and various bats. Hollow trees are used as daytime roost for priority species including various bat species, as well as Vaux's swifts.

3.0 EXISTING CONDITIONS

3.1 GENERAL SITE DESCRIPTION

The Edgewood West property is an undeveloped parcel that appears to have been previously used as a single family home and possibly pasture. An access drive enters the site from the northwest corner into a deciduous forest vegetation community. Central portions of the site are primarily shrub community and contain what appears to be a building foundation. The eastern portion of the site contains a mixed coniferous and deciduous forest plant community.

During our site investigation on May 28, 2014 we identified and delineated a wetland on the property.

3.2 WETLAND

Raedeke Associates, Inc. delineated a closed depressional wetland in the western portion of the site on May 28, 2014. The wetland has a black cottonwood (*Populus balsamifera*) canopy over a black hawthorn (*Creatagus douglasii*) shrub layer. Soils are very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) loam and sandy loam with distinct dark yellowish brown (10YR 4/6) mottles. The areas was inundated during our April 2014 site visit and was saturated at 10 inches below the ground surface on May 28, 2014. Sample plot data is presented in Appendix A.

The wetland is a Category IV system according to the Washington Department of Ecology's (WDOE) Wetland Rating System for Western Washington (publication #04-06-025) (Hruby 2004, as revised 2006, and WDOE 2008). The wetland received 27 total points, 9 points for habitat functions.

3.3 SITE HABITAT CONDITIONS

Vegetation in the western part of the site consists of a red alder (*Alnus rubra*) and black cottonwood (*Populus balsamifera*) canopy over a shrub layer of Himalayan blackberry (*Rubus ameniacus*), Indian plum (*Oemleria cerasiformis*), and Douglas spirea (*Spirea douglasii*). The central portion of the site has a few scattered red alder trees and is dominated by Himalayan blackberry. The eastern portion of the site is a mixed deciduous and coniferous forest dominated by big-leaf maple (*Acer macrophyllum*) and Douglas fir (*Pseudotsuga menziesii*). The understory consisted of dense tall shrub cover that varied in composition, ranging from dense stands of vine maple (*Acer circinatum*) and salmon raspberry (*Rubus spectabilis*), to areas dominated almost exclusively by Himalayan blackberry (*Rubus ameniacus*). Low cover included stinging nettle (*Urtica dioica*), reed canarygrass (*Phalaris arundinacea*), trailing blackberry (*Rubus ursinus*), sword fern (*Polystichum munitum*), and lady fern (*Athyrium filix-femina*).

The soils observed on the site are generally consistent with the Alderwood series mapped for the site, with brown to dark brown (10YR 4/3 to 10YR 4/2) subsoil and without redoximorphic features or any indicators of hydric soil conditions.

We observed at least one snag 30 feet tall and greater than 8 inches in diameter in the eastern portion of the site, as well as a number of downed logs of greater than 6 inches diameter. Woodpecker foraging excavations were also noted on at least one of these features.

3.4 WILDLIFE

3.4.1 Wildlife Use and Observations

A wide variety of wildlife species may be expected to inhabit lowland deciduous or mixed forest communities in the Pacific Northwest, such as that found on the project site. Of the more than 300 vertebrate wildlife species expected to occur in west side forests of Oregon and Washington, over 230 species occur within west side lowland mixed coniferous and deciduous forests (Johnson and O'Neil 2001). A more limited number of species are expected to occur within lowland deciduous or mixed forests of western Washington, particularly King County: over 80 species, nearly 60% of which are birds, about 25% are mammals, and the rest are amphibians and reptiles (King County 1987). The number of species expected to inhabit a particular forest stand depends on its size, landscape context, and surrounding uses. Relatively small stands such as that on the Edgewood West property that are surrounded by urban residential uses, would be expected to support a more limited number of wildlife species. Those that do occur there may be further adversely affected by surrounding human activity and predation or other influences from urban-adapted species (such as crows and starlings), or other invasive species.

We observed relatively few wildlife species or their sign during our field reconnaissance visits. Our field visits were conducted during summer and spring (June, April, and May), during the breeding season for birds. As noted above, we also saw sign of past foraging activity by pileated woodpeckers and other small woodpecker species (likely hairy or downy woodpeckers). The number of species that we observed is also likely limited by the relatively small size of the site and the surrounding suburban land uses. Species observed primarily include those adapted to Puget Sound lowland mixed forest, as well as those that can persist in fragmented forest habitat and/or residential areas.

A variety of other bird species are likely to inhabit the site and vicinity at different times of the year. Many of these are spring and summer residents that migrate out of the area for the fall and winter, as well as year-round residents. We observed no raptors (eagles, hawks, falcons, or owls) during our field reconnaissance, and no raptor nests were found on any of the trees within the site. Most of the larger trees had intact tops and lacked appropriate branching structures to support large raptor nests such as bald eagles.

We observed no mammals or their sign during our field reconnaissance. Several species of small and medium-sized mammals likely use the site, though many are secretive and/or nocturnal and are therefore unlikely to be observed during a general site reconnaissance. The down woody debris was widely scattered the site, and although limited in extent, along with areas of dense areas of shrub and ground cover, provide potential cover and breeding habitat for small mammals. In addition, on-site trees and snags provide potential cover and breeding locations for medium-sized mammals such as raccoons and squirrels. The presence of domestic dogs and cats in the area may limit the suitability of the forest on site, as they can act as highly effective predators on native wildlife species in urban and suburban areas, particularly those that nest or inhabit the ground (Penland 1984, Maestas et al. 2003, Odell and Knight 2001, Leu et al. 2008).

We did not observe any reptiles, amphibians, or their sign during our field reconnaissance, though a small number of species of each group is likely to be present. The minimal amount of down woody debris on the site may limit the number of Puget Sound lowland terrestrial-breeding amphibians that could occupy the site. Amphibians would most likely be expected to center activities to the wetland on site. Potential cover and foraging habitat is present on the site for some reptiles, including garter snakes, and some amphibians.

3.4.2 Endangered, Threatened, Sensitive, or Other Priority Species

We observed no species listed as endangered, threatened, or sensitive within the project site or immediate vicinity, nor are any of these species considered to have a primary association with the project site. As noted above, sign of previous foraging by pileated woodpecker, a state candidate species, was observed in snags on site, but none of this sign appeared to be fresh (i.e., occur since at least this last fall or winter). No snags appeared to be large and tall enough to provide suitable nesting or roosting habitat for pileated woodpeckers. No other priority or other species of concern were observed or likely to occur within the project site.

3.4.3 Wildlife Habitat Movement Corridors and Networks

Wildlife habitat networks or corridors can take different forms, depending on the landscape. Corridors can be in the form of hedgerows or fencerows connecting woodlots in an agricultural landscape. In a fragmented forested landscape, corridors are linear patches of forest or forested riparian zones connecting larger patches of forest. They can also be non-forested linear patches, such as utility easements, or wetland and stream systems, in a landscape that is forested. In an urbanizing environment, open space or native forestland can act as corridors connecting otherwise disjunct habitat for wildlife species.

Corridors can provide (1) habitat for certain species; (2) movement pathways; (3) extensions of foraging ranges for large, wide-ranging species; and (4) escape from predators (Harris 1984, Levenson 1981, Noss 1987, Noss and Harris 1986, Simberloff and Cox 1987). Corridors may also have disadvantages, such as (1) providing conduits for disease, fire, pests, and exotic species; (2) increasing exposure to predation; and, (3) potentially having negative genetic impacts on a population (Noss 1987, Simberloff and Cox 1987).

The Edgewood West property is situated generally within a larger area of residential development. The forested habitat of the site is contiguous with similar forest stands that extend off site to the east, and for a short distance to the north, but are highly fragmented by existing development in the area. Because of the surrounding development, these habitats are relatively isolated from other native habitats within the City of Redmond and therefore do not provide unbroken linkages to other such habitats. This also is evident on the City of Redmond (2005) Fish and Wildlife Habitat Conservation Areas (Core Preservation Areas) map, none of which are located near the site. The site scored a total of 15 points on the City of Redmond Habitat Unit Assessment Form (attached in Appendix C).

4.0 REGULATORY CONSIDERATIONS

4.1 WETLANDS

Wetlands are protected by Section 404 of the Federal Clean Water Act and other state and local policies and ordinances including the City of Redmond (2014) code.

The City of Redmond (2014) regulates wetlands under Chapter 21.64 of its Zoning Code (RZC). The city classifies wetlands as Category I, II, III, or IV based on the Washington Department of Ecology's (WDOE) Wetland Rating System for Western Washington (publication #04-06-025) (Hruby 2004, as revised 2006, and WDOE 2008). The City of Redmond (2014) determines wetland buffer widths based on their classifications. Standard buffer widths may be modified by averaging or be increased, on a case by case basis by the City of Redmond.

The wetland met criteria for Category IV rating based on a total score for wetland functions of 27 total points. The wetland also had a score of 9 points for habitat functions. The wetland did not meet criteria for Category I rating because it had a total function score of less than 70 points, and it did not have special characteristics such as the presence of old growth or mature forest greater than 1 acre in area or the presence of a bog vegetation community. The WDOE rating form is found in Appendix B.

Under City of Redmond (2014) regulations, Category IV wetlands are provided a buffer of 50, 40 or 25 feet depending upon the intensity of adjoining land use. Because the proposal is to develop the site as a subdivision with density greater than 1 unit per acre the intensity of the adjoining land use is high and a standard 50-foot-wide buffer would be required.

4.2 WILDLIFE

4.2.1 State of Washington

State law provides protections for wildlife species listed as endangered (WAC 232-12-014), as well as threatened, sensitive, or "other protected" species (WAC 232-232-011). Recently, bald eagles have been down-listed to "sensitive" at the State and de-listed at the federal level. However, in Washington, bald eagles are still protected by the Bald Eagle Protection Act of 1984 (RCW 77.12.655), and the Bald Eagle Protection Rules (WAC 232-12-292). The Bald Eagle Protection rules have been recently amended such that state bald eagle management plans are no longer required unless bald eagles are listed as Threatened or Endangered in Washington State.

The WDFW (2012) PHS and HRTG databases show no known nest or roost sites of eagles or other listed raptor species (such as hawks or owls) in the vicinity of the project site. In addition, we found no raptor nests or potentially suitable nest trees on the project site or in the vicinity.

In addition, the WDFW (2008) has developed management recommendations for "species of concern," which include state listed and other priority species, as well as priority habitats. Occurrences or signs of priority species or habitats in the vicinity of the project site are noted above.

4.2.2 City of Redmond

Redmond (2014) regulates wildlife habitat as “Fish and Wildlife Habitat Conservation Areas” (hereafter, FWHCA’s) under Chapter 21.64 of its Zoning Code (RZC). The Redmond Zoning Code generally identifies the following as FWHCA’s: (1) federal endangered and threatened species, (2) state endangered, threatened, sensitive, and state candidate species, (3) WDFW priority habitats and species, (4) Habitats and Species of Local Importance, which in Redmond are identified as great blue herons, (5) natural ponds less than 20 acres in size, (6) waters of the state, (7) lakes, ponds, streams, and rivers planted with game fish, and (8) land essential for preserving connections between habitat blocks and open spaces.

As noted above, no federal or state endangered, threatened, or sensitive species were observed on site, nor are they considered to inhabit or have a primary association with the site. The only terrestrial priority species known to occur on site was the pileated woodpecker (a state candidate species), primarily from foraging excavations that appeared to be relatively old. No fresh sign was observed, and none of the snags found on site appeared to be large enough to provide suitable nesting habitat for this species. We found no evidence of use of the site by great blue herons, which are identified as a species of local importance by the City.

5.0 IMPACTS

The following discussion of wetland impacts below is based on our review of site plans provided to us by H.G. Goldsmith and Associates, Inc, received September 29, 2014.

5.1 IMPACTS TO VEGETATION

Residential housing and an associated access road would be developed across the property. The proposed development would remove most of the forest habitat, as well as the open shrub area, on the site. The wetland and averaged buffer would be retained in the western portion of the property. Thus, no direct impact to the wetland would occur as a result of the proposed development. The proposed development would thus increase fragmentation of the remaining forest habitat and increase the amount of artificial edges with adjoining single-family residential areas.

5.2 IMPACTS TO WILDLIFE

Direct alteration (reduction) to the distribution, composition, and amount of native vegetation resulting from the proposed residential development would affect the distribution and composition of native wildlife on the property. In addition, indirect impacts to habitat retained on-site would make it less suitable for some species of wildlife currently inhabiting the site.

Upon completion, the proposed residential development would reduce the forest habitat available for native wildlife on the site. This would reduce the local populations of most native species on the property. Grading and construction activities associated with the proposed development, as well as increased levels of human activity on-site, would also result in increased short- and long-term disturbance to wildlife species using the retained habitat areas. This would further reduce the suitability of the on-site habitats to some wildlife species, particularly those vulnerable to predation by domestic cats and dogs (Penland 1984). Some species adapted to urban environments and fringes, including many non-native plant and animal species, would find suitable habitat on-site, and may become established and/or increase in numbers. Some species less adapted for urban environments, however, would be expected to decrease in numbers, and some wildlife species may be eliminated from the site entirely.

Impacts to Endangered, Threatened, Sensitive, or Other Priority Species or Habitats

Because endangered, threatened, and sensitive wildlife species are not known or likely to occur on or in the site or have a primary association with any impacted habitats, no impacts to these species are expected. The proposed development is not expected to have a substantial adverse impact on pileated woodpeckers, however, as they do not appear to be foraging there currently, and none of the snags on site appear to be suitable for nesting or roosting. In addition, the Edgewood West property is small compared to the large home ranges (more than a square mile) typically occupied by pileated woodpeckers (Lewis and Azerrad 2004), and thus does not likely represent a significant portion of the habitat areas used by pileated woodpeckers in the vicinity. No other terrestrial priority species, or species of local importance, are known or likely to inhabit the site. Thus, the proposed development would not adversely affect such species.

The proposed site plan would retain the Category IV wetland and buffer as native open space. The site contains no other habitats designated as fish and wildlife conservation areas, so the proposed development would not affect such habitats. Consequently, no habitats or habitat features known or suspected to be used by other priority species or species of local importance would be affected by the proposed site plan.

5.3 IMPACTS TO THE WETLAND BUFFER

The wetland and an averaged buffer would be retained in the western portion of the property. Thus, no direct impact to the wetland would occur as a result of the proposed development.

The proposed site plan includes a minor amount of buffer averaging to the required wetland buffers to accommodate lot clearing and grading (Figure 4). The proposed buffer encroachment totals 425 square feet primarily along the northern and southern portions of the wetland for roadways. As compensation, an additional 425 square feet of buffer would be provided along the western side of the wetland (Figure 4).

The City of Redmond (2014) allows wetland buffer averaging, subject to the following criteria:

7. *Wetland Buffer Width Averaging. Wetland buffer widths may be modified by averaging buffer widths as set forth herein. The Department may allow modification of the standard wetland buffer width in accordance with the best available science on a case-by-case basis by averaging buffer widths. Averaging buffer widths may only be allowed where a qualified wetland professional demonstrates that:*
 - a. *It will not reduce the functions or values;*
 - b. *The wetland contains variations in sensitivity due to existing physical characteristics or the character of the buffer varies in slope, soils, or vegetation, and the wetland would benefit from a wider buffer in places and would not be adversely impacted by a narrower buffer in other places;*
 - c. *The total area contained in the buffer area after averaging is no less than that which would be contained within the standard buffer; and*
 - d. *The buffer width is not reduced more than 25 percent of the width or 50 feet, whichever is less, except for buffers between Category IV wetlands and low- or moderate-intensity land uses.*

Specifically, the proposed buffer averaging plan meets the City of Redmond (2014) requirements listed above in the following ways:

- a. The buffer width averaging will not reduce the functions or values of the wetland as it largely retains the forest and shrub cover that provides screening to the wetland, provides additional functional buffer to the northwest of the wetland, and is limited to less than 500 square feet.
- b. The buffer areas to be encroached upon have previously been cleared and do not provide the same level of buffer function as the areas to be retained.
- c. The total area of functional buffer within the averaged buffer exceeds the area contained in the standard buffer.
- d. The buffer width is not reduced by 25% or 50 feet.
- e. With formal designation of the wetland and associated buffers in an open space tract with covenants restricting allowed uses, we would expect an equivalent to incremental increase in ecological functioning, compared with standard buffers. The buffer compensation area consists of deciduous forest of comparable functioning as the encroachment area.

6.0 MITIGATION

Mitigation has been defined by the State Environmental Policy Act (SEPA) (WAC 197-11-768; cf. Cooper 1987), and more recently in a Memorandum of Agreement between the Environmental Protection Agency and the U.S. Army Corps of Engineers (Anonymous 1989). In order of desirability, mitigation may include:

1. **Avoidance** - avoiding impacts by not taking action or parts of an action;
2. **Minimization** - minimizing impacts by limiting the degree or magnitude of the action and its implementation;
3. **Compensation** - which may involve:
 - a) repairing, rehabilitating, or restoring the affected environment;
 - b) replacing or creating substitute resources or environments;
 - c) mitigation banking.

6.1 AVOIDANCE AND MINIMIZATION

Conversion of the Edgewood West property to a residential development would incorporate one or more mitigating measures that would avoid or reduce impacts to on-site habitat.

The proposed development plan for the Edgewood West property would establish an open space tract encompassing the Category IV wetland and buffer (Figure 4). The proposed development plan incorporates a number of other design features that would avoid or minimize impacts to the retained areas and off-site habitats:

- Direct impacts to the on-site Category IV wetland would be avoided;
- The forested buffer would retain a portion of the forested habitat on site; The limits of the buffer tract would be clearly marked with fencing and critical area signage per City of Redmond requirements;
- No residential structures, impervious surfaces, or trails would be located within the designated open space tract;
- The proposed development would route the majority of stormwater runoff to a detention facility to provide water quality treatment;
- Temporary erosion and sediment control (TESC) measures would be installed during construction and would utilize appropriate best management practices (BMPs) designed to prevent sediment deposition to on-site open space tracts and off-site areas;

6.2 COMPENSATORY MITIGATION

As outlined above, the proposed site plan includes buffer averaging on the Category IV wetland. The buffer averaging includes additional buffer area to compensate for proposed buffer encroachments. The buffer compensation is discussed more fully in Section 5 above (see Figure 4).

Additional areas of buffer would be left in their natural condition, providing screening to the wetland.

7.0 LIMITATIONS

We have prepared this report for the exclusive use of Quadrant Homes and its consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from Quadrant Homes.

The determination of ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. With regard to wetlands, the final determination of their boundaries for regulatory purposes is the responsibility of the various agencies that regulate development activities in wetlands. We cannot guarantee the outcome of such determinations. Therefore, the conclusions of this report should be reviewed by the appropriate regulatory agencies.

We warrant that the work performed conforms to standards generally accepted in our field, and prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponent and their consultants, together with information gathered in the course of the study. No other warranty, expressed or implied, is made.

8.0 LITERATURE CITED

- Anonymous. 1989. Memorandum of Agreement between the U.S. Environmental Protection Agency and the Department of Army Concerning the Determination of Mitigation under the Clean Water Act, Section 404 B1 Guidelines. Effective 7 November 1989.
- Azerrad, J.M., editor. 2004. Management recommendations for Washington's priority species, Volume V: mammals. Washington Department of Fish and Wildlife, Olympia, Washington.
- Cooper, J.W. 1987. An overview of estuarine habitat mitigation projects in Washington State. Northwest Environmental Journal 3(1): 112-127.
- Cowardin, L., F. Golet, V. Carter, and E. LaRoe. 1992. Classification of wetlands and deepwater habitats of the United States. U.S.D.I. Fish and Wildlife Service Publ. FWS/OBS-79/31. 103 pp.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineers Waterways Experiment Station, Vicksburg, Mississippi. 100 pp.
- Federal Register. 1986. 40 CFR Parts 320 through 330: Regulatory programs of the Corps of Engineers; final rule. Vol. 51. No. 219. pp. 41206-41260, U.S. Government Printing Office, Washington, D.C.
- Federal Register. 1995. U.S. Department of Agriculture, Soil Conservation Service: Changes in Hydric Soils of the United States. Volume 59, No 133, July 13, 1994. Revised September 15, 1995.
- Harris, L.D. 1984. The fragmented forest: island biogeographic theory and the preservation of biotic diversity. University of Chicago Press. Chicago, Illinois. 210 pp.
- Hitchcock, C., and A. Cronquist. 1976. Flora of the Pacific Northwest. Univ. of Washington Press, Seattle, Washington. 730 pp.
- Johnson, D.H., and T.A. O'Neil. 2001. Wildlife habitat relationships in Oregon and Washington. Oregon State University Press, Corvallis, OR. 736 pp.
- King County. 1987. Wildlife habitat profile. King County Open Space Program. Parks, Planning and Resources Development. Seattle, Washington. 111 pp.
- King County. 2014. iMAP GIS Interactive map center, King County, Washington. http://www.metrokc.gov/gis/iMAP_main.htm#. Accessed July 11, 2014.

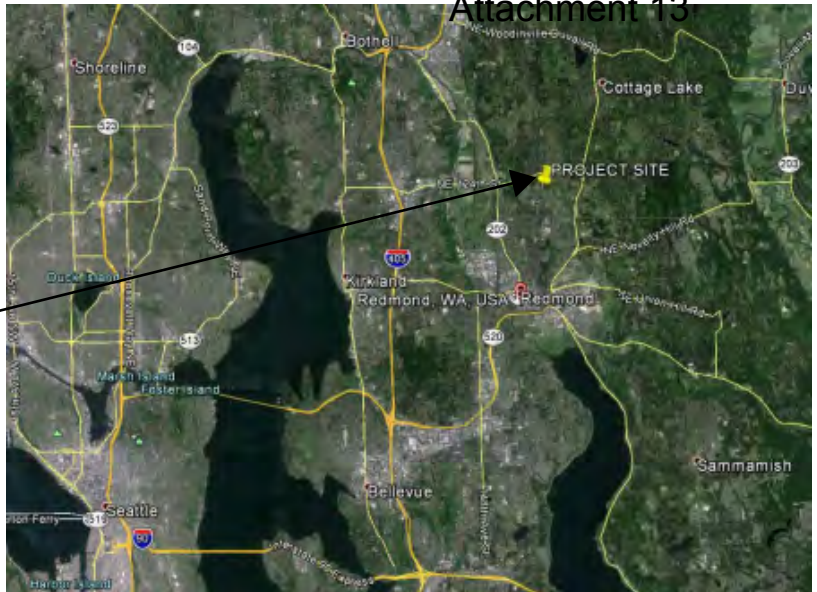
- Larsen, E.M., editor. 1997. Management recommendations for Washington's priority species, Volume III: amphibians and reptiles. Washington Department of Fish and Wildlife, Olympia, Washington. 122 pp.
- Larsen, E.M., J.M. Azerrad, and N. Nordstrom, editors. 2004. Management recommendations for Washington's priority species, Volume IV: Birds. Washington Department of Fish and Wildlife, Olympia, Washington. 268 pp.
- Leu, M., S.E. Hanser, and S.T. Knick. 2008. The human footprint in the West: a large-scale analysis of anthropogenic impacts. *Ecological Applications* 18:1119-1139.
- Levenson, J.B. 1981. Woodlots as biogeographic islands in southeastern Wisconsin. In: Burgess, R.L., and D.M. Sharpe, eds. *Forest island dynamics in man-dominated landscapes*. New York, New York: Springer-Verlag.
- Lewis, J.C., and J.M. Azerrad. 2004. Pileated woodpecker (*Dryocopus pileatus*). Pages 29-1 to 29-9 in E.M. Larsen, J.M. Azerrad, and N. Nordstrom, editors. *Management Recommendations for Washington's Priority Species, Volume IV: Birds*. Available at <http://wdfw.wa.gov/publications/00026/wdfw00026.pdf>
- Lichvar, Robert W. and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC.
- Maestas, J.D., R.L. Knight, and W.C. Gilgert. 2003. Biodiversity across a rural land-use gradient. *Conservation Biology* 17:1425-1434.
- Munsell Color. 2009. Munsell soil color charts. Munsell Color, Grand Rapids, MI.
- Noss, R.F. 1987. Corridors in real landscapes: a reply to Simberloff and Cox. *Conservation Biology* 1:159-164.
- Noss, R.F., and L.D. Harris. 1986. Nodes, networks, and MUMs: preserving diversity at all scales. *Environmental Management* 10:299-309.
- Odell, E.A., and R.L. Knight. 2001. Songbird and medium-sized mammal communities associated with exurban development in Pitkin County, Colorado. *Conservation Biology* 15:1143-1150.
- Penland, S. 1984. Avian response to a gradient of urbanization. PhD. Dissertation, University of Washington, Seattle, Washington. 407 pp.

- Redmond, City of. 2005. Fish and Wildlife Habitat Conservation Areas (Core Preservation Areas) Critical Areas Map. Effective May 28, 2005. Redmond, WA.
- Redmond, City of. 2014. Redmond Zoning Code, Chapter 21.64. Critical Areas Regulations. Current through Ordinance 2755, passed November 4, 2014.
- Reed, P.B., Jr. 1988. National list of plant species that occur in wetlands: Northwest (Region 9). U.S.D.I. Fish and Wildlife Service. Biological Report 88 (26.9). 89 pp.
- Rodrick, E.A. and R.L. Milner, editors. 1991. Management recommendations for Washington's priority habitats and species. Washington Department of Fish and Wildlife, Fish Management and Habitat Management Divisions. Olympia, Washington.
- Simberloff, D., and J. Cox. 1987. Consequences and costs of conservation corridors. *Conservation Biology* 1:63-71.
- Thomas, J.W., and J. Verner. 1986. Forests. Pages 73-91 in A. Cooperrider, R. Boyd, and H. Stuart, eds. Inventory and monitoring of wildlife habitat. U.S. Department of the Interior, Bureau of Land Management Service Center, Denver, Colorado.
- U.S. Army Corps of Engineers. 1991a. Special notice. Subject: Use of the 1987 wetland delineation manual. U.S. Army Corps of Engineers, Seattle District. August 30, 1991.
- U.S. Army Corps of Engineers. 1991b. Memorandum. Subject: Questions and answers on the 1987 manual. U.S. Army Corps of Engineers, Washington D.C. October 7, 1991. 7 pp. including cover letter by John P. Studt, Chief, Regulatory Branch.
- U.S. Army Corps of Engineers. 1992. Memorandum. Subject: Clarification and interpretation of the 1987 methodology. U.S. Army Corps of Engineers, Washington D.C., March 26, 1992. 4 pp. Arthur E. Williams, Major General, U.S.A. Directorate of Civil Works.
- U.S. Army Corps of Engineers. 1994. Public Notice. Subject: Washington regional guidance on the 1987 wetland delineation manual. May 23, 1994, Seattle District. 8 pp.
- U.S. Army Corps of Engineers. 2010. Regional supplement to the Corps of Engineers wetland delineation manual: western mountains, valleys, and coast region (Version 2.0). Wakeley, J.S., R.W. Lichvar, and C.V. Noble, eds. May 2010. ERDC/EL TR-10-3. U.S. Army Engineer Research and Development Center, Vicksburg, MS.
- U.S. Army Corps of Engineers. 2012. Special Public Notice. Final Regional Conditions, 401 Water Quality Conditions, Coastal Zone Management Consistency Responses, for Nationwide Permits for the Seattle District Corps of Engineers for the State of Washington. U.S. Army Corps of Engineers, Seattle District. March 19, 2012.

- U.S.D.A. Natural Resources Conservation Service. 2014. On-line Web Soil Survey. <http://websoilsurvey.nrcs.usda.gov> . Accessed June 23, 2014.
- U.S.D.A. Soil Conservation Service. 1991. Hydric soils of the United States: In cooperation with the National Technical Committee for Hydric Soils. U.S.D.A. Miscellaneous Publication Number 1491.
- U.S. Fish and Wildlife Service. 2014. National Wetland Inventory, Wetlands Online Mapper. <http://wetlandsfws.er.usgs.gov/wtlnds/launch.html> . Accessed May, 2014.
- Washington Department of Ecology. 2008. Wetland rating form -- western Washington: Version 2. Revised October 2008. [for use with wetland rating system for western Washington, WDOE Pub. #04-06-025.] Olympia, WA.
- Washington Department of Fish and Wildlife. 2008. Priority habitats and species list. August 2008. Olympia, Washington. 174 pp. <http://wdfw.wa.gov/publications/pub.php?id=00165>.
- Washington Department of Fish and Wildlife. 2014. PHS on the web. Available at: <http://wdfw.wa.gov/mapping/phs/>. Last accessed October 31, 2014.
- Washington Natural Heritage Program. 2014. Sections that contain Natural Heritage Features. Data current as of September 24, 2014. Washington Department of Natural Resources, Natural Heritage Program, Olympia, Washington. http://www.dnr.wa.gov/Publications/amp_nh_trs.pdf.

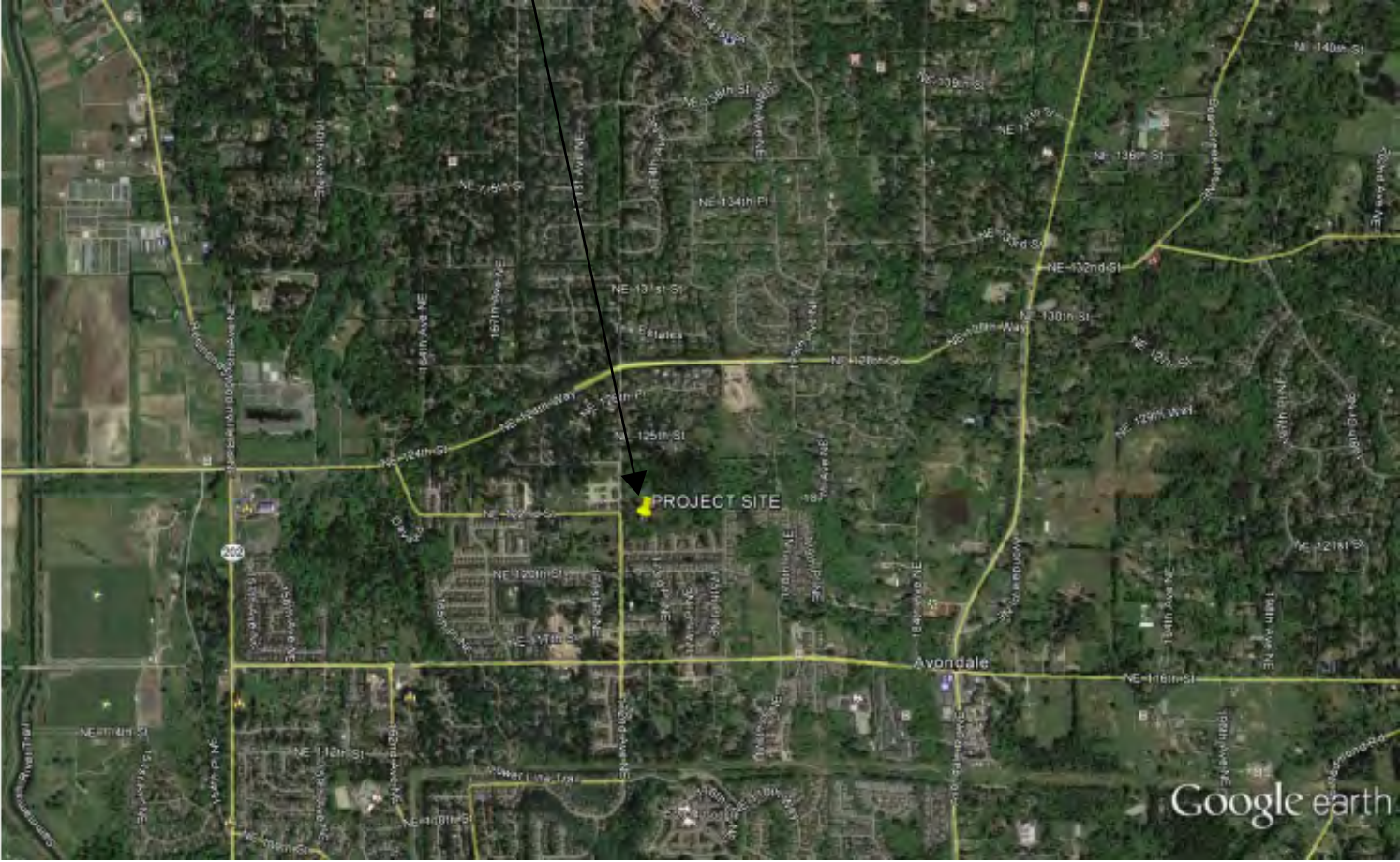
FIGURES

PROJECT LOCATION



REGIONAL MAP

VICINITY MAP



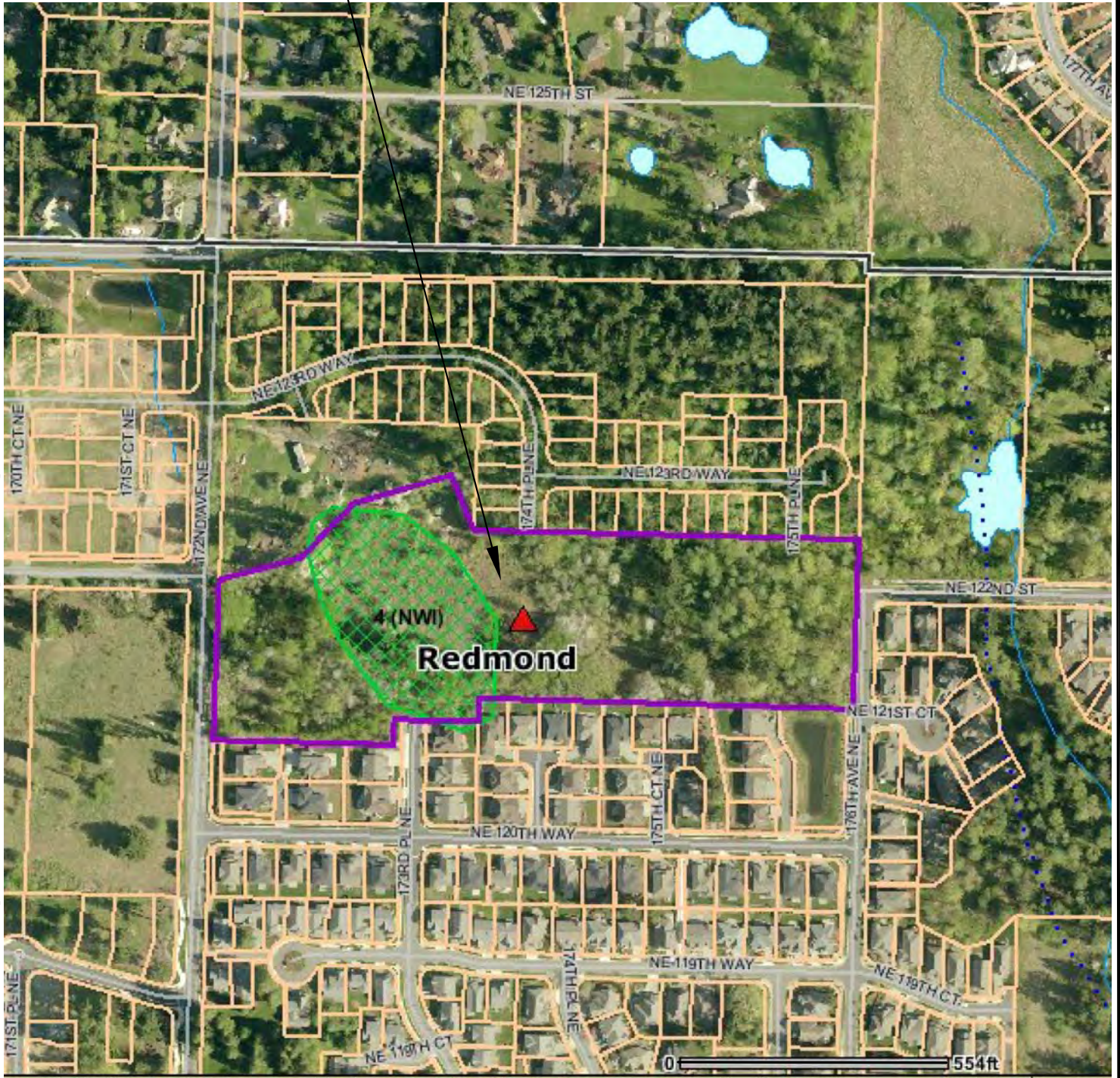
Source for Regional map & Vicinity map: Google Earth (Version 5.1.3533.1731) [Software]. Mountain View, CA: Google Inc. (2009). Available from <http://earth.google.com>. (Accessed 2012-11-26).



FIGURE 1
 REGIONAL & VICINITY MAP
 EDGEWOOD WEST
 REDMOND, WA

PROJECT SITE

T:\2013\2013-036-Edgewood West (Mansoori)\2011-036 Figures E.V.dwg



Source: King County IMAP. King County, WA. Available at <http://www5.kingcounty.gov/iMAP/viewer.htm?mapset=hazards>. (Accessed on 11/7/14).



FIGURE 2
KING COUNTY IMAP
 EDGEWOOD WEST
 REDMOND, WA

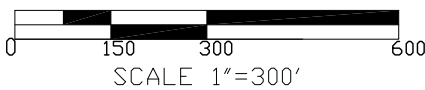


FIGURE 3
Quadrant Homes
Edgewood West
 CRITICAL AREAS REPORT
EXISTING CONDITIONS



LEGEND

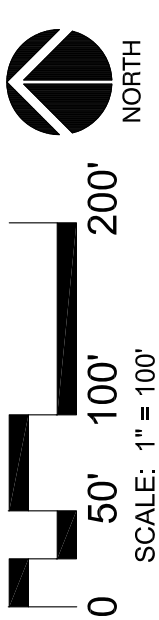
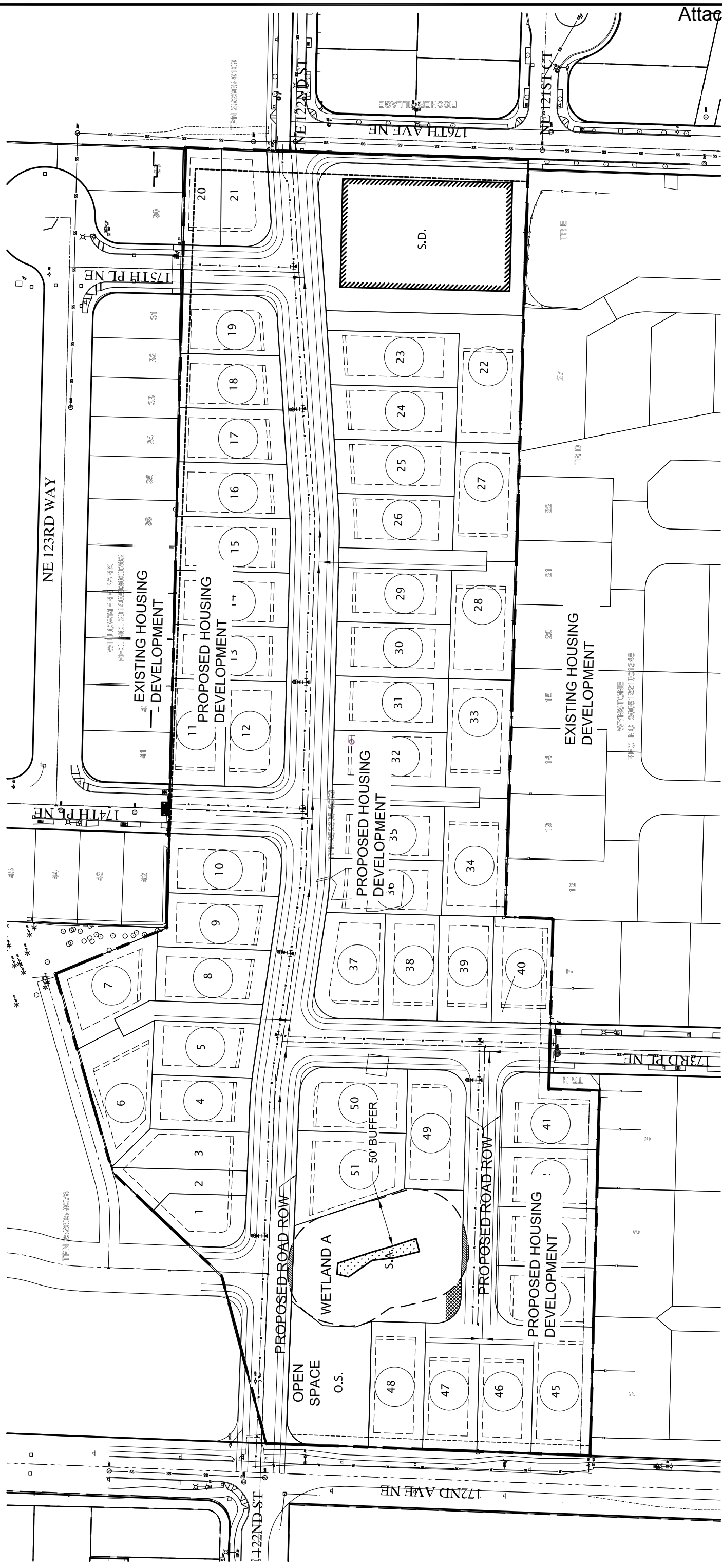
- PROJECT BOUNDARY
- EXISTING WETLAND
- SP-# SAMPLE PLOT LOCATIONS
- A-# WETLAND FLAG LOCATION
- EXISTING TREES & DRIPLINES



9510 Stone Avenue North
 Seattle, WA 98103

RAI PROJECT: 2013-036
DATE: October 24, 2014
DRAWN BY: AC
PM: CW
BASE INFORMATION: SURVEY AND SITE PLAN: Goldsmith 1215 114th Ave. S. E., Bellevue, WA 98004 Ph: 425.462.1080

FIGURE 4
Quadrant Homes
Edgewood West
 WETLAND ASSESSMENT
PROPOSED SITE PLAN



Raedeke Associates, Inc.
 9510 Stone Avenue North
 Seattle, WA 98103

RAI PROJECT: 2013-036
DATE: October 24, 2014
DRAWN BY: AC
PM: CW
BASE INFORMATION: GOLDSMITH 1215 114th Ave. S. E., Bellevue, WA 98004 Ph: 425.462.1080 Email: tcllements@goldsmithengineering.com Web: www.goldsmithengineering.com

APPENDIX A:

Sample Plot Data Sheets



DATA FORM 1 (Revised)
Routine Wetland Determination
 (WA State Wetland Delineation Manual or
 1987 Corps Wetland Delineation Manual)

Project/Site: Mansoori	Date: May 28, 2014
Applicant/owner: Quadrant	County: King
Investigator(s): C. Wright, P. McGrandner, P. Anderson	State: Washington
	S/T/R: S25, T26N, R5E
Do Normal Circumstances exist on the site? yes <input checked="" type="checkbox"/> no <input type="checkbox"/>	Community ID: Transect ID: Plot ID: Sample Plot #1
Is the site significantly disturbed (atypical situation)? yes <input type="checkbox"/> no <input checked="" type="checkbox"/>	
Is the area a potential Problem Area? yes <input type="checkbox"/> no <input checked="" type="checkbox"/>	
Explanation of atypical or problem area:	

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
Populus balsamifera	T	60	FAC				
Crataegus douglasii	S	25	FAC				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC 100%

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation _____	Physiological/reproductive adaptations _____
Morphological adaptations _____	Wetland plant database _____
Technical Literature _____	Personal knowledge of regional plant communities _____
	Other (explain) _____

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

HYDROLOGY

Is it the growing season? yes no

Based on: _____ soil temp (record temp _____)
 _____ other (explain)

Dept. of inundation: 0 inches

Depth to free water in pit: 0 inches

Depth to saturated soil: 10 inches

Water Marks: yes no
 on _____

Drift Lines: yes no

Oxidized Root (live roots)
 Channels <12 in. yes no

FAC Neutral: yes no

Sediment Deposits: yes no

Drainage Patterns: yes no

Local Soil Survey: yes no

Water-stained Leaves yes no

Check all that apply & explain below:

Stream, Lake or gage data: _____
 Aerial photographs: _____ Other: _____

Other (explain):

Wetland hydrology present? yes no

Rationale for decision/Remarks:

No saturation present above 16 inches on 5/28/2014. Soils were damp, not moist or glistening.

SOILSMap Unit Name Alderwood 6 to 15% slope
(Series & Phase)

Drainage Class _____

Taxonomy (subgroup) _____

Field observations confirm Yes No
mapped type?**Profile Description**

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-10		10YR3/2	7.5YR 4/6	C, M, 7-10%	Loam	
10-16		10YR 4/2			Sandy Loam	
16+		2.5Y 5/3			Sandy Loam	

Hydric Soil Indicators: (check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Matrix chroma \leq 2 with mottles |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> Mg or Fe Concretions |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input checked="" type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National/Local Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma (=1) matrix | <input type="checkbox"/> Other (explain in remarks) |

Hydric soils present? yes no

Rationale for decision/Remarks:

Redox Dark Surface indicator F6

Wetland Determination (circle)

- | | | |
|---------------------------------|---|---|
| Hydrophytic vegetation present? | yes <input checked="" type="checkbox"/> no <input type="checkbox"/> | |
| Hydric soils present? | yes <input checked="" type="checkbox"/> no <input type="checkbox"/> | Is the sampling point within a wetland? yes <input checked="" type="checkbox"/> no <input type="checkbox"/> |
| Wetland hydrology present? | yes <input checked="" type="checkbox"/> no <input type="checkbox"/> | |

Rationale/Remarks:**NOTES:**

Data Form 2: Atypical Situations

Applicant Name: _____ Applicant Number: _____ Project Name: _____
 Location: _____ Plot Number: _____ Date: _____

A. Vegetation:

1. Type of Alteration: _____

2. Effect on Vegetation: _____

3. Previous Vegetation: _____
 (Attach documentation) _____
4. Hydrophytic Vegetation? Yes _____ No _____

B. Soils:

1. Type of Alteration: _____

2. Effect on Soils: _____

3. Previous Soils: _____
 (Attach documentation) _____
4. Hydric Soils? Yes _____ No _____

C. Hydrology:

1. Type of Alteration: _____

2. Effect on Hydrology: _____

3. Previous Hydrology: _____
 (Attach documentation) _____
4. Wetland Hydrology? Yes _____ No _____
 Characterized By: _____



DATA FORM 1 (Revised)
Routine Wetland Determination
 (WA State Wetland Delineation Manual or
 1987 Corps Wetland Delineation Manual)

Attachment 13

Project/Site: Mansoori	Date: May 15, 2014
Applicant/owner: Quadrant	County: King
Investigator(s): C. Wright	State: Washington
	S/T/R: S25, T26N, R5E
Do Normal Circumstances exist on the site? yes <input checked="" type="checkbox"/> no <input type="checkbox"/>	Community ID: Transect ID: Plot ID: Sample Plot #2
Is the site significantly disturbed (atypical situation)? yes <input type="checkbox"/> no <input checked="" type="checkbox"/>	
Is the area a potential Problem Area? yes <input type="checkbox"/> no <input checked="" type="checkbox"/>	
Explanation of atypical or problem area:	

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
Populus balsamifera	T	25	FAC	Tiarella trifoliata	H	2	FAC
Salix scouleriana	T	25	FAC				
Prunus emarginata	T	20	FACU				
Spiraea douglasii	S	40	FACW				
Polystichum munitum	H	5	FACU				
Carex deweyana	H	2	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC 57%

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation _____	Physiological/reproductive adaptations _____
Morphological adaptations _____	Wetland plant database _____
Technical Literature _____	Personal knowledge of regional plant communities _____
	Other (explain) _____

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

HYDROLOGY

Is it the growing season? yes no

Based on: _____ soil temp (record temp _____)
 _____ other (explain)

Dept. of inundation: 0 inches

Depth to free water in pit: 0 inches

Depth to saturated soil: 16 inches

Water Marks: yes no
 on _____

Drift Lines: yes no

Oxidized Root (live roots)
 Channels <12 in. yes no

FAC Neutral: yes no

Sediment Deposits: yes no

Drainage Patterns: yes no

Local Soil Survey: yes no

Water-stained Leaves yes no

Check all that apply & explain below:

Stream, Lake or gage data: _____

Aerial photographs: _____ Other: _____

Other (explain):

Wetland hydrology present? yes no

Rationale for decision/Remarks:

Areas of ponding were observed during the site visit. Soils were saturated at the sample location starting at 16 inches.

SOILSMap Unit Name Alderwood 6 to 15% slope
(Series & Phase)

Drainage Class _____

Taxonomy (subgroup) _____

Field observations confirm Yes No
mapped type?**Profile Description**

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-16		10YR3/1			Loam	
16-18+		10YR 3/2			Gravelly Sandy Loam	

Hydric Soil Indicators: (check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Matrix chroma \leq 2 with mottles |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> Mg or Fe Concretions |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National/Local Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma (=1) matrix | <input type="checkbox"/> Other (explain in remarks) |

Hydric soils present? yes no

Rationale for decision/Remarks:

The upper portion of the soils profile lacks redox features that are indicative of a hydric soil.

Wetland Determination (circle)

- | | | |
|---------------------------------|---|---|
| Hydrophytic vegetation present? | yes <input checked="" type="checkbox"/> no <input type="checkbox"/> | |
| Hydric soils present? | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | Is the sampling point within a wetland? yes <input type="checkbox"/> no <input checked="" type="checkbox"/> |
| Wetland hydrology present? | yes <input checked="" type="checkbox"/> no <input type="checkbox"/> | |

Rationale/Remarks:**NOTES:**

Data Form 2: Atypical Situations

Applicant Name: _____ Applicant Number: _____ Project Name: _____
 Location: _____ Plot Number: _____ Date: _____

A. Vegetation:

1. Type of Alteration: _____

2. Effect on Vegetation: _____

3. Previous Vegetation: _____
 (Attach documentation) _____
4. Hydrophytic Vegetation? Yes _____ No _____

B. Soils:

1. Type of Alteration: _____

2. Effect on Soils: _____

3. Previous Soils: _____
 (Attach documentation) _____
4. Hydric Soils? Yes _____ No _____

C. Hydrology:

1. Type of Alteration: _____

2. Effect on Hydrology: _____

3. Previous Hydrology: _____
 (Attach documentation) _____
4. Wetland Hydrology? Yes _____ No _____
 Characterized By: _____



DATA FORM 1 (Revised)
Routine Wetland Determination
 (WA State Wetland Delineation Manual or
 1987 Corps Wetland Delineation Manual)

Project/Site: Mansoori	Date: May 15, 2014
Applicant/owner: Quadrant	County: King
Investigator(s): C. Wright	State: Washington
	S/T/R: S25, T26N, R5E
Do Normal Circumstances exist on the site? yes <input checked="" type="checkbox"/> no <input type="checkbox"/>	Community ID: Transect ID: Plot ID: Sample Plot #3
Is the site significantly disturbed (atypical situation)? yes <input type="checkbox"/> no <input checked="" type="checkbox"/>	
Is the area a potential Problem Area? yes <input type="checkbox"/> no <input checked="" type="checkbox"/>	
Explanation of atypical or problem area:	

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
Salix scouleriana	T	30	FAC				
Populus balsamifera	T	10	FAC				
Rubus armeniacus	S	10	FACU				
Rubus laciniatus	S	5	FACU				
Phalaris arundinacea	H	50	FACW				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC 60%

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation _____	Physiological/reproductive adaptations _____
Morphological adaptations _____	Wetland plant database _____
Technical Literature _____	Personal knowledge of regional plant communities _____
	Other (explain) _____

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

HYDROLOGY

Is it the growing season? yes no

Based on: _____ soil temp (record temp _____)
 _____ other (explain)

Dept. of inundation: None inches

Depth to free water in pit: None inches

Depth to saturated soil: None inches

Water Marks: yes no
 on _____

Drift Lines: yes no

Oxidized Root (live roots)
 Channels <12 in. yes no

FAC Neutral: yes no

Sediment Deposits: yes no

Drainage Patterns: yes no

Local Soil Survey: yes no

Water-stained Leaves yes no

Check all that apply & explain below:

Stream, Lake or gage data: _____

Aerial photographs: _____ Other: _____

Other (explain):

Wetland hydrology present? yes no

Rationale for decision/Remarks:

No indicators of hydrology were observed during our spring 2014 site visit. This is indicative of non wetland conditions.

SOILSMap Unit Name Alderwood 6 to 15% slope
(Series & Phase)

Drainage Class _____

Taxonomy (subgroup) _____

Field observations confirm Yes No
mapped type?**Profile Description**

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-12		10YR3/2			Gravelly Sandy Loam	
12-16+		10YR 4/4			Sandy Loam	

Hydric Soil Indicators: (check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Matrix chroma ≤ 2 with mottles |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> Mg or Fe Concretions |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National/Local Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma (=1) matrix | <input type="checkbox"/> Other (explain in remarks) |

Hydric soils present? yes no

Rationale for decision/Remarks:

No redox or other indicators of hydric soil conditions was observed in the soil profile.

Wetland Determination (circle)

- | | | |
|---------------------------------|---|---|
| Hydrophytic vegetation present? | yes <input checked="" type="checkbox"/> no <input type="checkbox"/> | |
| Hydric soils present? | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | Is the sampling point within a wetland? |
| Wetland hydrology present? | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> |

Rationale/Remarks:**NOTES:**

Data Form 2: Atypical Situations

Applicant Name: _____ Applicant Number: _____ Project Name: _____
 Location: _____ Plot Number: _____ Date: _____

A. **Vegetation:**

1. Type of Alteration: _____

2. Effect on Vegetation: _____

3. Previous Vegetation: _____
 (Attach documentation) _____
4. Hydrophytic Vegetation? Yes _____ No _____

B. **Soils:**

1. Type of Alteration: _____

2. Effect on Soils: _____

3. Previous Soils: _____
 (Attach documentation) _____
4. Hydric Soils? Yes _____ No _____

C. **Hydrology:**

1. Type of Alteration: _____

2. Effect on Hydrology: _____

3. Previous Hydrology: _____
 (Attach documentation) _____
4. Wetland Hydrology? Yes _____ No _____
 Characterized By: _____



DATA FORM 1 (Revised)
Routine Wetland Determination
 (WA State Wetland Delineation Manual or
 1987 Corps Wetland Delineation Manual)

Project/Site: Mansoori	Date: May 15, 2014
Applicant/owner: Quadrant	County: King
Investigator(s): C. Wright	State: Washington
	S/T/R: S25, T26N, R5E
Do Normal Circumstances exist on the site? yes <input checked="" type="checkbox"/> no <input type="checkbox"/>	Community ID: Transect ID: Plot ID: Sample Plot #4
Is the site significantly disturbed (atypical situation)? yes <input type="checkbox"/> no <input checked="" type="checkbox"/>	
Is the area a potential Problem Area? yes <input type="checkbox"/> no <input checked="" type="checkbox"/>	
Explanation of atypical or problem area:	

VEGETATION (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
Prunus emarginata	T	10	FACU				
Rubus armeniacus	S	5	FACU				
Phalaris arundinacea	H	50	FACW				
Urtica dioica	H	40	FAC				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC 50%

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation	_____	Physiological/reproductive adaptations	_____
Morphological adaptations	_____	Wetland plant database	_____
Technical Literature	_____	Personal knowledge of regional plant communities	_____
		Other (explain)	_____

Hydrophytic vegetation present? yes no

Rationale for decision/Remarks:

HYDROLOGY

Is it the growing season? yes no

Based on: _____ soil temp (record temp _____)
 _____ other (explain)

Water Marks: yes <input type="checkbox"/> no <input checked="" type="checkbox"/>	Sediment Deposits: yes <input type="checkbox"/> no <input checked="" type="checkbox"/>
Drift Lines: yes <input type="checkbox"/> no <input checked="" type="checkbox"/>	Drainage Patterns: yes <input type="checkbox"/> no <input checked="" type="checkbox"/>
Oxidized Root (live roots) Channels <12 in. yes <input type="checkbox"/> no <input checked="" type="checkbox"/>	Local Soil Survey: yes <input type="checkbox"/> no <input checked="" type="checkbox"/>
FAC Neutral: yes <input type="checkbox"/> no <input checked="" type="checkbox"/>	Water-stained Leaves yes <input type="checkbox"/> no <input checked="" type="checkbox"/>

Dept. of inundation: None inches

Depth to free water in pit: None inches

Depth to saturated soil: None inches

Check all that apply & explain below:
 Stream, Lake or gage data: _____
 Aerial photographs: _____ Other: _____

Other (explain):

Wetland hydrology present? yes no

Rationale for decision/Remarks:

Lack of indicators fo hydrology were observed during our spring 2014 site visit is indicative of non wetland conditions.

SOILSMap Unit Name Alderwood 6 to 15% slope
(Series & Phase)

Drainage Class _____

Taxonomy (subgroup) _____

Field observations confirm Yes No
mapped type?**Profile Description**

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-12		10YR3/2			Gravelly Sandy Loam	
12-16+		10YR 4/4			Sandy Loam	

Hydric Soil Indicators: (check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Matrix chroma \leq 2 with mottles |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> Mg or Fe Concretions |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National/Local Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma (=1) matrix | <input type="checkbox"/> Other (explain in remarks) |

Hydric soils present? yes no

Rationale for decision/Remarks:

No redox or other indicators of hydric soil conditions was observed in the soil profile.

Wetland Determination (circle)

- | | | |
|---------------------------------|---|---|
| Hydrophytic vegetation present? | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | |
| Hydric soils present? | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | Is the sampling point within a wetland? yes <input type="checkbox"/> no <input checked="" type="checkbox"/> |
| Wetland hydrology present? | yes <input type="checkbox"/> no <input checked="" type="checkbox"/> | |

Rationale/Remarks:**NOTES:**

Data Form 2: Atypical Situations

Applicant Name: _____ Applicant Number: _____ Project Name: _____
 Location: _____ Plot Number: _____ Date: _____

A. Vegetation:

1. Type of Alteration: _____

2. Effect on Vegetation: _____

3. Previous Vegetation: _____
 (Attach documentation) _____
4. Hydrophytic Vegetation? Yes _____ No _____

B. Soils:

1. Type of Alteration: _____

2. Effect on Soils: _____

3. Previous Soils: _____
 (Attach documentation) _____
4. Hydric Soils? Yes _____ No _____

C. Hydrology:

1. Type of Alteration: _____

2. Effect on Hydrology: _____

3. Previous Hydrology: _____
 (Attach documentation) _____
4. Wetland Hydrology? Yes _____ No _____
 Characterized By: _____

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manoori City/County: Redmond/King Sampling Date: May 15, 2014
 Applicant/Owner: Quadrant State: WA Sampling Point: SP#1
 Investigator(s): C. Wright Section, Township, Range: S25, T26N, R5E
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): <5
 Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47 42'31.81" N Long: 122 06'31.49" W Datum: unknown
 Soil Map Unit Name: Alderwood 6 to 15% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Area lacks hydric soils and definitive hydrophytic vegetation community (FAC)	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>5m diam</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus balsamifera (black cottonwood)</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>60</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>3m diam</u>)				
1. <u>Crataegus douglasii (Douglas hawthorn)</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>25</u>	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>1m diam</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>% Bare Ground in Herb Stratum</u> <u>70</u>				
Remarks:				

SOIL

Sampling Point: 1 _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/2	100					L	no redox
10-16	10YR 4/2	100					SL	no redox
16+	2.5Y 5/3	100					SL	no redox
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
Restrictive Layer (if present):						Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Type: _____								
Depth (inches): _____								
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
Field Observations:		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____		
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____		
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>10</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Area of ponding			

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manoori City/County: Redmond/King Sampling Date: May 15, 2014
 Applicant/Owner: Quadrant State: WA Sampling Point: SP#2
 Investigator(s): C. Wright Section, Township, Range: S25, T26N, R5E
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): <5
 Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47 42'31.81" N Long: 122 06'31.49" W Datum: unknown
 Soil Map Unit Name: Alderwood 6 to 15% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Area lacks hydric soils and definitive hydrophytic vegetation community (FAC)	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>5m diam</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus balsamifera (black cottonwood)</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. <u>Salix scouleriana (Scoulers willow)</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Prunus emarginata (bitter cherry)</u>	<u>20</u>	<u>N</u>	<u>FACU</u>	
4. _____				
	<u>70</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>3m diam</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. <u>Spiraea douglasii (Douglas spirea)</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
	<u>40</u>	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>1m diam</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Polystichum munitum (sword fern)</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
2. <u>Carex deweyana (Deweys sedge)</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	
3. <u>Tiarella trifoliata (foamflower)</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	<u>9</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. _____				
2. _____				
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>30</u>				

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 3/1	100					L	no redox
16 - 18+	10YR 3/2	95	10YR 4/6	5	C	PL	grSL	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
Restrictive Layer (if present):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: lack of redox in upper portion of profile, not indicative of hydric soil								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
Field Observations:			
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____		
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): 16		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Area of ponding			

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manoori City/County: Redmond/King Sampling Date: May 15, 2014
 Applicant/Owner: Quadrant State: WA Sampling Point: SP#3
 Investigator(s): C. Wright Section, Township, Range: S25, T26N, R5E
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): <5
 Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47 42'31.81" N Long: 122 06'31.49" W Datum: unknown
 Soil Map Unit Name: Alderwood 6 to 15% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Area lacks hydric soils and definitive hydrophytic vegetation community (FAC)	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>5m diam</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus balsamifera (black cottonwood)</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. <u>Salix scouleriana (Scoulers willow)</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. _____				
4. _____				
	<u>40</u>	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<u>Sapling/Shrub Stratum</u> (Plot size: <u>3m diam</u>)				
1. <u>Rubus armenianicus (Himalayan blackberry)</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
2. <u>Rubus laciniatus (cut-leaf blackberry)</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
3. _____				
4. _____				
5. _____				
	<u>15</u>	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>1m diam</u>)				
1. <u>Polystichum munitum (sword fern)</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Phalaris arundinacea (reed canarygrass)</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	<u>60</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. _____				
2. _____				
	<u>0</u>	= Total Cover		
<u>% Bare Ground in Herb Stratum</u> <u>10</u>				

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/2	100					grSL	no redox
12-16+	10YR 4/4	100					SL	no redox

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
--	---	---

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

Remarks: lack of redox in upper portion of profile, not indicative of hydric soil

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>			<u>Secondary Indicators (2 or more required)</u>		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)			
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____			Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks: lack of hydrology in spring 2014 indicative of non wetland conditions					

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Manoori City/County: Redmond/King Sampling Date: May 15, 2014
 Applicant/Owner: Quadrant State: WA Sampling Point: SP#4
 Investigator(s): C. Wright Section, Township, Range: S25, T26N, R5E
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): <5
 Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47 42'31.81" N Long: 122 06'31.49" W Datum: unknown
 Soil Map Unit Name: Alderwood 6 to 15% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Area lacks hydric soils and definitive hydrophytic vegetation community (FAC)	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: 5m diam)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Prunus emarginata</u> (bitter cherry)	10	N	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____	<u>10</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: 3m diam)				
1. <u>Rubus armenianicus</u> (Himalayan blackberry)	5	N	FACU	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>15</u> = Total Cover				
<u>Herb Stratum</u> (Plot size: 1m diam)				
1. <u>Urtica dioica</u> (stinging nettle)	40	Y	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Phalaris arundinacea</u> (reed canarygrass)	50	Y	FACW	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>90</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>% Bare Ground in Herb Stratum</u> <u>0</u>				

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/2	100					grSL	no redox
12-18	10YR 4/4	100					SL	no redox

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: lack of redox not indicative of hydric soil

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
(includes capillary fringe)			

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: lack of hydrology in spring 2014 indicative of non wetland conditions

Ecology site visit corrections to SP1

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

5/28/14

Project/Site: Manoori City/County: Redmond/King Sampling Date: May 15, 2014
 Applicant/Owner: Quadrant State: WA Sampling Point: SP#1
 Investigator(s): C. Wright P. McGraner, P. Anderson Section, Township, Range: S25, T26N, R5E
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): <5
 Subregion (LRR): Northwest Forests and Coasts (LRR A) Lat: 47 42'31.81" N Long: 122 06'31.49" W Datum: unknown
 Soil Map Unit Name: Alderwood 6 to 15% slope NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Area lacks hydric soils and definitive hydrophytic vegetation community (FAC) <div style="font-size: 1.2em; margin-top: 10px;">Soils determined to meet hydric soils indicator F6</div>	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>5m diam</u>)				
1. <u>Populus balsamifera (black cottonwood)</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____	_____	_____	_____	
<u>60</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>3m diam</u>)				
1. <u>Crataegus douglasii (Douglas hawthorn)</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
<u>25</u> = Total Cover				
Herb Stratum (Plot size: <u>1m diam</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>0</u> = Total Cover				
% Bare Ground in Herb Stratum <u>70</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Remarks:

SOIL

Sampling Point: 1 _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/2	100	7.5YR 4/6	7-10	C	M	L	no redox distinct
10-16	10YR 4/2	100					SL	no redox
16+	2.5Y 5/3	100					SL	no redox

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: *PRM WSDOE 5/28/14*

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): _____

Saturation Present? Yes No Depth (inches): 10 (includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Area of ponding *No saturation present above 16" on 5/28/14 soils were damp - not moist or glistening*

APPENDIX B:

WDOE Wetland Rating Form

Wetland name or number _____

WETLAND RATING FORM – WESTERN WASHINGTON
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Marowic I Date of site visit: 6/6/13, 5/15/14, 5/30/14

Rated by C. Wright Trained by Ecology? Yes ___ No ___ Date of training 10/07

SEC: ___ TOWNSHIP: ___ RANGE: ___ Is S/T/R in Appendix D? Yes ___ No ___

Map of wetland unit: Figure ___ Estimated size _____

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ___ II ___ III ___ IV ___

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions	8
Score for Hydrologic Functions	10
Score for Habitat Functions	9
TOTAL score for Functions	27

Category based on SPECIAL CHARACTERISTICS of wetland

I ___ II ___ Does not Apply

Final Category (choose the "highest" category from above)

IV

Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating
Estuarine	Depressional
Natural Heritage Wetland	Riverine
Bog	Lake-fringe
Mature Forest	Slope
Old Growth Forest	Flats
Coastal Lagoon	Freshwater Tidal
Interdunal	
None of the above	Check if unit has multiple HGM classes present <input type="checkbox"/>

Wetland name or number _____

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		✓
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		✓
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		✓
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		✓

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Wetland name or number _____

Classification of Wetland Units in Western Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
 NO – go to 2 ✓ YES – the wetland class is **Tidal Fringe**
 If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – **Freshwater Tidal Fringe** NO – **Saltwater Tidal Fringe (Estuarine)**
If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).
2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
 NO – go to 3 ✓ YES – The wetland class is **Flats**
 If your wetland can be classified as a “Flats” wetland, use the form for **Depressional** wetlands.
3. Does the entire wetland unit **meet both** of the following criteria?
 ___ The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
 ___ At least 30% of the open water area is deeper than 6.6 ft (2 m)?
 NO – go to 4 ✓ YES – The wetland class is **Lake-fringe (Lacustrine Fringe)**
4. Does the entire wetland unit **meet all** of the following criteria?
 ___ The wetland is on a slope (*slope can be very gradual*),
 ___ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
 ___ The water leaves the wetland **without being impounded**?
 NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).*
 NO – go to 5 ✓ YES – The wetland class is **Slope**

Wetland name or number _____

5. Does the entire wetland unit **meet all** of the following criteria?

_____ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river

_____ The overbank flooding occurs at least once every two years.

NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.

NO - go to 6 ✓ **YES** - The wetland class is **Riverine**

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 7 **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO - go to 8 **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. **NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

<i>HGM Classes within the wetland unit being rated</i>	<i>HGM Class to Use in Rating</i>
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland name or number _____

D Depressional and Flats Wetlands		Points (only 1 score per box)
WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality		
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
D	<p>D 1.1 Characteristics of surface water flows out of the wetland:</p> <p>Unit is a depression with no surface water leaving it (no outlet) points = 3 ✓</p> <p>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2</p> <p>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1</p> <p>Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1</p> <p>(If ditch is not permanently flowing treat unit as "intermittently flowing")</p> <p>Provide photo or drawing</p>	Figure <u>3</u>
D	<p>S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)</p> <p>YES points = 4 ✓</p> <p>NO points = 0 ✓</p>	<u>0</u>
D	<p>D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)</p> <p>Wetland has persistent, ungrazed, vegetation >= 95% of area points = 5</p> <p>Wetland has persistent, ungrazed, vegetation >= 1/2 of area points = 3</p> <p>Wetland has persistent, ungrazed vegetation >= 1/10 of area points = 1 ✓</p> <p>Wetland has persistent, ungrazed vegetation <1/10 of area points = 0</p> <p>Map of Cowardin vegetation classes</p>	Figure <u>1</u>
D	<p>D1.4 Characteristics of seasonal ponding or inundation.</p> <p><i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</i></p> <p>Area seasonally ponded is > 1/2 total area of wetland points = 4 ✓</p> <p>Area seasonally ponded is > 1/4 total area of wetland points = 2</p> <p>Area seasonally ponded is < 1/4 total area of wetland points = 0</p> <p>Map of Hydroperiods</p>	Figure <u>4</u>
D	Total for D 1	<u>8</u>
<i>Add the points in the boxes above</i>		
D	<p>D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?</p> <p>Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i></p> <ul style="list-style-type: none"> — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other _____ <p>YES multiplier is 2 NO multiplier is 1 ✓</p>	(see p. 44)
D	TOTAL - Water Quality Functions	multiplier <u>1</u>
Multiply the score from D1 by D2		
<i>Add score to table on p. 1</i>		<u>8</u>

Wetland name or number _____

D Depressional and Flats Wetlands		Points (only 1 score per box)
HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation		
D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?		<i>(see p.46)</i>
D	<p>D 3.1 Characteristics of surface water flows out of the wetland unit</p> <p>Unit is a depression with no surface water leaving it (no outlet) points = 4 ✓</p> <p>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2</p> <p>Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1</p> <p><i>(If ditch is not permanently flowing treat unit as "intermittently flowing")</i></p> <p>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0</p>	4
D	<p>D 3.2 Depth of storage during wet periods</p> <p><i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).</i></p> <p>Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7</p> <p>The wetland is a "headwater" wetland" points = 5</p> <p>Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5</p> <p>Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 ✓</p> <p>Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap water points = 1</p> <p>Marks of ponding less than 0.5 ft points = 0</p>	3
D	<p>D 3.3 Contribution of wetland unit to storage in the watershed</p> <p><i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i></p> <p>The area of the basin is less than 10 times the area of unit points = 5</p> <p>The area of the basin is 10 to 100 times the area of the unit points = 3 ✓</p> <p>The area of the basin is more than 100 times the area of the unit points = 0</p> <p>Entire unit is in the FLATS class points = 5</p>	3
D	Total for D 3	10
D	<p>D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur.</p> <p><i>Note which of the following indicators of opportunity apply.</i></p> <ul style="list-style-type: none"> — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other _____ <p>YES multiplier is 2 NO multiplier is 1 ✓</p>	multiplier 1
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 <i>Add score to table on p. 1</i>	10

Wetland name or number _____

<p>H 1.4. Interspersion of habitats (see p. 76) Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="text-align: center; margin: 10px 0;"> <p style="display: flex; justify-content: space-around; margin-top: 5px;"> None = 0 points ✓ Low = 1 point Moderate = 2 points </p> <p style="margin-top: 20px; text-align: center;">High = 3 points</p> <p style="margin-top: 5px; text-align: right;">[riparian braided channels]</p> </div> <p style="font-size: small; margin-top: 10px;">NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes</p>	<p>Figure _____</p> <p style="text-align: center; font-size: 2em; margin-top: 100px;">0</p>
<p>H 1.5. Special Habitat Features: (see p. 77) Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. (structures for egg-laying by amphibians) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants <p style="font-size: x-small; margin-top: 5px;">NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p style="text-align: center; border: 1px dashed black; padding: 2px;">1</p>
<p>H 1. TOTAL Score - potential for providing habitat Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</p>	
<p>Comments</p>	

Wetland name or number _____

<p>H 2. Does the wetland unit have the opportunity to provide habitat for many species?</p>			
<p>H 2.1 Buffers (see p. 80) Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed." — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) Points = 5 — 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. Points = 4 — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. Points = 4 ✓ — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . Points = 3 — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3 If buffer does not meet any of the criteria above — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2 — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2 — Heavy grazing in buffer. Points = 1 — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland Points = 0. — Buffer does not meet any of the criteria above. Points = 1</p>	<p>Figure _____</p>		
<p>H 2.2 Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 ✓ H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3 ✓ H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? YES = 1 point NO = 0 points ✓</p>		<p>Aerial photo showing buffers</p>	<p>4</p>
		<p>0</p>	

Total for page 4

Wetland name or number _____

<p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</u></p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>).</p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> Old-growth/Mature forests: (<u>Old-growth west of Cascade crest</u>) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (<u>Mature forests</u>) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p><input type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p><input type="checkbox"/> Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p><input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input checked="" type="checkbox"/> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.</p> <p style="padding-left: 40px;">If wetland has 3 or more priority habitats = 4 points</p> <p style="padding-left: 40px;">If wetland has 2 priority habitats = 3 points</p> <p style="padding-left: 40px;">If wetland has 1 priority habitat = 1 point ✓</p> <p style="padding-left: 120px;">No habitats = 0 points</p> <p><i>Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)</i></p>	<p>1</p>
--	----------

Wetland name or number _____

<p>H 2.4 <u>Wetland Landscape</u> (choose the one description of the landscape around the wetland that best fits) (see p. 84)</p> <p>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</p> <p>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5</p> <p>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3 ✓</p> <p>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3</p> <p>There is at least 1 wetland within ½ mile. points = 2</p> <p>There are no wetlands within ½ mile. points = 0</p>	<p>3</p>
<p>H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4</p>	<p>8</p>
<p>TOTAL for H 1 from page 14</p>	<p>1</p>
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>	<p>9</p>

Wetland name or number _____

<p>SC 2.0 Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? <i>(this question is used to screen out most sites before you need to contact WNHP/DNR)</i> S/T/R information from Appendix D ___ or accessed from WNHP/DNR web site ___</p> <p>YES ___ – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO <input checked="" type="checkbox"/></p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NO ___ not a Heritage Wetland</p>	<p>Cat. I</p>
<p>SC 3.0 Bogs (see p. 87) Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 No - go to Q. 2 <input checked="" type="checkbox"/> 2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? Yes - go to Q. 3 No - Is not a bog for purpose of rating <input checked="" type="checkbox"/> 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? Yes – Is a bog for purpose of rating No - go to Q. 4 <p>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</p> <ol style="list-style-type: none"> 1. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? 2. YES = Category I No ___ Is not a bog for purpose of rating 	<p>Cat. I</p>

Wetland name or number _____

<p>SC 4.0 Forested Wetlands (see p. 90) Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> — Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more. <p>NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</p> <ul style="list-style-type: none"> — Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. <p>YES = Category I NO <input checked="" type="checkbox"/> not a forested wetland with special characteristics</p>	<p>Cat. I</p>
<p>SC 5.0 Wetlands in Coastal Lagoons (see p. 91) Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) <p>YES = Go to SC 5.1 NO <input checked="" type="checkbox"/> not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meets all of the following three conditions?</p> <ul style="list-style-type: none"> — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than 1/10 acre (4350 square feet) <p>YES = Category I NO = Category II</p>	<p>Cat. I Cat. II</p>

Wetland name or number _____

<p>SC 6.0 Interdunal Wetlands (see p. 93) Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES - go to SC 6.1 NO <input checked="" type="checkbox"/> not an interdunal wetland for rating <i>If you answer yes you will still need to rate the wetland based on its functions.</i> In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • Long Beach Peninsula- lands west of SR 103 • Grayland-Westport- lands west of SR 105 • Ocean Shores-Copalis- lands west of SR 115 and SR 109 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger? YES = Category II NO – go to SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? YES = Category III</p>	<p>Cat. II</p> <p>Cat. III</p>
<p>Category of wetland based on Special Characteristics Choose the "highest" rating if wetland falls into several categories, and record on p. 1. If you answered NO for all types enter "Not Applicable" on p.1</p>	

APPENDIX C

Wetland and Habitat Assessment Forms



WETLAND SUMMARY SHEET

Wetland Summary			Buffer Summary				Wetland Impacts		Mitigation Summary		
Label ¹	Category ²	Size ³	Required ⁴	Proposed ⁵	Increase ⁶ Reduce ⁷	Averaging ⁸	Fill ⁹	Paper Fill ¹⁰	Ratio ¹¹	Area ¹²	Location ¹³
A	IV	1021sq ft	50	50 - >60		50					

¹ Wetland A, B, C, etc.
² Wetland category per City wetland classification system.
³ Area of wetland.
⁴ Required buffer width in feet per RCDG.
⁵ Proposed buffer width in feet.
⁶ Does the uniqueness of the wetland require an increased buffer? If so, what is the width in feet.
⁷ Is there a request to reduce the buffer width? If so, what is the width in feet.
⁸ Is buffer averaging being used? If so, what is the average buffer width in feet.
⁹ Amount of wetland fill.
¹⁰ Amount of paper fill.
¹¹ Required ratio for wetland mitigation per RCDG.
¹² Size of mitigation area.
¹³ Note location of mitigation area (keyed to the mitigation map).



**CITY OF REDMOND
HABITAT UNIT ASSESSMENT FORM**

HABITAT UNIT: Edgewood West Preliminary Plat

LOCATION: S 25, T 26 N, R 5 E

TOTAL SCORE: 15 _____

Habitat Parameter	Scoring Criteria	Habitat Unit Score
Size	<ul style="list-style-type: none"> • >50 acres = 3 points • 10-50 acres = 2 points • 0-10 acres = 1 point 	2
Vegetation Community Types	<ul style="list-style-type: none"> • ≥ 4 types = 3 points • 2-3 types = 2 points • 1 type = 1 point • None = 0 points 	2
Community Interspersion	<ul style="list-style-type: none"> • High = 3 points • Medium = 2 points • Low = 1 point • None = 0 points 	1
Priority Species Presence	<ul style="list-style-type: none"> • Threatened & Endangered Species = 3 points • Candidate Species = 2 points • Monitor Species = 1 point • None = 0 points 	2
Priority Species Habitat Use	<ul style="list-style-type: none"> • Breeding = 3 points • Roosting = 2 points • Foraging = 1 point • None = 0 points 	1
Habitat Continuity	<ul style="list-style-type: none"> • Links protected habitats = 3 points • Links unprotected habitats = 2 points • Extends habitat corridor = 1 point • None = 0 points 	1
Forest Vegetation Layers	<ul style="list-style-type: none"> • 3 layers = 3 points • 2 layers = 2 points • 1 layers = 1 point • None = 0 points 	3
Forest Age	<ul style="list-style-type: none"> • Mature = 3 points • Pole = 2 points • Seedling/Shrub = 1 point • None = 0 points 	2
Invasive Species Presence	<ul style="list-style-type: none"> • 0-25% = 3 points • 26-50% = 2 points • 51-75% = 1 point • 75-100% = 0 points 	1

**CITY OF REDMOND
HABITAT UNIT ASSESSMENT FORM**

VEGETATION COMMUNITY TYPES:

Deciduous forest, open shrub

INVASIVE PLANTS:

Himalayan and cutleaf blackberry, reed canarygrass

HABITAT FEATURES (snags, perches, downed logs, etc):

Few small snags (less than 10 inches dbh). Downed logs widely scattered, mostly less than 10 inches diameter.

WILDLIFE OBSERVATIONS (direct or indirect):

Foraging excavations by pileated woodpecker in one snag. Otherwise, a few species of breeding and resident small birds typical of lowland forests were observed. No reptiles or amphibians were observed.

THREATS TO HABITAT INTEGRITY:

Invasive species, particularly Himalayan blackberry and reed canarygrass.
Human and domestic pet activity from surrounding residences.

OTHER NOTES:

APPENDIX D
CITY OF REDMOND MAPS

Edgewood West

Nov 17, 2014



U.S. Fish and Wildlife Service
National Wetlands Inventory



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Riparian

- Herbaceous
- Forested/Shrub

Riparian Status

- Digital Data

PROJECT SITE

Redmond

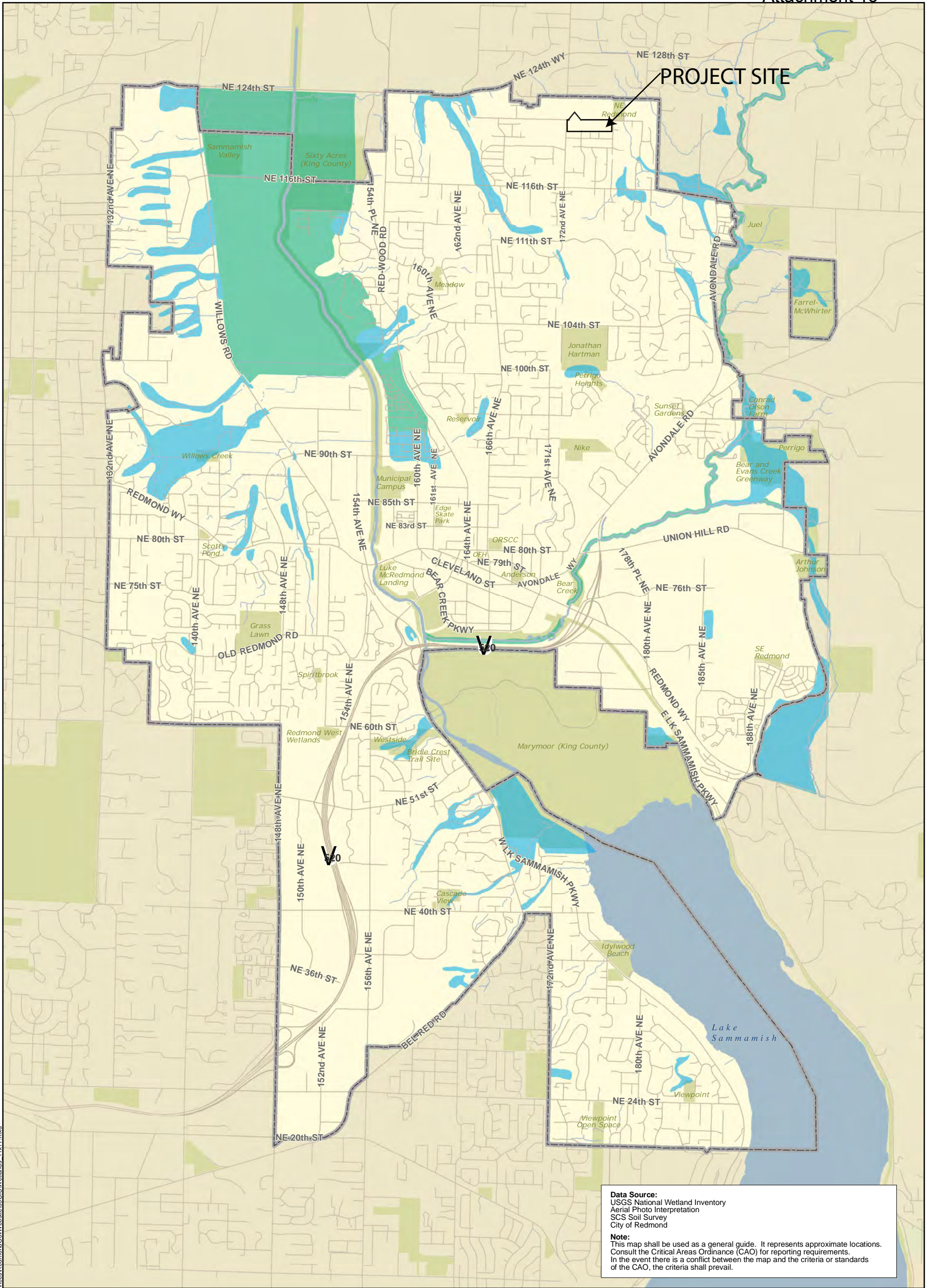
Northeast Redmond Park

200m
500ft

POWERED BY
esri

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:



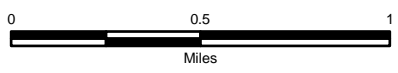
Data Source:
 USGS National Wetland Inventory
 Aerial Photo Interpretation
 SCS Soil Survey
 City of Redmond

Note:
 This map shall be used as a general guide. It represents approximate locations. Consult the Critical Areas Ordinance (CAO) for reporting requirements. In the event there is a conflict between the map and the criteria or standards of the CAO, the criteria shall prevail.

File Name: \\redmond.man1s\GISUser\GIS\GIServices\Project\GIS\Services\Redmond\Gow\Wetlands\11x17.mxd

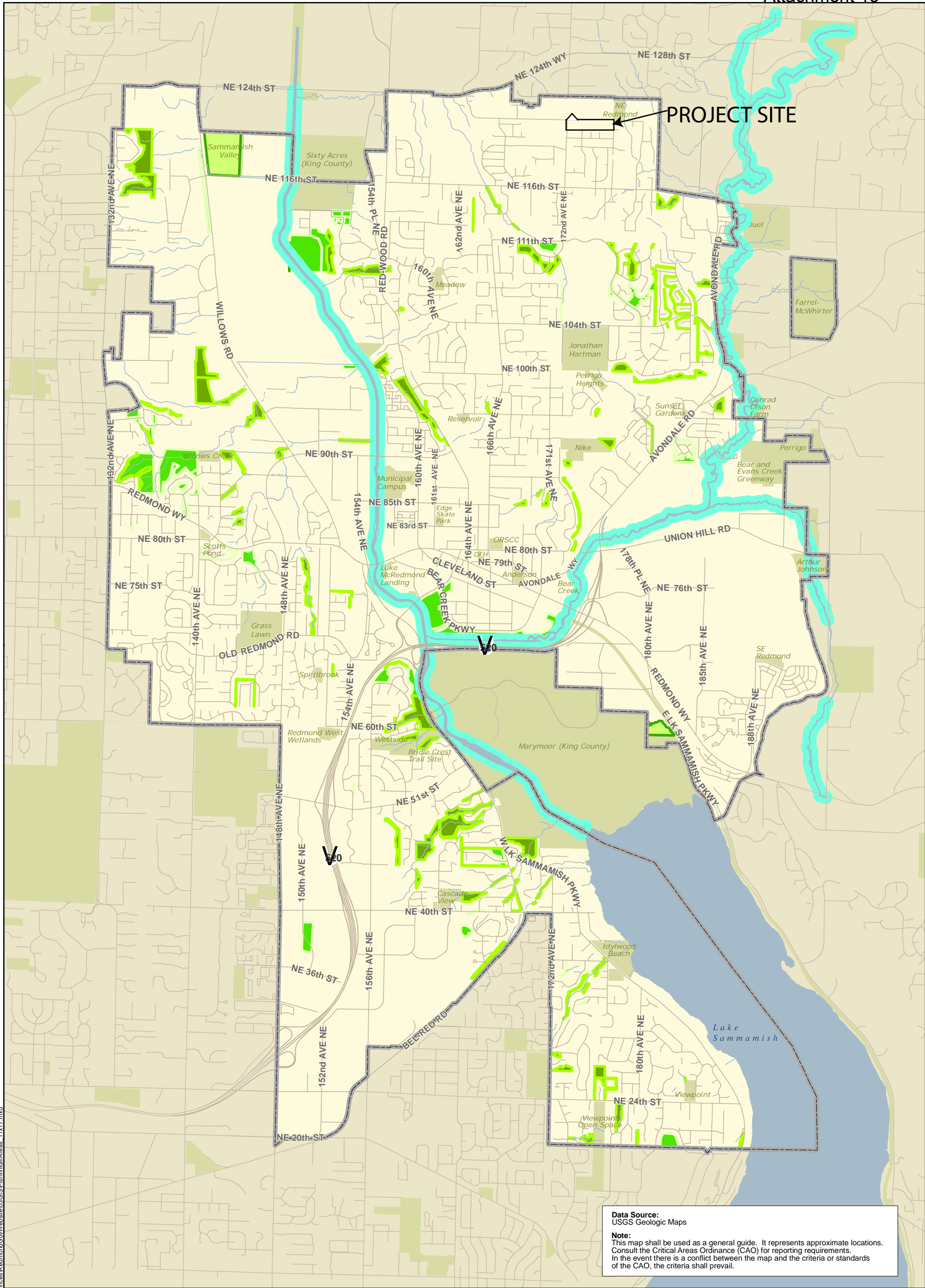


**Wetlands
 Critical Areas Map**
 City of Redmond, Washington



- Mixed Wetland/Upland
- Wetland
- Park and Open Space
- Water
- City Limit

Disclaimer: This map is created and maintained by GIS Services Group, Finance and Information Services, City of Redmond, Washington, for reference purposes only.
 The City makes no guarantee as to the accuracy of the features shown on this map.



Data Source:
USGS Geologic Maps

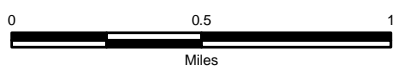
Note:
This map shall be used as a general guide. It represents approximate locations. Consult the Critical Areas Ordinance (CAO) for reporting requirements. In the event there is a conflict between the map and the criteria or standards of the CAO, the criteria shall prevail.

Fish and Wildlife Habitat Conservation Areas (Core Preservation Areas)

Critical Areas Map

City of Redmond, Washington

Effective: 05/28/2005



-  Class 1 Streams and Buffers
-  Native Growth Protection Easements
-  Open Space Easements
-  Transfer Development Rights Easements
-  City Limit
-  Park and Open Space
-  Water