

CRITICAL AREA STUDY

AND

MITIGATION PLAN

FOR

EAST LAKE SAMMAMISH APARTMENTS
REDMOND, WA

Wetland Resources, Inc. Project #16010

Prepared By
Wetland Resources, Inc.
9505 19th Avenue SE, Suite 106
Everett, WA 98208
(425) 337-3174

Prepared For
MSPT XVIII LLC
ATTN: Marc Boettcher
12332 NE 115th Place
Kirkland, WA 98033

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TABLE OF CONTENTS

1.0 INTRODUCTION	1
1.1 PROJECT DESCRIPTION	2
1.2 CRITICAL AREAS CLASSIFICATIONS	3
1.2.1 Cowardin System Classifications	3
1.2.2 City of Redmond Classifications	3
2.0 STATEMENT OF QUALIFICATIONS	4
3.0 CRITICAL AREAS DETERMINATION REPORT	4
3.1 PUBLICLY AVAILABLE DATA	4
3.2 FIELD DETERMINATION METHODOLOGY	5
3.2.1 Hydrophytic Vegetation Criteria	6
3.2.2 Soils Criteria and Mapped Description	6
3.2.3 Hydrology Criteria	7
3.3 WETLAND BOUNDARY DETERMINATION FINDINGS	7
3.3.1 Wetland A (On-site)	7
3.3.2 Non-wetland Areas Adjacent to Wetland A	8
3.3.3 On-site Wildlife Opportunity	8
3.3.4 Wetland B (Mitigation Site)	8
3.3.5 Non-wetland Areas Adjacent to Wetland B	9
3.3.6 Mitigation Site Wildlife Opportunity	10
4.0 FUNCTIONS AND VALUES ASSESSMENT	10
4.1 METHODOLOGY	10
4.2 FUNCTIONS AND VALUES COMPONENTS	10
4.3 EXISTING CONDITIONS	10
4.3.1 Wetland A (On-site)	10
4.3.2 Wetland B (Mitigation Site)	11
4.4 POST-MITIGATION FUNCTIONS AND VALUES	12
4.4.1 Wetland A (On-site)	12
4.4.2 Wetland B (Mitigation Site)	12
5.0 COMPLIANCE WITH RZC 21.64.010.I	12
6.0 COMPLIANCE WITH RZC 21.64.010.L	13
7.0 WETLAND MITIGATION PLAN	16
7.1 OFF-SITE WETLAND ENHANCEMENT	16
7.1.1 Enhancement Plantings	16
7.2 PLANTING NOTES	17
7.3 MAINTENANCE	20
7.4 GENERAL PROJECT NOTES	22
8.0 PROJECT MONITORING PROGRAM	22
8.1 PROGRAM DETAILS	22
8.1.1 Inspection and Reporting Requirements	22
8.1.2 Monitoring Components	23
8.2 PROJECT SUCCESS & COMPLIANCE	24
8.2.1 Criteria for Success	24
8.2.2 Goal	24
8.2.3 Definition of Success	24
8.2.4 Objectives	24
8.2.5 Performance Standards	24
8.3 CONTINGENCY PLAN	25

9.0 PERFORMANCE BOND	25
10.0 USE OF THIS REPORT.....	27
11.0 REFERENCES	28

LIST OF FIGURES

FIGURE 1: AERIAL VIEW OF THE SUBJECT PROPERTY.....	1
FIGURE 2: AERIAL VIEW OF THE MITIGATION SITE.	2

LIST OF APPENDICES

APPENDIX A: DEPARTMENT OF ECOLOGY WETLAND RATING FORMS	
APPENDIX B: CORPS OF ENGINEERS WETLAND DETERMINATION DATA FORMS	
APPENDIX C: REDMOND WETLAND SUMMARY SHEET	
APPENDIX D: NWI MAP OF THE SUBJECT SITE	
APPENDIX E: REDMOND WETLAND INVENTORY MAP OF THE SUBJECT SITE	
APPENDIX F: CRITICAL AREAS MAP SHEETS	
CRITICAL AREAS EXISTING CONDITION MAP (SHEET 1/5)	
SITE PLAN & WETLAND IMPACT MAP (SHEET 2/5)	
INSET 1 - EXISTING WETLAND CONDITIONS (SHEET 3/5)	
INSET 2 – WETLAND IMPACTS (SHEET 4/5)	
WETLAND MITIGATION PLAN MAP (SHEET 5/5)	

1.0 INTRODUCTION

The subject site is comprised of multiple parcels located at 18269 and 18475 Redmond-Fall City Road, as well as 6006, 6032, and 6038 E Lake Sammamish Parkway NE, in the City of Redmond, Washington (parcel #s: 1318300164, 1318300125, 1318300142, 1318300144, 1318300156, and 1825069025) within a portion of Section 7, Township 25N, Range 6E, W.M. The site has a total area of approximately 3.39 acres, and is located between to major roads; E Lake Sammamish Parkway NE to the southwest, and Redmond-Fall City Road to the northeast.

Land use surrounding the project area is primarily dense multi-family residential complexes. To the west and southwest, the site is adjacent to a forest/scrub-shrub environment located within Marymoor Park. The site is comprised of six legal lots, with several single-family residences currently present. The topography of the site has a western aspect, sloping towards E Lake Sammamish Parkway NE.



Figure 1: Aerial view of the subject property.

Wetland Resources, Inc. (WRI) visited the subject site on February 4, 2016, to locate jurisdictional wetlands and streams on the subject parcels. The site investigation verified the location and extent of a wetland, which had been previously delineated and rated by *Altman Oliver Associates, LLC* (corresponding report: “*Wetland Delineation and Rating for Parcel 131830-0164*”). *Wetland Resources Inc.* concurs with the on-site wetland boundary described by *Altman Oliver Associates, LLC*.

One wetland (Wetland A) is located on the subject site, and is located along the center of the southwest property boundary running parallel with E Lake Sammamish Parkway NE. The on-site buffer areas surrounding these sensitive areas are comprised primarily of invasive Himalayan blackberry (*Rubus armeniacus*), with an overstory of Douglas fir (*Pseudotsuga menziesii*) and big-leaf maple (*Acer macrophyllum*).

The *Altman Oliver Associates, LLC* report rates Wetland A as Category IV under the 2004 version of the Department of Ecology’s Washington State Wetland Rating System for Western Washington. *Wetland Resources, Inc.* rated the wetland using the Department of Ecology’s 2014 Washington State Wetland Rating System for Western Washington, as required by the City at the present time. However, the rating for the on-site critical area was consistent with that determined by the *Altman Oliver Associates, LLC* report. Redmond Zoning Code (RZC) 21.64.030(B)(2) requires 50-foot buffers for Category IV wetlands if adjacent to high-intensity impact, which coincides with that recommended within the previous report as well.

1.1 PROJECT DESCRIPTION

The applicant is proposing to develop multifamily housing on the subject site, which is consistent with surrounding land use. Two primary residential buildings will be constructed.

In order to install required frontage improvements, as well as properly grade the site as necessary for construction of the multifamily units, the majority of Wetland A will be excavated. Given the degree of impact to the functions and values associated with these required activities, the entire wetland (3,763 square feet) will be considered to be excavated/permanently impacted.

The applicant proposes to mitigate for the impacts to Wetland A through off-site in-kind mitigation. A suitable mitigation site is located west of the subject site, at 6065 E Lake Sammamish Pkwy NE in the City of Redmond, Washington.



Figure 2: Aerial view of the mitigation site.

A large, highly disturbed wetland system (Wetland B) associated with Lake Sammamish extends onto the mitigation site, with patches of invasive Himalayan blackberry (*Rubus armeniacus*) growing along the northeastern wetland edge and invasive reed canary grass (*Phalaris arundinacea*) growing throughout. A total of 22,578 square feet of this wetland will be enhanced with native vegetation, comprising a 6:1 ratio of replacement, and thus meeting the requirements of RZC Table 21.64.030B.

Mitigation standards and criteria in RZC 21.64.010.L.2.b requires that on-site or off-site compensatory mitigation under control of the applicant must be provided in the immediate vicinity of the proposed activity. Subsequently, RZC 21.64.010.L.2.c specifies in-kind mitigation as the highest priority for off-site mitigation. The proposed mitigation strategy complies with this sequencing requirement by providing in-kind mitigation across the street from the planned wetland impacts.

Critical areas fencing and signage are already present on the mitigation site, thus fulfilling the requirements of RZC 21.64.010.R.1 and 2.

1.2 CRITICAL AREAS CLASSIFICATIONS

1.2.1 Cowardin System Classifications

According to the Cowardin System, as described in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin 1979), the classification for the on-site critical areas are as follows:

Wetland A (on-site): Palustrine, Forested Wetland, Needle-leaved Deciduous, Saturated (PFO2B).

Wetland B (off-site): Palustrine, Emergent Wetland, Persistent, Saturated (PEM1B)*.

*Cowardin classification for Wetland B describes the portion proposed for mitigation, located near the project area. This wetland is very complex; containing all Cowardin vegetation classes.

1.2.2 City of Redmond Classifications

Under Chapter 21.64 of the RZC the on-site critical areas are classified as follows:

Wetland A (on-site)

Category IV wetland: This wetland scores a total of 13 points on the Wetland Rating Form (2014) for Western Washington, which equates to a Category IV rating. Wetland A has a multi-stratum vegetation structure comprising its forested vegetation class. However, vegetation species diversity is minimal, and comprised primarily of invasive blackberry. This wetland scores 4 points (low) for habitat functions, which Redmond Zoning Code equates to providing low habitat value for wildlife (RZC Table 21.64.030A). In the City of Redmond, Category IV wetlands adjacent to current or planned high-intensity land use typically receive a standard buffer of 50 feet.

Wetland B (off-site)

Category I wetland: This wetland scores a total of 23 points on the Wetland Rating Form (2014) for Western Washington, which equates to a Category I rating. Wetland A has a multi-stratum vegetation structure comprising its forested vegetation class, and a high interspersion of habitats. All Cowardin vegetation classes are present within this wetland. Vegetation species diversity is high for the overall wetland system, but is comprised of only a couple invasive species in the mitigation area. Wetland B scores 8 points (high) for habitat functions, which Redmond Zoning Code equates to providing high habitat value for wildlife (RZC Table 21.64.030A). In the City of Redmond, Category I wetlands adjacent to current of planned high-intensity land uses (such as the nearby commercial buildings and Marymoor Park ball fields) typically receive a standard buffer of 300 feet.

2.0 STATEMENT OF QUALIFICATIONS

The work for this Critical Areas Study and Mitigation Plan was conducted by Scott Walters.

Scott Walters holds a Bachelor of Science degree in Wildlife Conservation Biology and Applied Vertebrate Ecology. Additional training includes an advanced certificate in Aquarium and Aquatic Sciences, and a post-Baccalaureate certificate in Wetland Science and Management from the University of Washington. Scott has worked as an ecologist on projects across the country for over 8 years, including scientific study of wetlands, environmental restoration monitoring, endangered species monitoring, and shorebird population research.

3.0 CRITICAL AREAS DETERMINATION REPORT

3.1 PUBLICLY AVAILABLE DATA

Prior to conducting the site investigation, public resource information was reviewed to gather background information on the subject property and the surrounding area in regards to wetlands, streams, and other critical areas. These sources included the following:

USDA/NRCS Web Soil Survey

The northeastern portion of the site is predicted to have Indianola Loamy Sand, 5 to 15 percent slopes; the northwestern portion is predicted as Indiana Loamy Sand, 0 to 5 percent slopes; and the southern extent of the site is predicted to be Seattle Muck. The entire off-site Mitigation area is mapped as Seattle Muck as well. A more detailed soil map unit description is provided in the “3.2 Field Determination Methodology” section below.

DNR FPAMT Mapping Application

A Type-F stream is mapped 0.15 miles west of the site, and a second Type-F is 0.65 miles to the east. However, no hydrologic connection is identified to the subject site, which is physically separated from these features by major roadways on either side.

King County iMap

Across E Lake Sammamish Parkway, *iMap* identifies an extensive wetland complex associated with the northern end of Lake Sammamish, which is drained by the Sammamish River. The subject site is primarily upslope of this wetland, and the separation by the road disallows a direct hydrologic connection between the off-site wetland and the subject site. The presence of the stream identified by *DNR* to the northeast of the site is confirmed, and further identified as Evans Creek. A second wetland complex is associated with Evans Creek. Due to both distance, as well as development, there is no connection between the subject site and this second wetland system.

WDFW SalmonScape Interactive Mapping System

Identifies presence of salmonids within the stream to the northeast (~0.65 miles NE of the site; see *DNR* above), as well as the Sammamish River (~0.8 miles SW of the site). *SalmonScape* does not identify any recorded salmonid distributions in the nearby stream to the southwest (~0.15 mile) identified by *DNR*.

WDFW Priority Habitat and Species (PHS) Interactive Map

Confirms the presence of both wetland complexes identified by *King County iMap*. Additionally, the wetland system associated with Lake Sammamish is designated as a Biodiversity Corridor.

USFWS National Wetlands Inventory (NWI)

Confirms the presence of the wetlands identified by the *WDFW PHS Interactive Map* and *King County iMap*.

City of Redmond 64.4 Wetlands Map

As the majority of the wetland area associated with Lake Sammamish is located in Marymoor Park (outside of the City of Redmond), only those portions within the city are depicted. The Evans Creek Wetlands complex is mapped as well. No wetlands are mapped on the subject site.

3.2 FIELD DETERMINATION METHODOLOGY

Wetland Resources' staff conducted a site investigation of the proposed development site on February 4, 2016. As part of this site visit, the routine delineation previously conducted by *Altman Oliver Associates, LLC* was reviewed. An additional site investigation was conducted on the mitigation site on July 21, 2016. These investigations were performed to locate wetlands and streams occurring within and near the project site, as well as to assess the critical area conditions of the off-site mitigation area. Wetland conditions were evaluated using routine methodology described in the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*, (referred to as the 2010 Regional Supplement). The methodology in the 2010 Regional Supplement coincides with the methodology described in the Washington State Wetlands Identification and Delineation Manual (Washington State Department of Ecology Publication #96-94, March 1997). Our findings are consistent with both manuals.

The following criteria descriptions were used in the boundary determination:

- 1.) Examination of the site for hydrophytic vegetation (species present and percent cover);
- 2.) Examination of the site for hydric soils;
- 3.) Determining the presence of wetland hydrology

The Washington State Department of Ecology document *Determining the Ordinary High Water Mark on Streams in Washington State (Second Review Draft)* (Olson and Stockdale 2010) was used to determine the presence of any streams on the subject site.

3.2.1 Hydrophytic Vegetation Criteria

The 2010 Regional Supplement defines hydrophytic vegetation as “the community of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to exert a controlling influence of the plant species present.” Field indicators were used to determine whether the vegetation meets the definition for hydrophytic vegetation. One of the most common indicators for hydrophytic vegetation is when more than 50 percent of a plant community consists of species rated “Facultative” and wetter on lists of plant species that occur in wetlands.

3.2.2 Soils Criteria and Mapped Description

The manuals define hydric soils as those that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Field indicators are used for determining whether a given soil meets the definition for hydric soils.

According to the NRCS Web Soil Survey, the soil map units Indianola Loamy Sand, 5 to 15 percent slopes and 0 to 5 percent slopes, as well as Seattle Muck, are predicted to occur on the subject property.

Indianola loamy sand is a very deep, somewhat excessively drained soil on terraces and outwash plains. It formed in sandy glacial outwash, and occurs into areas that are 5 to 30 acres in size. The native vegetation is mainly conifers, and elevation is 50 to 500 feet. Typically, the surface is covered with a mat of needles, leaves, and twigs about 2 inches thick. The surface layer is very dark grayish brown loamy sand about 4 inches thick. The subsoil is dark yellowish brown loamy sand about 20 inches thick. The substratum to a depth of 60 inches or more is light olive gray and grayish brown sand. Also included are areas of Everett, Indianola, Pastik, and Ragnar soils and Custer soils in basins. Included areas make up about 15 percent of the total acreage. Permeability of this Indianola soil is rapid. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight. Cut-banks on the soil in this unit are subject to caving in.

Seattle Muck is made up of very poorly drained organic soils that formed in material derived primarily from sedges. These soils are in depressions and valleys on the glacial till plain and also in the river and stream valleys. Slopes are 0 to 1 percent. In a representative profile, the surface layer is black muck about 11 inches thick. It is underlain by dark reddish-brown, black, very dark brown, and dark-brown muck and mucky peat that extends to a depth of 60 inches or more. The

subsurface layers are stratified mucky peat, muck, and peat that formed mostly from sedges. Where these soils adjoin mineral soils, some layers are 25 percent wood fragments. Some areas are up to 30 percent inclusions of Tukwilla soils, which are deep mucks, and Shalcar soils, which are shallow over a mineral substratum; and some areas are up to 15 percent inclusions of the wet Bellingham and Norma soils. Total inclusions do not exceed 30 percent. Permeability is moderate. There is a seasonal high water table at or near the surface. Available water capacity is high.

3.2.3 Hydrology Criteria

As stated in the 2010 Regional Supplement, the “term wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season.” It also explains “areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and chemically reducing conditions, respectively.”

The results of the site investigation verified the findings of *Altman Oliver Associates, LLC*. There is one wetland (A) was identified on the subject site. The wetland was rated pursuant to the *Washington State Wetland Rating System for Western Washington 2014 update* (Hruby 2014). No streams were identified on the subject site.

3.3 WETLAND BOUNDARY DETERMINATION FINDINGS

3.3.1 Wetland A (On-site)

This wetland extends off-site to the southwest, terminating at the edge of E Lake Sammamish Parkway NE. The on-site portion of Wetland A is present along the center of the southwestern property boundary, and is relatively small in size. Wetland A spans approximately 100 feet in length northeast to southwest, and is approximately a 0.086-acre in size.

Dominant vegetation in the on-site portion of Wetland A is represented by Pacific willow (*Salix lasiandra*; FACW), Himalayan blackberry (FACU), and lady fern (*Athyrium filix-femina*; FACW). The majority of the dominant species rate “facultative” or wetter, indicating that a hydrophytic vegetative community is present in the areas mapped as wetland. It is important to note that while vegetation data presented in the USACE wetland determination data forms (*Appendix B*) do not specifically support the presence of Pacific willow within the wetland data plot (data point S1), this is because data was taken near the wetland boundary (where willow was lacking). Presence of lady fern within Wetland A versus absence in the abutting upland areas additionally confirms the presence of a hydrophytic community.

Soils in this wetland from 0 to 10 inches below the surface have a Munsell color of very dark brown (10YR 2/2) with a sandy clay loam texture. From 10 to at least 16 inches below the surface, the soil is dark gray (10YR 4/1) with prominent strong brown (7.5YR 4/6) redoximorphic features, and has a sandy clay loam texture. This soil profile meets the Depleted Below Dark Surface (A11) and Depleted Matrix (F3) hydric soil indicators. Soils were saturated

to the surface at the time of our February 2016 site visit, and the water table was observed at 10 inches below the surface.

Field observations indicate that the area mapped as wetland is flooded, ponded, or saturated long enough during the growing season to develop anaerobic conditions in the upper part of the soils. Therefore, the vegetation, soil, and hydrologic criteria are all met for Wetland A.

3.3.2 Non-wetland Areas Adjacent to Wetland A

In the non-wetland area adjacent to Wetland A, dominant vegetation is represented by big-leaf maple (*Acer macrophyllum*; FACU), western red cedar (*Thuja plicata*; FAC), Douglas fir (*Pseudotsuga menziesii*; FAC), and Himalayan blackberry (*Rubus armeniacus*; FAC). Only half of the dominant species rate “facultative” or wetter, which does not strongly indicate the absence of a hydrophytic vegetative community.

Typical soils in the area adjacent to Wetland A that are mapped as non-wetland have a Munsell color of very dark grayish brown (10YR 3/2), with a sandy clay loam texture, from 0 to 9 inches beneath the soil surface. The underlying soil layer is dark yellowish brown (10YR 4/4) sandy loam, to at least 18 inches beneath the surface. This soil profile does not meet any hydric soil indicators. Soils were slightly moist at the time of our February 2016 site investigation.

Although the dominant vegetative community contains hydrophytic species, hydric soils are absent in these areas, and direct hydrologic indicators are lacking. Therefore, the areas adjacent to Wetland A do not meet wetland criteria.

3.3.3 On-site Wildlife Opportunity

Wetland A and its associated edges are isolated from any nearby habitat due to major roadways and high intensity development in all directions. Therefore the site does not function suitably as a wildlife movement corridor. However, this critical area and the associated buffer contain resources such as food, water, thermal cover, and hiding cover in close proximity for avians that may use the blackberry for perches. Mammalian use is likely minimal due to the isolated nature of the site. Given the simple vegetation structure, as well as the disturbance created by nearby development, the wetland provides relatively low quality wildlife habitat.

No mammalian species were detected during our on-site investigation in February 2016, although several species, including gray squirrels (*Sciurus* spp.), may occur within the area. Avian activity was not strongly detected. However, given the habitat available nearby, it is expected that the following avian species use the area: American Crow (*Corvus brachyrhynchos*), American Robin (*Turdus migratorius*), Steller’s Jay (*Cyanocitta stelleri*), Black-capped Chickadee (*Poecile atricapilla*), Dark-eyed Junco (*Junco hyemalis*), Song Sparrow (*Melospiza melodia*), and kinglets (*Regulus* spp.)

3.3.4 Wetland B (Mitigation Site)

This large and complex wetland system extends onto the mitigation site from the southwest, and is associated with Lake Sammamish and Sammamish River. The area investigated is located at 6065 E Lake Sammamish Blvd NE, across the street from the subject project site. Wetland B has

an undulating shape spanning approximately 3,500 feet in length north to south, approximately 6,700 feet in length east to west, and is approximately a 349-acres in size. The portion of Wetland B extending onto the mitigation site is approximately 3.5-acres.

Dominant vegetation in the mitigation site portion of Wetland B is represented by Scouler's willow (*Salix scouleriana*; FAC), black cottonwood (*Populus balsamifera*; FAC), Himalayan blackberry (FAC), and primarily reed canary grass (*Phalaris arundinacea*; FACW). The majority of the dominant species rate "facultative" or wetter, indicating that a hydrophytic vegetative community is present in the areas mapped as wetland. It is important to note that invasive reed canary grass comprises the vast majority of Wetland B on the mitigation site, with large patches of Himalayan Blackberry along the edges. The willow and cottonwood listed above are locally present in the area near the wetland data plot (data point S3).

Soils in this wetland from 0 to 16 inches below the surface have a Munsell color of very dark grayish brown (10YR 3/2) with prominent dark yellowish brown redoximorphic features (10YR 3/6), and a mixture of loam and histic textures. This soil profile meets the Redox Dark Surface (F6) hydric soil indicator, and likely meets the Histosol (A1) indicator as well. Soils were dry at the time of our late July 2016 site visit. However, given the significantly lower topography of the area mapped as wetland relative to the surrounding area, the secondary wetland hydrology indicator, Geomorphic Position (D2), is met. Additionally, administration of a FAC-neutral test (where "facultative" vegetation species are not considered) leaves only reed canary grass (FACW), also meeting the FAC-Neutral Test (D5) secondary wetland hydrology indicator.

Field observations indicate that the area mapped as wetland is flooded, ponded, or saturated long enough during the growing season to develop anaerobic conditions in the upper part of the soils. Therefore, the vegetation, soil, and hydrologic criteria are all met for Wetland B.

3.3.5 Non-wetland Areas Adjacent to Wetland B

In the non-wetland area adjacent to Wetland B, dominant vegetation is represented by big-leaf maple (FACU), snowberry (*Symphoricarpos albus*; FACU), Himalayan blackberry (FAC), and bent grass (*Agrostis* spp; FAC). Only half of the dominant species rate "facultative" or wetter, which does not strongly indicate the absence of a hydrophytic vegetative community. Additionally, although not dominant, red flowering currant (*Ribes sanguineum*; FACU) and ox-eye daisy (*Leucanthemum vulgare*; FACU) were also present.

Typical soils in the area adjacent to Wetland B that are mapped as non-wetland have a Munsell color of very dark grayish brown (10YR 3/2), with a loam texture, from 0 to 18 inches beneath the soil surface. This soil profile does not meet any hydric soil indicators. Soils were dry at the time of our late July 2016 site investigation.

Although the dominant vegetative community is potentially hydrophytic, administration of a FAC-neutral test leaves big-leaf maple (FACU) and snowberry (FACU), further indicating upland conditions. Hydric soils are absent in these areas, and direct hydrologic indicators are lacking. Given these observed conditions, the areas adjacent to Wetland B on the mitigation site do not meet wetland criteria.

3.3.6 Mitigation Site Wildlife Opportunity

The overall Wetland B system provides excellent, highly-varied wildlife habitat. However, the portion of Wetland B that extends onto the proposed mitigation site affords only minimal wildlife habitat functions. By and large, only a single invasive vegetative species (reed canary grass), and a single hydroperiod (saturated), are present. While the vegetation does serve as cover, and water resources are available in winter and early spring months, the physiognomy of the portion of Wetland B is extremely limited, and few ecological niches are provided. Given the proximity of the nearby heterogeneous habitat structure of Wetland B, an opportunity exists to significantly improve the habitat conditions and functionality for wildlife provided by Wetland B on the mitigation site. Mammalian use includes black-tailed deer (*Odocoileus hemionus columbianus*) during the summer, and beaver (*Castor canadensis*) is present in the adjacent heterogeneous area of the wetland. Given the simple and invasive vegetation structure, as well as the disturbance created by nearby development, the portion of Wetland B on the mitigation site provides relatively low quality wildlife habitat.

Avian activity was not strongly detected during the site investigation. However, given the habitat available nearby, it is expected that the following avian species use the area: red-winged blackbird (*Agelaius phoeniceus*), American Crow (*Corvus brachyrhynchos*), American Robin (*Turdus migratorius*), Dark-eyed Junco (*Junco hyemalis*), and Song Sparrow (*Melospiza melodia*),

4.0 FUNCTIONS AND VALUES ASSESSMENT

4.1 METHODOLOGY

The methodology for this functions and values assessment is based on professional opinion developed through past field analyses and interpretation. This assessment pertains specifically to the on-site wetlands, but is typical for assessments of similar systems common to western Washington.

4.2 FUNCTIONS AND VALUES COMPONENTS

Wetlands in western Washington perform a variety of ecosystem functions. Included among the most important functions provided by wetlands are stormwater storage and flood flow attenuation, water quality improvement, and fish and wildlife habitat. An assessment of these functions for the project site is provided below.

4.3 EXISTING CONDITIONS

4.3.1 Wetland A (On-site)

The on-site portion of this Category IV wetland is an isolated slope wetland that is unable to sequester a significant volume of hydrology given its size and topography. Wetland A is a forested and scrub-shrub wetland system within a highly developed matrix. The wetland does not flood, only ever becoming saturated. Thus, it provides only a single hydrologic environment throughout the year. The vegetation community is comprised primarily of invasive Himalayan

blackberry, and lacks much structural complexity. Given the poor quality of the vegetative community, as well as disturbed habitat connections, Wetland A provides relatively low wildlife habitat functions. As the only hydroperiod present is saturated only, no fish habitat is available. Additionally, the isolated nature of Wetland A precludes use by fish species as well.

Slope wetlands are intrinsically unable to provide significant flood storage, except marginally within any small depressions that may exist along the slope. Sloped areas with dense, persistently stemmed vegetation moderate runoff surface flows and rates, and provide water quality functions by capturing sediment as surface flows are transported through the vegetative structure. As in depressional wetland situations, sediment particles are often ionically bonded to chemical nutrients and environmental pollutants. The majority of Wetland A is sloped with persistently stemmed vegetation, thus providing these important functions. However, due to its limited size, and a relatively small contributing basin, Wetland A does not provide significant water quality or hydrologic functions. Nor does Wetland A significantly reduce erosion. Additionally, the primary source of hydrology is from a hillside seep, not stormwater surface flows.

4.3.2 Wetland B (Mitigation Site)

This Category I wetland is a large, complex system associated with Lake Sammamish and Sammamish River, and extends onto the mitigation site. The mitigation site portion of the wetland is vegetated almost entirely by reed canary grass with several large patches of Himalayan blackberry; providing very poor wildlife habitat. However, the adjacent area of Wetland B as a heterogeneous physiognomy that provides excellent habitat variety and diverse niche availability.

All HGM types are present throughout the complex structure of Wetland B, providing a wide range of water quality and hydrologic functions. Following standard wetland rating conventions, Wetland B was assessed as a depressional wetland, which is also the HGM type present on the mitigation site. Depressional wetland areas provide flood reduction functions by sequestering surface flows during storm events, thereby reducing the rate of hydrologic input downstream. By providing storage of stormwater, depressions attenuate surface flows, thus allowing floodwaters to reach downstream waterways over a protracted time period. The volumes of downstream water levels are thereby reduced, decreasing over-bank flooding in urbanized areas.

Depressional wetlands also improve water quality by allowing sediment to settle out of the sequestered stormwater due to the reduction in flow velocity. This sediment is often ionically bonded to pollutants such as phosphorous. The single hydroperiod of the mitigation site's depressional area is saturated only, which does not provide the aforementioned functions as effectively as seasonal ponding. This is because of seasonally ponded areas relative contribution of live storage. Seasonal surface water is sequestered within the interstitial spaces of the wetland soil on the mitigation site, which therefore still contributes to live storage. Wetland B has an unrestricted flowing outlet. However, given the size of the wetland, and the variety of the connections between its component parts, the wetland structure effectively attenuates surface water flows through the system. Overall, Wetland B provides a high level of hydrologic and water quality functionality.

4.4 POST-MITIGATION FUNCTIONS AND VALUES

4.4.1 Wetland A (On-site)

In order to complete necessary activities of the proposed project, the entirety of Wetland A (3,763) will be permanently impacted. The applicant proposes to mitigate for these impacts through off-site, in-kind mitigation of Wetland B, located across E Lake Sammamish Pkwy NE from the subject project site. Impacts will be mitigated at a 6:1 replacement ratio, per RZC Table 21.64.030B. The proposed mitigation will replace functions and values lost by the removal of Wetland A, and provide a functional lift given the larger size of the mitigation area and the higher functional potential of Wetland B (Category I).

4.4.2 Wetland B (Mitigation Site)

A total of 22,578 square feet of Wetland B shall be cleared of invasive plants species, and revegetated with native enhancement plantings. This mitigation will provide a 6:1 Replacement ratio in compliance with the code requirements. Given the proximity of the high-functioning Wetland B habitat, an opportunity exists to greatly increase the wildlife habitat functions provided on the mitigation site through the combination of invasive plant removal and enhancement with native vegetation. For example, beaver (*Castor Canadensis*) is present in the adjacent heterogeneous area of the wetland, and it is plausible that improvement of habitat conditions on the mitigation site could extend available habitat for this species. Certainly, an increase in plant complexity across the mitigation area will significantly improve habitat niche availability, provided extended habitat features for wildlife species using the nearby aquatic resources.

The water quality and hydrologic functions provided will be, at a minimum, maintained if not improved through the installation of appropriate hydrophytic plant species. The chosen enhancement vegetation will serve to provide reductions in surface water flows, which will afford these important functions.

5.0 COMPLIANCE WITH RZC 21.64.010.I

RZC 21.64.010.I enumerates a mitigation sequence that is required to be followed in order of priority. Portions of the city of Redmond Zoning code are in italics below, with responses provided in normal text underneath:

I. General Mitigation Standard.

1. *All significant adverse impacts to critical areas functions and values shall be mitigated. Mitigation actions by an applicant or property owner shall occur in the following sequence:*
 - a. *Avoiding the impact altogether by not taking a certain action or parts of actions;*

In order to make economic use of the property, necessary frontage improvements mandated by City of Redmond code will unavoidably excavate the majority of Wetland A. Additionally, appropriate grading that is necessary to construct the residences will impacts remaining areas of

the subject wetland. Given the location of Wetland A along the western property boundary, and the requirements of the city, impact to the subject wetland is unavoidable.

- b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts;*

Given the location of Wetland A along the western property boundary, and the frontage improvements required by the city of Redmond, Wetland A will be unavoidably excavated. Relocation of the proposed multifamily residential structures will not avoid or minimize the impacts associated with this requirement. Neither will adjustments to the timing of the proposed project minimize impacts to Wetland A.

- c. Rectifying the impact to the critical area by repairing, rehabilitating, or restoring the affected environment to the conditions existing at the time of the initiation of the project;*

The affected environment will be graded in order to provide frontage improvements. Therefore, the impacted condition cannot be reversed.

- d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;*

The affected environment will be graded in order to provide frontage improvements. Frontage improvements are maintained in perpetuity, disallowing reduction of impacts over time.

- e. Compensating for the impact by replacing or providing substitute resources or environments; and/or*

The applicant proposes to compensate for the required impacts to Wetland A through off-site, in-kind mitigation directly across East Sammamish Pkwy NE from the project site. Enhancement at the prescribed replacement ratio (6:1) will adequately provide a substitute resource for any lost functions and values by improving those provided by Wetland B on the mitigation site. In this way, the applicant will comply with RZC 21.64.010.L.2.b.

- f. Monitoring the hazard or other required mitigation and taking remedial action when necessary.*

This form of mitigation should not be necessary, as a higher priority within the mitigation sequence (Compensation of wetland impacts off-site) shall be implemented.

6.0 COMPLIANCE WITH RZC 21.64.010.L

RZC 21.64.010.L enumerates a list of performance standards, as well as locational and temporal requirements, associated with critical area mitigation. Portions of the city of Redmond zoning code are in italics below, with responses provided in normal text underneath:

L. Mitigation Standards, Criteria, and Plan Requirements.

1. *Mitigation Performance Standards. Significant adverse impacts to critical area functions and values shall be mitigated. Mitigation actions shall be implemented in the preferred sequence identified in RZC 21.64.010.I. General Mitigation Standard, which include less preferred and/or compensatory mitigation shall demonstrate that:*

a. *All feasible and reasonable measures will be taken to reduce impacts and losses to the critical area or to avoid impacts where avoidance is required by these regulations; and*

The proposed impacts to Wetland A are necessary to construct the required frontage improvements and allow for appropriate grading in order to construct the proposed multifamily residential building. The proposed land use is consistent with that of the surrounding area.

b. *The restored, created or enhanced critical area or buffer will be as viable and persistent as the critical area or buffer area it replaces; and*

Wetland B currently provides a significantly higher level of functional quality than Wetland A. The mitigation site has been selected as a degraded portion of Wetland B and also has a much greater potential to afford quality wildlife habitat areas. The extensive size of Wetland B provides ecologic resilience to the overall viability and persistence of wetland characteristics. Therefore, the degraded areas proposed for enhancement within Wetland B are expected to provide a functional lift to the local watershed, and persist with the implementation of adaptive management.

c. *In the case of wetlands and riparian stream corridors, no overall net loss will occur in wetland or riparian stream corridor functions and values.*

The functional lift provided by the proposed enhancement of Wetland B will more than adequately substitute any functions and values lost due to the loss of Wetland A. This conclusion is based on the higher category, greater complexity and connectivity, and more advantageous location of Wetland B. No impacts to functions and values associated with riparian stream corridors are proposed.

2. *Location and Timing of Mitigation.*

a. *Mitigation shall be provided on-site, unless on-site mitigation is not scientifically feasible due to physical features of the property. The burden of proof shall be on the applicant to demonstrate that mitigation cannot be provided on-site.*

As depicted in the Critical Area Site Map, topography of the subject site has a relatively steep western aspect. Upland areas with high topographic gradient are unable to support wetland creation efforts. This is due to a lack of hydrologic inputs or an opportunity to sequester hydrology in order to inundate an area, which is necessary to develop wetland conditions.

b. *When mitigation cannot be provided on-site, mitigation shall be provided in the immediate vicinity of the permitted activity on property owned or controlled by the applicant, such as an easement, provided such mitigation is beneficial to the critical area and associated resources.*

The applicant is proposing to provide mitigation directly across the street from the subject project site. Mitigation site maintenance shall be under the control of the applicant as an easement, and the proposed mitigation will be beneficial to the Wetland B, as well as associated aquatic resources.

- c. In-kind mitigation shall be provided except when the applicant demonstrates and the Department concurs that greater functional and habitat value can be achieved through out-of-kind mitigation.*

The proposed enhancement of Wetland B shall provide improved wetland habitat, water quality, and hydrologic functions and values. As Wetland A is Category IV, whereas Wetland B is Category I, the proposed mitigation is technically out-of-kind. However, the improved critical area characteristics to the Category I wetland (B) will provide a significantly greater overall lift to the functional and habitat value of the immediate subbasin than could be achieved through in-kind mitigation of a category IV wetland.

Only when it is determined by the Department that subsections L.2.a, L.2.b, and L.2.c of this section are inappropriate and impractical, shall off-site, out-of-kind mitigation be considered.

Given that the improvement to the functions and values through off-site out-of-kind mitigation by enhancement of a Category I wetland will be significantly greater over those that would be associated with off-site in-kind mitigation of a Category IV wetland, the proposed off-site out-of-kind strategy (enhancement of Wetland B) will provide the most practical and efficient method of compensating functional impacts to the immediate subbasin. Adaptive management shall be implemented to ensure successful improvement of functions and values on the proposed mitigation site.

- d. When wetland or riparian stream corridor mitigation is permitted by these regulations on-site or off-site, the mitigation project shall occur near an adequate water supply (river, stream, ground water, stormwater facility outfall) with a hydrologic connection to the critical area to ensure successful development or restoration.*

The proposed mitigation plantings are appropriate for the existing hydrologic regime.

- e. Any agreed upon mitigation proposal shall be completed concurrently with project construction, unless a phased schedule that assures completion prior to occupancy has been approved by the Department.*

Once the proposed mitigation plan is accepted, implementation of mitigation actions shall begin as soon as the planting window begins. The mitigation plan planting window is between October 15 and March 15 of the following year. If the mitigation plan is accepted during this window, implementation shall begin immediately.

- f. Wetland acreage replacement ratios shall be as specified in RZC 21.64.030.C.8.b, Wetland Replacement Ratios.*

Table 21.64.030B (referenced by the above code citation) stipulates a 6:1 replacement ratio for enhancement used to mitigate impacts to Category IV wetlands.

- g. *Restored or created riparian stream corridors, where permitted by these regulations, shall be an equivalent or higher riparian stream corridor value or function than the altered riparian stream corridor.*

No creation or alteration of riparian stream corridor(s) is proposed.

- h. *All off-site mitigation shall be provided within the Redmond city limits.*

The proposed off-site mitigation area is located at 6065 E Lake Sammamish Pkwy NE, which is within the limits of the city of Redmond.

7.0 WETLAND MITIGATION PLAN

7.1 OFF-SITE WETLAND ENHANCEMENT

As compensation for the necessary permanent buffer impacts to Wetland A (project site), the applicant is proposing to remove invasive plant species (other than reed canary grass) from an area of Wetland B (off-site) totaling 22,578 square feet, and enhance it with native vegetation. Specifically, the enhancement area will be located adjacent to the southern boundary of the mitigation site at 6065 E Lake Sammamish Pkwy NE. The enhanced area will create improved habitat that is continuous with the area of Wetland B extending off the mitigation site to the southwest, where this wetland has greater heterogeneity. The intention of this design is to increase available wildlife habitat while simultaneously improving the overall functions of the wetland portion on the mitigation site. The enhancement area will be installed at a 6:1 mitigation ratio.

Prior to enhancement and mitigation plantings, the area will be cleared of invasive reed canary grass and Himalayan blackberry. Groundcover vegetation is not recommended due to the low likelihood of survival considering the nature of reed canary grass. Although reed canary grass will be cleared from the mitigation area, this species is extremely persistent and is expected to return. Therefore, the mitigation strategy for this site will be to densely plant the enhancement area with robust native vegetation that will compete with the invasive species in order to successfully establish native vegetation over time. The strategy laid out in this plan may need to be modified, as circumstances require, as part of an adaptive management solution. These determinations should be made by a qualified wetland biologist, and approved by the City.

The intent of this mitigation plan is to establish a multi-tiered native plant structure persisting in the presence of the invasive reed canary grass. Through scientific study and experience, it has become well known that reed canary grass is unlikely to be entirely removed from a given mitigation site.

7.1.1 Enhancement Plantings

Sitka willow (*Salix sitchensis*) shall be densely installed throughout the mitigation enhancement area to establish a robust aerial coverage layer intended to shade out future reed canary grass. 2-gallon pots shall be planted in clusters of 3, forming a triangle. Clusters will be installed in rows,

creating a grid separated by 3 to 4 feet in either direction. A 3 to 4-foot separation shall be required to accommodate access for mowing regrowth of reed canary grass in between these enhancement plantings. Additional native tree and shrub species tolerant of flooded conditions, red osier (*Cornus sericea*), black twinberry (*Lonicera involucrata*), sweetgale (*Myrica gale*), Sitka spruce (*Picea sitchensis*), Pacific willow (*Salix lucida*), shall be installed as part of the mitigation plan. Red osier and black twinberry will be planted in clusters throughout the enhancement area. The other species shall be interplanted evenly throughout the enhancement area.

Mowing should be conducted at regular intervals, taking care to avoid damage to the plantings. All plants must be clearly marked with bright flagging attached near the top of the plant for identification. Additionally, all plants shall have protective sleeves installed at their base to prevent damage from mowing and potential rodent activity (to be removed at the end of the monitoring period). Installation of mitigation plantings shall occur between October 15 and March 15. A total of 22,578 square feet will be planted with the following at the triangular spacing multiplier identified in RZC*:

COMMON NAME	LATIN NAME	SIZE	SPACING	QUANTITY
1. Sitka spruce	<i>Picea sitchensis</i>	5 gallon	10'	131
2. Pacific willow	<i>Salix lucida</i>	2 gallon	10'	131
3. Sitka willow	<i>Salix sitchensis</i>	2 gallon	6'	181
4. Red osier	<i>Cornus sericea</i>	2 gallon	6'	181
5. Black twinberry	<i>Lonicera involucrata</i>	2 gallon	6'	180
6. Sweetgale	<i>Myrica gale</i>	2 gallon	6'	180

** Any deviations or departures from sizing or placement as prescribed by the code must first receive written approval from City Planning staff*

7.2 PLANTING NOTES

Plant in the early spring or late fall and obtain all plants from a reputable nursery. Care and handling of all plant materials is extremely important to the overall success of the project. The origin of all plant materials specified in this plan shall be native plants, nursery grown in the Puget Sound region of Washington. Some limited species substitution may be allowed, only with the agreement of the landscape designer, wetland biologist, and/or City staff.

Pre-Planting Meeting

Prior to control of invasive species or installation of mitigation plantings, a site meeting between the contracted landscaper and the consulting wetland professional shall occur to resolve any questions that may arise. During this meeting a discussion regarding plant spacing and locations of plant species including wetland verses buffer species shall occur between the landscape contractor or owners, and the consulting wetland professional.

Flagging

All mitigation plantings will be clearly flagged with highly visible flagging tape at the time of the installation. Clear identification of mitigation plants will aide in future assessments of performance standards during monitoring visits.

Handling

Plants shall be handled so as to avoid all damage, including: breaking, bruising, root damage, sunburn, drying, freezing or other injury. Plants must be covered during transport. Plants shall not be bound with wire or rope in a manner that could damage branches. Protect plant roots with shade and wet soil in the time period between delivery and installation. Do not lift container stock by trunks, stems, or tops. Do not remove from containers until ready to plant. Water all plants as necessary to keep moisture levels appropriate to the species horticultural requirements. Plants shall not be allowed to dry out. All plants shall be watered thoroughly immediately upon installation. Soak all containerized plants thoroughly prior to installation. Bare root plants are subject to the following special requirements, and shall not be used unless planted between November 15 and February 15, and only with the permission of wetland professional and/or City staff. Bare root plants must have enough fibrous root to ensure plant survival. Roots must be covered at all times with: mud and/or wet straw, moss, or other suitable packing material until time of installation. Plants whose roots have dried out from exposure will not be accepted at installation inspection.

Storage

Plants stored by the Permittee for longer than one month prior to planting shall be planted in nursery rows and treated in a manner suitable to those species' horticultural requirements. Plants must be re-inspected by the wetland biologist and/or landscape designer prior to installation.

Damaged plants

Damaged, dried out, or otherwise mishandled plants will be rejected at installation inspection. All rejected plants shall be immediately removed from the site.

Plant Names

Plant names shall comply with those generally accepted in the native plant nursery trade. Any question regarding plant species or variety shall be referred to the landscape designer, wetland professional, or City staff. All plant materials shall be true to species and variety and legibly tagged.

Quality and condition

Plants shall be normal in pattern of growth, healthy, well-branched, vigorous, with well-developed root systems, and free of pests and diseases. Damaged, diseased, pest-infested, scraped, bruised, dried out, burned, broken, or defective plants will be rejected. Plants with pruning wounds over 1" in diameter will be rejected.

Roots

All plants shall be containerized, bare root, or whips as specified in the mitigation plan planting schedules, unless explicitly authorized by the wetland professional. Rootbound plants or plants with damaged, cracked, or loose rootballs (major damage) will be rejected. Immediately before installation, plants with minor root damage (some broken and / or twisted roots) must be root-pruned. Matted or circling roots of containerized plantings must be pruned or straightened and the sides of the root ball must be roughened from top to bottom to a depth of approximately half an inch in two to four places. Bare root plantings of woody material are allowed only if installed

between November 15 and February 15, and with permission from the wetland professional and/or City staff.

Sizes

Plant sizes shall be the size indicated in the plant schedule in approved plans. Larger stock may be acceptable provided that it has not been cut back to the size specified, and that the root ball is proportionate to the size of the plant. Smaller stock may be acceptable, and preferable under some circumstances, based on site-specific conditions. Measurements, caliper, and branching shall conform to the American Standard of Nursery Stock by the American Association of Nurserymen (latest edition).

Form

Evergreen trees shall have single trunks and symmetrical, well-developed form. Deciduous trees shall be single trunked unless specified as multi-stem in the plant schedule. Shrubs shall have multiple stems and be well-branched.

Timing of Planting

Unless otherwise determined by City staff, initial planting shall occur between October 15 and March 15. Overall, the earlier plants go into the ground during the dormant period, the more time they have to adapt to the site and extend their root systems before the water demands of spring and summer.

Weeding

Existing and exotic vegetation in the mitigation areas will be hand-weeded from around all newly installed plants at the time of installation and on a routine basis throughout the monitoring period. No chemical control of vegetation on any portion of the site is recommended.

Planting Pits

Planting pits shall be circular or square with vertical sides, and shall be 6" deeper and 12" larger in diameter than the root ball of the plant. Break up the sides of the pit in compacted soils. Set plants upright in pits. Any burlap shall be removed from the planting pit. Backfill shall be worked back into holes such that air pockets are removed without adversely compacting down soils.

Soil Amendments

Soil amendment and/or mulch will only be used if determined to be necessary, and must be approved by a wetland professional and/or the city of Redmond.

Site conditions

The contractor shall immediately notify the landscape designer and/or wetland professional of drainage or soil conditions likely to be detrimental to the growth or survival of plants. Planting operations shall not be conducted under the following conditions: freezing weather, when the ground is frozen, excessively wet weather, excessively windy weather, or in excessive heat.

Fertilizer

Slow release fertilizer may only be used if determined to be necessary, and must be approved by the city of Redmond. Fertilizers shall be applied only at the base of plantings underneath the top layer of soil (that does not make contact with stems of the plants). No fertilizers will be placed in planting holes. Fertilizer will not be used in the first year after installation.

Staking

Most shrubs and many trees DO NOT require any staking. If the plant can stand alone without staking in a moderate wind, do not use a stake. If the plant needs support, then strapping or webbing should be used as low as possible on the trunk to loosely brace the tree with two stakes. Do not brace the tree tightly or too high on the trunk. If the tree is unable to sway, it will further lose the ability to support itself. Do not use wire in a rubber hose for strapping as it exerts too much pressure on the bark. As soon as supporting the plant becomes unnecessary, remove the stakes. All stakes must be removed within two (2) years of installation.

Plant Location

Colored surveyors ribbon or other appropriate marking shall be attached to the installed plants to assist in locating the plants while removing the competing non-native vegetation and during the monitoring period.

Arrangement and Spacing

The plants shall be arranged in a pattern with the appropriate numbers, sizes, species, and distribution that are required in accordance with the approved plans. The actual placement of individual plants shall mimic natural, asymmetric vegetation patterns found on similar undisturbed sites in the area. Spacing of the plantings may be adjusted to maintain existing vegetation with the agreement of the landscape designer, wetland biologist, and/or City staff. However, Shrubs planted in Year 3 (red osier and black twinberry) should be installed in clusters distributed throughout the mitigation area.

Inspection(s)

A wetland biologist shall be present on-site to inspect the plants prior to planting. Minor adjustments to the original design may be required prior to and during construction.

Mulch

No mulch or soil amendments are allowed within the mitigation planting area or any other portion of Wetland B.

7.3 MAINTENANCE

The mitigation areas will require regular maintenance to remove undesirable species and replace vegetation mortality. Maintenance shall occur in accordance with the approved plans and no less than twice per year. Maintenance may include, but will not be limited to: removal of competing grasses (by hand if necessary), irrigation, fertilization (if necessary), and the replacement of plant mortality for each maintenance period. Chemical control, only if approved by City staff, shall be applied by a licensed applicator following all label instructions.

Duration and Extent

In order to achieve performance standards, the permittee shall be responsible for maintaining the mitigation area for the duration of the five-year monitoring period. Maintenance will include: watering, weeding around the base of installed plants, pruning, replacement, re-staking, removal of all classes of noxious weeds (see Washington State Noxious Weeds List, WAC 16-750-005) as well as Himalayan blackberry and reed canary grass, and any other allowable measures needed to ensure plant survival.

Survival

The permittee shall be responsible for the health of 100% of all newly installed plants for one growing season after installation has been accepted by the City of Redmond. A growing season for these purposes is defined as occurring from spring to spring (March 15 to March 15 of the following year). For fall installation, the growing season will begin the following spring. The permittee shall replace any plants that are failing, weak, defective in manner of growth, or dead during this growing season.

Installation Timing for Replacement Plants

Replacement plants shall be installed between October 15 and March 15, unless otherwise determined.

Standards for Replacement Plants

Replacement plants shall meet the same standards for size and type as those specified for the original installation, unless otherwise directed by a qualified professional.

Replanting

Plants that have settled in their planting pits too deep, too shallow, loose, or crooked shall be replanted.

Reflagging

Any installed mitigation planting that has deteriorated flagging shall have that flagging replaced with highly visible flagging tape. Clear identification of mitigation plants will aide in future assessments of performance standards during monitoring visits.

Mowing

Areas around the enhancement planting shall be mowed to remove reed canary grass. Care must be taken to avoid damaging the plants. Mowing maintenance shall happen a no less than twice per year, or as necessary to control reed canary grass.

Herbicides / Pesticides

Unless deemed absolutely necessary by the consulting biologist and/or the City biologist, chemical controls shall not be used in the mitigation area, sensitive areas, or their buffers. Any chemical controls used shall be applied by a licensed applicator following all label instructions.

Irrigation / Watering

Water shall be provided during the dry season (June 1 through October 15) for the first two years after any mitigation plant installation to ensure plant survival and establishment. A temporary above ground irrigation system and/or water truck should provide water. Water should be applied at a rate of 1" of water twice per week for the first year following any plant installation, and 1" per week during the second year following any plant installation. If mitigation plantings are installed to replace mortality, this irrigation schedule restarts. Irrigation may be required after the first two years to maintain plant survival.

General

The permittee shall include in general maintenance activities the replacement of any vandalized or damaged signs, habitat features, fences, or other structural components of this mitigation site.

7.4 GENERAL PROJECT NOTES

Pre-Construction Meeting

Mitigation projects are typically more complex to install than can be described in plans. Careful monitoring by a wetland professional for all portions of this project is strongly recommended. Construction timing and sequencing is important to the success of this type of project. There will be a pre-construction meeting on this site between the Permittee, consulting wetland professional, and laborers. The objective will be to verify the location of erosion control facilities, verify the location of mitigation areas, and to discuss project sequencing.

Inspections

A qualified wetland professional shall be contracted to periodically inspect the mitigation installation described in this plan. Minor adjustments to the original design may be necessary prior to and during construction due to unusual or hidden site conditions. A City of Redmond representative and/or the consulting professional will make these decisions during construction.

8.0 PROJECT MONITORING PROGRAM

8.1 PROGRAM DETAILS

8.1.1 Inspection and Reporting Requirements

Initial compliance/as-built report will be prepared at completion of the mitigation installation.

Annual maintenance and monitoring site inspection will occur no less than twice per year; once at the end of spring or beginning of summer, and again at the end of summer or the beginning of fall (prior to leaf-drop) for 5 years, or until performance standards are achieved.

Annual monitoring reports will be submitted in the fall of each monitored year for 5 years, or until performance standards are achieved.

8.1.2 Monitoring Components

Purpose for Monitoring

The purpose for monitoring this mitigation project shall be to evaluate its success. Success will be determined if monitoring shows, at the end of the monitoring period that the definitions of success stated below are met. The property owner shall grant access to the mitigation area for inspection and maintenance to the contracted landscaper, wetland specialist, and/or the City of Redmond during the period of the bond or until the project is evaluated as successful. Monitoring shall be performed twice per year.

Monitoring

Monitoring shall be conducted for five years in accordance with the approved Mitigation Plan. The monitoring period will begin once the City receives written notification confirming the mitigation plan has been implemented, and City staff (or contracted biologist) inspects the site and issues approval of the installation.

Vegetation Monitoring

Sampling points or transects will be established for vegetation monitoring and photo points will be established from which photos will be taken throughout the monitoring period. Permanent sampling points must be identified on the mitigation site plans in the first monitoring report (they may be drawn on approved plans by hand). Each sampling point shall detail herbaceous, shrub, and tree coverage. Monitoring of vegetation sampling points shall occur no less than twice annually between May 15 and October 30 (prior to leaf drop) as detailed in section 8.1.1 of this report, unless otherwise specified.

Photo points

No less than two permanent photo points will be established within the mitigation area. Photographs will be taken from these points to visually record condition of the enhancement area. Photos shall be taken annually between May 15 and October 30 (prior to leaf drop), unless otherwise specified.

Monitoring Report Contents

Monitoring reports shall be submitted by November 31 of each year during the monitoring period. As applicable, monitoring reports must include descriptions / data for:

1. Site plan and vicinity map
2. Historic description of project, including date of installation, current year of monitoring, restatement of mitigation / restoration goals, and performance standards
3. Plant survival, vigor, and areal coverage for every plant community (transect or sampling point data), and explanation of monitoring methodology in the context of assessing performance standards
4. Current condition/need for replacement of flagging that identifies mitigation plantings
5. Wetland and buffer conditions, e.g., surrounding land use, use by humans, and/or wild and domestic creatures
6. Observed wildlife, including amphibians, avians, and others
7. Assessment of nuisance / exotic biota and recommendations for management
8. Receipts for any structural repair or replacement

9. Color photographs taken from permanent photo-points that shall be depicted on the monitoring report map

8.2 PROJECT SUCCESS & COMPLIANCE

8.2.1 Criteria for Success

Upon completion of the proposed mitigation project installation, an inspection by a qualified wetland professional shall be made to determine plan compliance. An as-built report will be supplied to the City of Redmond within seven (7) days after the completion of planting, to show compliance with the mitigation plan. The qualified wetland professional will perform condition monitoring of the plantings and provide reports according to the schedule described in Section 8.1.1.

8.2.2 Goal

To enhance the degraded northwestern portion of Wetland B so that it provides greater ecological functions and values than the currently provided.

8.2.3 Definition of Success

The mitigation project goal will be deemed successful when objectives are met, as evidenced through the observation of set performance standards.

8.2.4 Objectives

Objective 1: To establish a more diverse, mostly native plant community in the degraded area of Wetland B that will persist and create an appropriate vegetative matrix.

Objective 2: To have significant native vegetative cover throughout the enhanced area.

Objective 3: To remove existing invasive species (except reed canary grass), and limit the establishment and spread of those species in the buffer.

Note: Reed canary grass has been shown as impractical to remove in well-established conditions due to its persistent nature. Therefore, Objectives do not include the complete removal of reed canary grass.

8.2.5 Performance Standards

The objectives will be considered successfully met when, and if, the following performance standards are observed:

Performance Standard 1

End of Year 1:

- At least 90 percent survival/establishment of newly installed Sitka willow whips.
- No more than 5 percent cover by invasive plant species (excepting reed canary grass).

Performance Standard 2

End of Year 2:

- At least 80 percent survival of installed Sitka willow whips.
- No more than 10 percent cover by invasive plant species (excepting reed canary grass).

Performance Standard 3

End of Year 3:

- At least 70 percent survival of installed Sitka willow whips.
- 100 percent survival of newly installed plant species from Year 3 plant list.
- At least 30 percent aerial coverage by native species.
- No more than 10 percent cover by invasive plant species (excepting reed canary grass).

Performance Standard 4

End of Year 4:

- At least 60 percent survival of installed Sitka willow whips.
- 90 percent survival of installed plant species from Year 3 plant list.
- At least 45 percent aerial coverage by native species.
- No more than 10 percent cover by invasive plant species (excepting reed canary grass).

Performance Standard 5

End of Year 5:

- 75 percent cumulative survival of installed plant species from Years 1 and 3 plant lists.
- At least 65 percent aerial coverage by native species.
- No more than 10 percent cover by invasive plant species (excepting reed canary grass).

When assessing aerial coverage and presence of species, native volunteer plants may be included when making calculations. However, for the purpose of assessing survival of planted species, only installed plantings shall be considered.

8.3 CONTINGENCY PLAN

If 20% of the plants are severely stressed during any of the inspections, or it appears 20% may not survive, additional plantings of the same species may be added to the planting area. Prior to implementation of the contingency plan, a site meeting will be conducted with City staff to determine the likely cause of mitigation issues and recommend specific measure. Depending on the cause, elements of a contingency plan may include, but will not be limited to: more frequent maintenance (ie: more aggressive weed and invasive species control), herbicide application, additional mulching, pest control, replacement of plant sleeves, replanting with larger plant material, species substitution, and/or increased irrigation.

9.0 PERFORMANCE BOND

The following is a cost estimate for plant materials, labor, monitoring, and maintenance. During the preparation of the CCR's a bid will be provided to assist in refining this cost. This cost

estimate below does not represent an actual bid.

Plants	
\$20/2 gallon container or bare root	\$17,060.00
\$36.00/5 gallon container or bare root	\$4,716.00
Labor/Installation:	\$2,660.00
Invasive Species Removal/Maintenance (\$2,500/year)	\$12,500.00
Irrigation:	\$1,560.00
Estimated cost of monitoring:	\$4,500.00
Subtotal:	\$42,996.00
<u>9.5% Sales Tax:</u>	<u>\$4,084.62</u>
Total:	\$47,080.62
125% Performance/ Maintenance Bond*:	\$58,850.76

*A performance and maintenance bond is required to ensure the applicant's compliance with the terms of the mitigation agreement. Per RZC 21.76.090(F)(4), the cost of the performance bond must be 125 percent of the cost of mitigation (i.e. installation, monitoring, and maintenance).

10.0 USE OF THIS REPORT

This Critical Area Study and Mitigation Plan is supplied to MSPT XVIII LLC as a means of determining on-site critical area conditions, and mitigating for activities within critical areas and associated buffers, as required by The City of Redmond during the permitting process. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions.

The laws applicable to wetlands are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report, and any implied representation or warranty is disclaimed.

Wetland Resources, Inc.

A handwritten signature in black ink that reads "Scott Walters". The signature is written in a cursive, flowing style.

Scott Walters
Associate Ecologist

11.0 REFERENCES

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APPENDIX A

DEPARTMENT OF ECOLOGY WETLAND RATING FORMS

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: Feb 4, 2016
 Rated by S. Walters Trained by Ecology? Yes No Date of training 3/2014
 HGM Class used for rating SLOPE Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (figures can be combined).
 Source of base aerial photo/map ESRI World Imagery

OVERALL WETLAND CATEGORY IV (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

- Category I** – Total score = 23 - 27
 Category II – Total score = 20 - 22
 Category III – Total score = 16 - 19
 Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality		Hydrologic		Habitat				
<i>Circle the appropriate ratings</i>									
Site Potential	H	M	<input type="checkbox"/> L	H	M	<input type="checkbox"/> L	H	M	<input type="checkbox"/> L
Landscape Potential	H	<input type="checkbox"/> M	L	H	M	<input type="checkbox"/> L	H	M	<input type="checkbox"/> L
Value	H	<input type="checkbox"/> M	L	H	<input type="checkbox"/> M	L	H	<input type="checkbox"/> M	L
Score Based on Ratings	5		4		4		13		

Score for each function based on three ratings (order of ratings is not important)

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	<input checked="" type="checkbox"/>

Wetland name or number A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	A1
Hydroperiods	H 1.2	A1
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	A5
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	A5
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	S 2.1, S 5.1	A1
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	A2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	A3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	A4

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

NO – go to 2

YES – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – **Saltwater Tidal Fringe (Estuarine)**

YES – **Freshwater Tidal Fringe**

*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 an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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 all** of the following criteria?

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (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**.

NO – go to 5

YES – The wetland class is **Slope**

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 <3 ft diameter and less than 1 ft deep).

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 2 years.

Wetland name or number A

NO – go to 6

YES – The wetland class is **Riverine**

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

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 the wetland unit being scored.

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 HGM 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.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable 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 A

SLOPE WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: <i>(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)</i> <input type="checkbox"/> Slope is 1% or less points = 3 <input type="checkbox"/> Slope is > 1%-2% points = 2 <input type="checkbox"/> Slope is > 2%-5% points = 1 <input checked="" type="checkbox"/> Slope is greater than 5% points = 0		0
S 1.2. <u>The soil 2 in below the surface (or duff layer)</u> is true clay or true organic (use NRCS definitions): Yes = 3 No = 0		0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. <i>Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.</i> <input type="checkbox"/> Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 <input type="checkbox"/> Dense, uncut, herbaceous plants > ½ of area points = 3 <input checked="" type="checkbox"/> Dense, woody, plants > ½ of area points = 2 <input type="checkbox"/> Dense, uncut, herbaceous plants > ¼ of area points = 1 <input type="checkbox"/> Does not meet any of the criteria above for plants points = 0		2
Total for S 1 Add the points in the boxes above		2

Rating of Site Potential If score is: 12 = H 6-11 = M 0-5 = L *Record the rating on the first page*

S 2.0. Does the landscape have the potential to support the water quality function of the site?		
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? Yes = 1 No = 0		1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources _____ Yes = 1 No = 0		0
Total for S 2 Add the points in the boxes above		1

Rating of Landscape Potential If score is: 1-2 = M 0 = L *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?		
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0		0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? <i>At least one aquatic resource in the basin is on the 303(d) list.</i> Yes = 1 No = 0		1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES if there is a TMDL for the basin in which unit is found.</i> Yes = 2 No = 0		0
Total for S 3 Add the points in the boxes above		1

Rating of Value If score is: 2-4 = H 1 = M 0 = L *Record the rating on the first page*

The wetland is within 1 mile down-gradient of a 303d listed aquatic area. However, the wetland is not within the basin contributing to the 303d condition of that area.

Wetland name or number A

SLOPE WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion

S 4.0. Does the site have the potential to reduce flooding and stream erosion?

S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. <i>Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows.</i>	0
<input type="checkbox"/> Dense, uncut, rigid plants cover > 90% of the area of the wetland	points = 1
<input checked="" type="checkbox"/> All other conditions	points = 0

Rating of Site Potential If score is: 1 = M 0 = L

Record the rating on the first page

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?

S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff?	0
Yes = 1 <input type="checkbox"/> No = <input checked="" type="checkbox"/>	

Rating of Landscape Potential If score is: 1 = M 0 = L

Record the rating on the first page

S 6.0. Are the hydrologic functions provided by the site valuable to society?

S 6.1. Distance to the nearest areas downstream that have flooding problems:	1
<input type="checkbox"/> The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)	points = 2
<input checked="" type="checkbox"/> Surface flooding problems are in a sub-basin farther down-gradient	points = 1
<input type="checkbox"/> No flooding problems anywhere downstream	points = 0

S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	0
Yes = 2 <input type="checkbox"/> No = <input checked="" type="checkbox"/>	

Total for S 6	Add the points in the boxes above	1
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Rating of Value If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- Aquatic bed 4 structures or more: points = 4
 - Emergent 3 structures: points = 2
 - Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1
 - Forested (areas where trees have > 30% cover) 1 structure: points = 0
- If the unit has a Forested class, check if:*
- The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

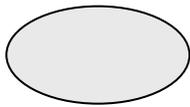
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

- If you counted:
- > 19 species points = 2
 - 5 - 19 species points = 1
 - < 5 species points = 0

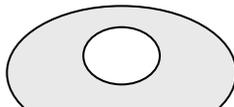
1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



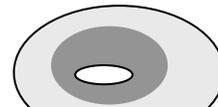
None = 0 points



Low = 1 point

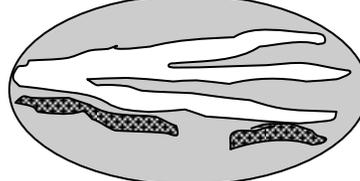
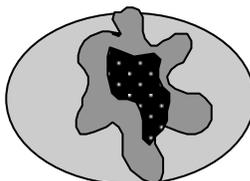
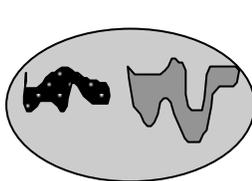


Moderate = 2 points



1

All three diagrams in this row are **HIGH** = 3points



Wetland name or number A

<p>H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>		1
Total for H 1	Add the points in the boxes above	4

Rating of Site Potential If score is: 15-18 = H 7-14 = M 0-6 = L *Record the rating on the first page*

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>0</u> = <u>0</u> %</p> <p>If total accessible habitat is:</p> <p><input type="checkbox"/> > 1/3 (33.3%) of 1 km Polygon points = 3</p> <p><input type="checkbox"/> 20-33% of 1 km Polygon points = 2</p> <p><input type="checkbox"/> 10-19% of 1 km Polygon points = 1</p> <p><input checked="" type="checkbox"/> < 10% of 1 km Polygon points = 0</p>		0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: % undisturbed habitat <u>17</u> + [(% moderate and low intensity land uses)/2] <u>11</u> = <u>28</u> %</p> <p><input type="checkbox"/> Undisturbed habitat > 50% of Polygon points = 3</p> <p><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches points = 2</p> <p><input type="checkbox"/> Undisturbed habitat 10-50% and > 3 patches points = 1</p> <p><input type="checkbox"/> Undisturbed habitat < 10% of 1 km Polygon points = 0</p>		2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p><input checked="" type="checkbox"/> > 50% of 1 km Polygon is high intensity land use points = (- 2)</p> <p><input type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity points = 0</p>		-2
Total for H 2	Add the points in the boxes above	0

Rating of Landscape Potential If score is: 4-6 = H 1-3 = M < 1 = L *Record the rating on the first page*

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>		
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: points = 2</p> <p><input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p><input checked="" type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1</p> <p><input type="checkbox"/> Site does not meet any of the criteria above points = 0</p>		1

Rating of Value If score is: 2 = H 1 = M 0 = L *Record the rating on the first page*

Wetland name or number A

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; 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.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161 – see web link above).
- 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.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).
- 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.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<p>SC 1.0. Estuarine wetlands</p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,</p> <p><input type="checkbox"/> Vegetated, and</p> <p><input type="checkbox"/> With a salinity greater than 0.5 ppt</p> <p style="text-align: right;">Yes – Go to SC 1.1 No = Not an estuarine wetland</p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p style="text-align: right;">Yes = Category I No - Go to SC 1.2</p>	Cat. I
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</p> <p><input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p> <p style="text-align: right;">Yes = Category I No = Category II</p>	Cat. I Cat. II
<p>SC 2.0. Wetlands of High Conservation Value (WHCV)</p> <p>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p style="text-align: right;">Yes – Go to SC 2.2 No – Go to SC 2.3</p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p style="text-align: right;">Yes = Category I No = Not a WHCV</p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</p> <p style="text-align: right;">Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a WHCV</p> <p>SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p> <p style="text-align: right;">Yes = Category I No = Not a WHCV</p>	Cat. I
<p>SC 3.0. Bogs</p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?</p> <p style="text-align: right;">Yes – Go to SC 3.3 No – Go to SC 3.2</p> <p>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?</p> <p style="text-align: right;">Yes – Go to SC 3.3 No = Is not a bog</p> <p>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?</p> <p style="text-align: right;">Yes = Is a Category I bog No – Go to SC 3.4</p> <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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.</p> <p>SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?</p> <p style="text-align: right;">Yes = Is a Category I bog No = Is not a bog</p>	Cat. I

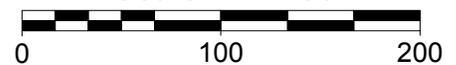
Wetland name or number A

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16010 MSPT XVIII LLC - REDMOND-FALL CITY ROAD
WETLAND RATING FIGURE A1 - WETLAND A



Scale 1" = 100'



LEGEND	
	SCRUB-SHRUB
	FORESTED VEGETATION
	SATURATED ONLY
	150' FROM WL BOUNDARY

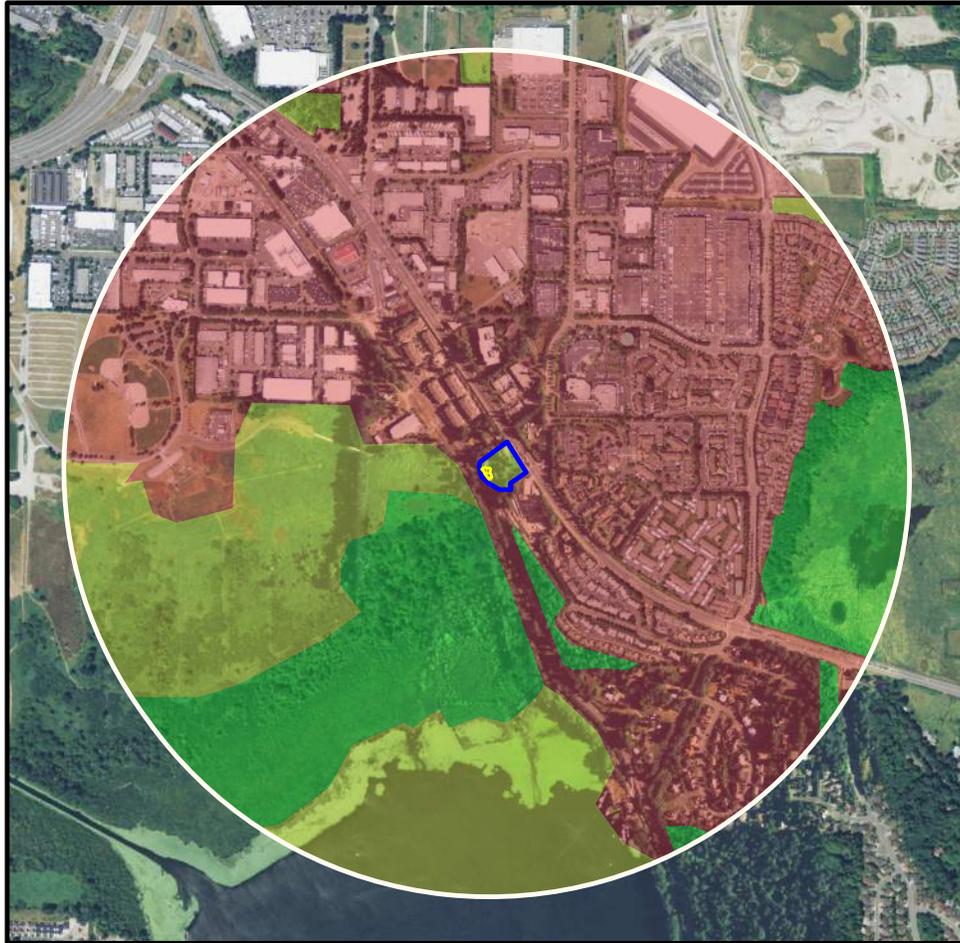
Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland A

MSPT XVIII LLC
ATTN: Marc Boettcher
12332 NE 115th Place
Kirkland, WA 98033

Figure A1
WRI Job # 16010
Drawn by: SW

16010 MSPT XVIII LLC - REDMOND-FALL CITY ROAD
 WETLAND RATING FIGURE A2 - WETLAND A



LEGEND	
	RELATIVELY UNDISTURBED
	LOW/MOD. INTENSITY
	HIGH INTENSITY
	ACCESSIBLE HABITAT
	WETLAND
	1 KM FROM WETLAND



Scale 1" = 1,500'



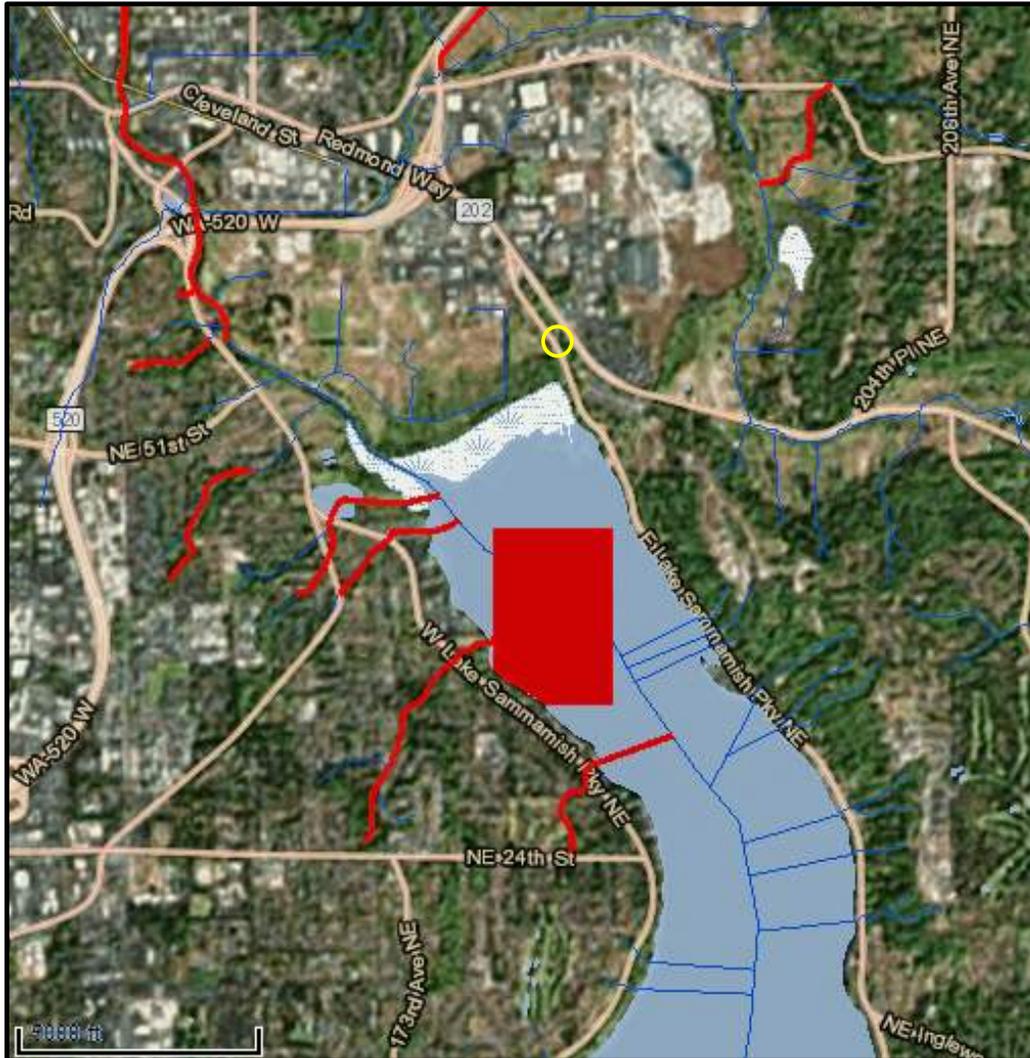
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 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

**WETLAND RATING
 Wetland A**

MSPT XVIII LLC
 ATTN: Marc Boettcher
 12332 NE 115th Place
 Kirkland, WA 98033

Figure A2
 WRI Job # 16010
 Drawn by: SW

16010 MSPT XVIII LLC - REDMOND-FALL CITY ROAD
 WETLAND RATING FIGURE A3 - WETLAND A



Scale 1" = 4,000'



LEGEND

 WETLAND LOCATION

 AQUATIC RESOURCES ON THE 303(d) LIST



Wetland Resources, Inc.
 Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

**WETLAND RATING
 Wetland A**

MSPT XVIII LLC
 ATTN: Marc Boettcher
 12332 NE 115th Place
 Kirkland, WA 98033

Figure A3
 WRI Job # 16010
 Drawn by: SW

16010 MSPT XVIII LLC - REDMOND-FALL CITY ROAD
WETLAND RATING FIGURE A4 - WETLAND A

WRIA 8: Cedar-Sammamish

The following table lists overview information for water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



Counties

- [King](#)
- [Snohomish](#)

Waterbody Name	Pollutants	Status**	TMDL Lead
Ballinger Lake	Total Phosphorus	Approved by EPA	Tricia Shoblom 425-649-7288
Bear-Evans Creek Basin	Fecal Coliform	Approved by EPA	Joan Nolan 425-649-4425
	Dissolved Oxygen Temperature	Approved by EPA	
Cottage Lake	Total Phosphorus	Approved by EPA Has an implementation plan	Tricia Shoblom 425-649-7288
Issaquah Creek Basin	Fecal Coliform	Approved by EPA	Joan Nolan 425-649-4425
Little Bear Creek Tributaries: Trout Stream Great Dane Creek Cutthroat Creek	Fecal Coliform	Approved by EPA	Ralph Svrcek 425-649-7036
North Creek	Fecal Coliform	Approved by EPA Has an implementation plan	Ralph Svrcek 425-649-7036
Pipers Creek	Fecal Coliform	Approved by EPA	Joan Nolan 425-649-4425
Sammamish River	Dissolved Oxygen Temperature	Field work starts summer 2015	Ralph Svrcek 425-649-7036
Swamp Creek	Fecal Coliform	Approved by EPA Has an implementation plan	Ralph Svrcek 425-649-7036

** Status will be listed as one of the following: Approved by EPA, Under Development or Implementation

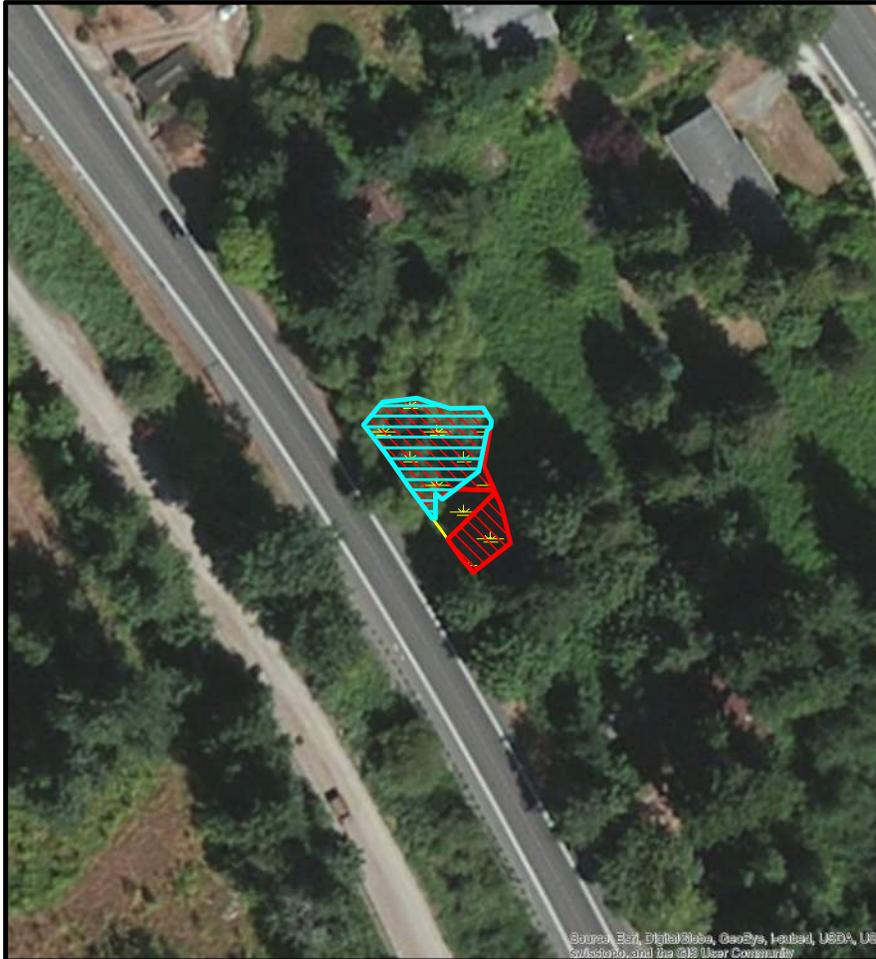
Wetland Resources, Inc.
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Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

**WETLAND RATING
Wetland A**

MSPT XVIII LLC
ATTN: Marc Boettcher
12332 NE 115th Place
Kirkland, WA 98033

Figure A4
WRI Job # 16010
Drawn by: SW

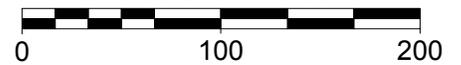
16010 MSPT XVIII LLC - REDMOND-FALL CITY ROAD
WETLAND RATING FIGURE A5 - WETLAND A



Source: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Scale 1" = 100'



LEGEND	
	WETLAND
	DENSE WOODY
	DENSE UNCUT HERBACIOUS
	DENSE UNCUT RIDGID

Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland A

MSPT XVIII LLC
ATTN: Marc Boettcher
12332 NE 115th Place
Kirkland, WA 98033

Figure A5
WRI Job # 16010
Drawn by: SW

Wetland name or number B (Off-site)

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland B (Off-site) Date of site visit: July 21, 2016
 Rated by S. Walters Trained by Ecology? Yes No Date of training March 2015
 HGM Class used for rating DEPRESSIONAL Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (figures can be combined).
 Source of base aerial photo/map ESRI World Imagery

OVERALL WETLAND CATEGORY I (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

- Category I** – Total score = 23 - 27
 Category II – Total score = 20 - 22
 Category III – Total score = 16 - 19
 Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	<input checked="" type="checkbox"/> M L	
Landscape Potential	<input checked="" type="checkbox"/> H M L	<input checked="" type="checkbox"/> H M L	H <input checked="" type="checkbox"/> L	
Value	<input checked="" type="checkbox"/> H M L	H <input checked="" type="checkbox"/> L	<input checked="" type="checkbox"/> H M L	TOTAL
Score Based on Ratings	8	7	8	23

Score for each function based on three ratings (order of ratings is not important)

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	<input checked="" type="checkbox"/>

Wetland name or number **B (Off-site)**

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	B1
Hydroperiods	D 1.4, H 1.2	B1
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	B1
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	B1
Map of the contributing basin	D 4.3, D 5.3	B1
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	B2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	B3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	B4

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

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 except during floods?

NO – go to 2

YES – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine)

YES – Freshwater Tidal Fringe

*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 an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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 all** of the following criteria?

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (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**.

NO – go to 5

YES – The wetland class is **Slope**

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 <3 ft diameter and less than 1 ft deep).

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 2 years.

Wetland name or number **B (Off-site)**

NO – go to 6

YES – The wetland class is **Riverine**

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

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 the wetland unit being scored.

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 HGM 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.

HGM classes within the wetland unit being rated		HGM class to use in rating
Slope + Riverine	<input type="checkbox"/>	Riverine
Slope + Depressional	<input type="checkbox"/>	Depressional
Slope + Lake Fringe	<input type="checkbox"/>	Lake Fringe
Depressional + Riverine along stream within boundary of depression	<input type="checkbox"/>	Depressional
Depressional + Lake Fringe	<input type="checkbox"/>	Depressional
Riverine + Lake Fringe	<input type="checkbox"/>	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	<input type="checkbox"/>	Treat as ESTUARINE

*If you are still unable 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.*

This complex wetland system has at least three (3) HGM classes. Therefore, it is rated as depressional.

Wetland name or number B (Off-site)

DEPRESSIONAL AND FLATS WETLANDS		
Water Quality Functions - Indicators that the site functions to improve water quality		
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> <input type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 <input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 <input checked="" type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 <input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	1	
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0	4	
D 1.3. <u>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</u> <input type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5 <input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > ½ of area points = 3 <input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1 <input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0	3	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> <input type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4 <input checked="" type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2 <input type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 0	2	
Total for D 1	Add the points in the boxes above	10

Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source <u>Large Public Events</u>	Yes = 1 No = 0	1
Total for D 2	Add the points in the boxes above	3

Rating of Landscape Potential If score is: 3 or 4 = H 1 or 2 = M 0 = L Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	4

Rating of Value If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

--	--

Wetland name or number B (Off-site)

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
<input type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	0
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
<input checked="" type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.		
<input checked="" type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	7
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
<input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland	points = 3	
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water	points = 1	
<input type="checkbox"/> Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.		
<input type="checkbox"/> The area of the basin is less than 10 times the area of the unit	points = 5	0
<input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit	points = 3	
<input checked="" type="checkbox"/> The area of the basin is more than 100 times the area of the unit	points = 0	
<input type="checkbox"/> Entire wetland is in the Flats class	points = 5	
Total for D 4		7

Add the points in the boxes above

Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
Total for D 5		3

Add the points in the boxes above

Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
<input type="checkbox"/> • Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	1
<input checked="" type="checkbox"/> • Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____	points = 0	
<input type="checkbox"/> There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
	Yes = 2 <input type="checkbox"/> No = 0	0
Total for D 6		1

Add the points in the boxes above

Rating of Value If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number **B (Off-site)**

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- Aquatic bed 4 structures or more: points = 4
 - Emergent 3 structures: points = 2
 - Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1
 - Forested (areas where trees have > 30% cover) 1 structure: points = 0
- If the unit has a Forested class, check if:*
- The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

4

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- Permanently flooded or inundated 4 or more types present: points = 3
- Seasonally flooded or inundated 3 types present: points = 2
- Occasionally flooded or inundated 2 types present: points = 1
- Saturated only 1 type present: points = 0
- Permanently flowing stream or river in, or adjacent to, the wetland
- Seasonally flowing stream in, or adjacent to, the wetland
- Lake Fringe wetland** **2 points**
- Freshwater tidal wetland** **2 points**

2

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

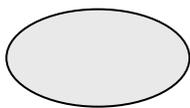
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

- If you counted: > 19 species points = 2
- 5 - 19 species points = 1
- < 5 species points = 0

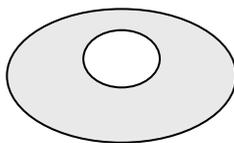
2

H 1.4. Interspersion of habitats

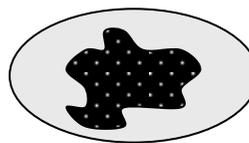
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



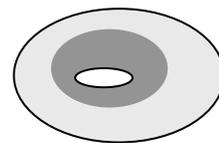
None = 0 points



Low = 1 point



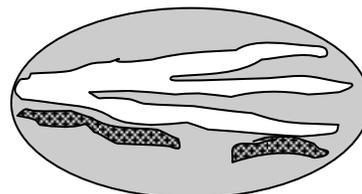
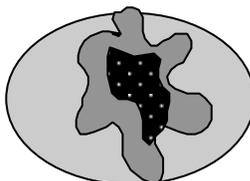
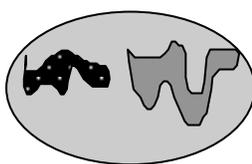
Moderate = 2 points



3

All three diagrams in this row are

HIGH = 3points



Wetland name or number **B (Off-site)**

<p>H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input checked="" type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input checked="" type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>) 	5
<p>Total for H 1</p>	<p style="text-align: right;">Add the points in the boxes above</p> <p style="text-align: center;">16</p>

Rating of Site Potential If score is: 15-18 = H 7-14 = M 0-6 = L *Record the rating on the first page*

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>	
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>17</u> = <u>17</u> % If total accessible habitat is:</p> <ul style="list-style-type: none"> <input type="checkbox"/> > 1/3 (33.3%) of 1 km Polygon points = 3 <input type="checkbox"/> 20-33% of 1 km Polygon points = 2 <input checked="" type="checkbox"/> 10-19% of 1 km Polygon points = 1 <input type="checkbox"/> < 10% of 1 km Polygon points = 0 	1
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> % undisturbed habitat <u>21</u> + [(% moderate and low intensity land uses)/2] <u>14</u> = <u>35</u> %</p> <ul style="list-style-type: none"> <input type="checkbox"/> Undisturbed habitat > 50% of Polygon points = 3 <input checked="" type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches points = 2 <input type="checkbox"/> Undisturbed habitat 10-50% and > 3 patches points = 1 <input type="checkbox"/> Undisturbed habitat < 10% of 1 km Polygon points = 0 	2
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> > 50% of 1 km Polygon is high intensity land use points = (- 2) <input type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity points = 0 	-2
<p>Total for H 2</p>	<p style="text-align: right;">Add the points in the boxes above</p> <p style="text-align: center;">1</p>

Rating of Landscape Potential If score is: 4-6 = H 1-3 = M < 1 = L *Record the rating on the first page*

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>	
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: points = 2</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan <input type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 <input type="checkbox"/> Site does not meet any of the criteria above points = 0 	2

Rating of Value If score is: 2 = H 1 = M 0 = L *Record the rating on the first page*

Wetland name or number B (Off-site)

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; 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.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161 – see web link above).
- 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.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).
- 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.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- 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 > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number B (Off-site)

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<p><i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i></p>	
<p>SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt Yes – Go to SC 1.1 No = Not an estuarine wetland</p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No - Go to SC 1.2</p>	<p>Cat. I</p>
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II</p>	<p>Cat. I Cat. II</p>
<p>SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 2.2 No – Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I No = Not a WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = Category I No = Not a WHCV</p>	<p>Cat. I</p>
<p>SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to SC 3.3 No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Is a Category I bog No – Go to SC 3.4 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 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog</p>	<p>Cat. I</p>

Wetland name or number **B (Off-site)**

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16010 MSPT XVIII LLC - EAST LAKE SAMMAMISH PKWY NE
 WETLAND RATING FIGURE B1 - WETLAND B



LEGEND

-  SCRUB-SHRUB
-  AQUATIC BED
-  EMERGENT VEGETATION
-  FORESTED VEGETATION
-  OPEN WATER
-  SATURATED ONLY
-  SEASONALLY FLOODED
-  OCCASIONALLY FLOODED
-  PERMANENTLY FLOODED
-  150' FROM WL BOUNDARY
-  PERENNIAL STREAM
-  INTERMITTENT STREAM



Scale 1" = 1,200'



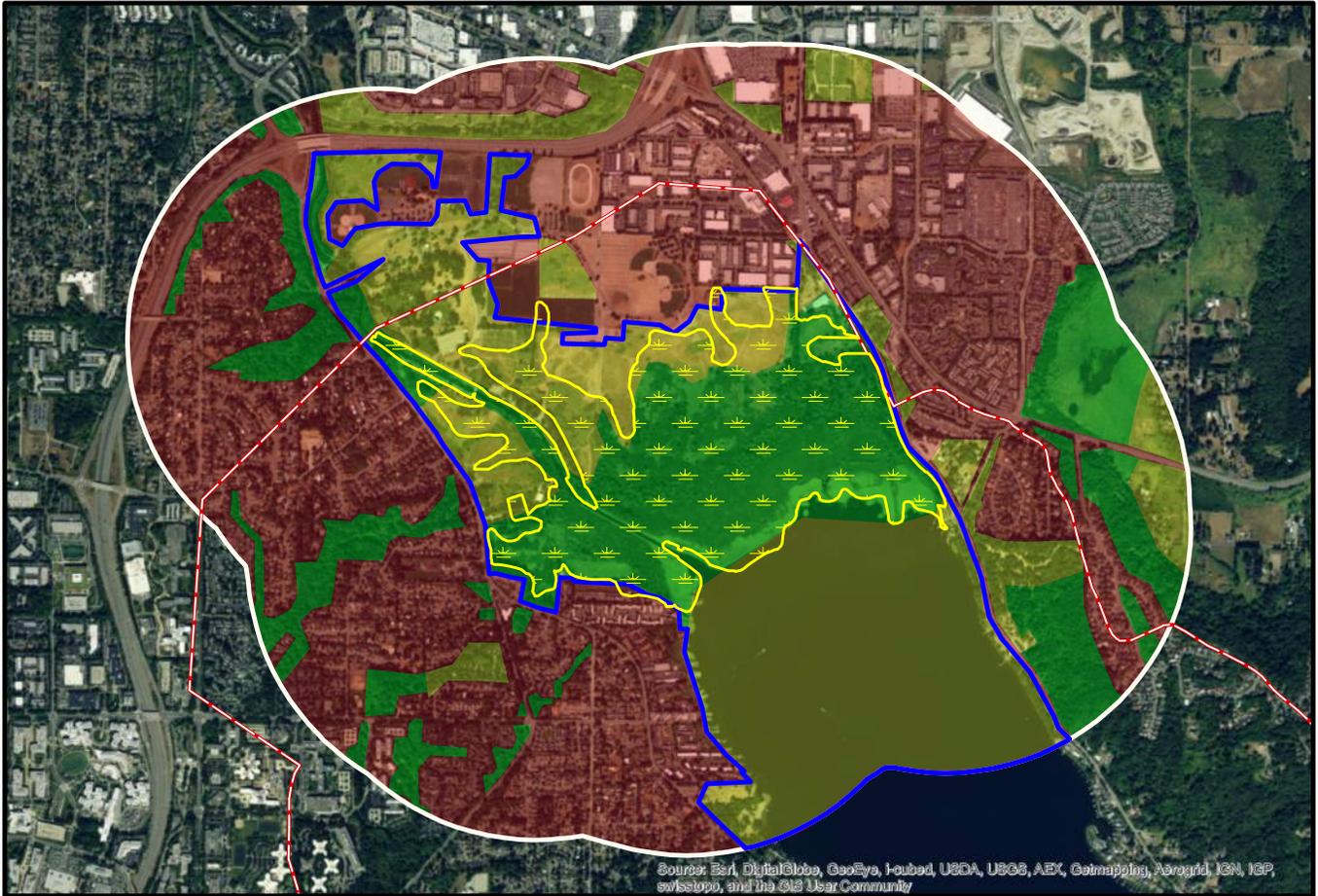
Wetland Resources, Inc.
 Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland B

MSPT XVIII LLC
 ATTN: Marc Boettcher
 12332 NE 115th Place
 Kirkland, WA 98033

Figure B1
 WRI Job # 16010
 Drawn by: SW

16010 MSPT XVIII LLC - EAST LAKE SAMMAMISH PKWY NE
 WETLAND RATING FIGURE B2 - WETLAND B

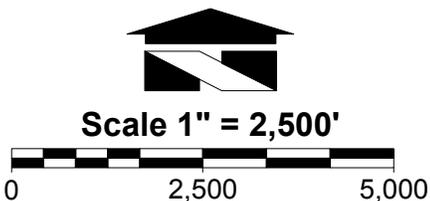


Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, CompuOne, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

**CONTRIBUTING BASIN
 AREA RELATIVE TO
 WETLAND UNIT IS 529:1**



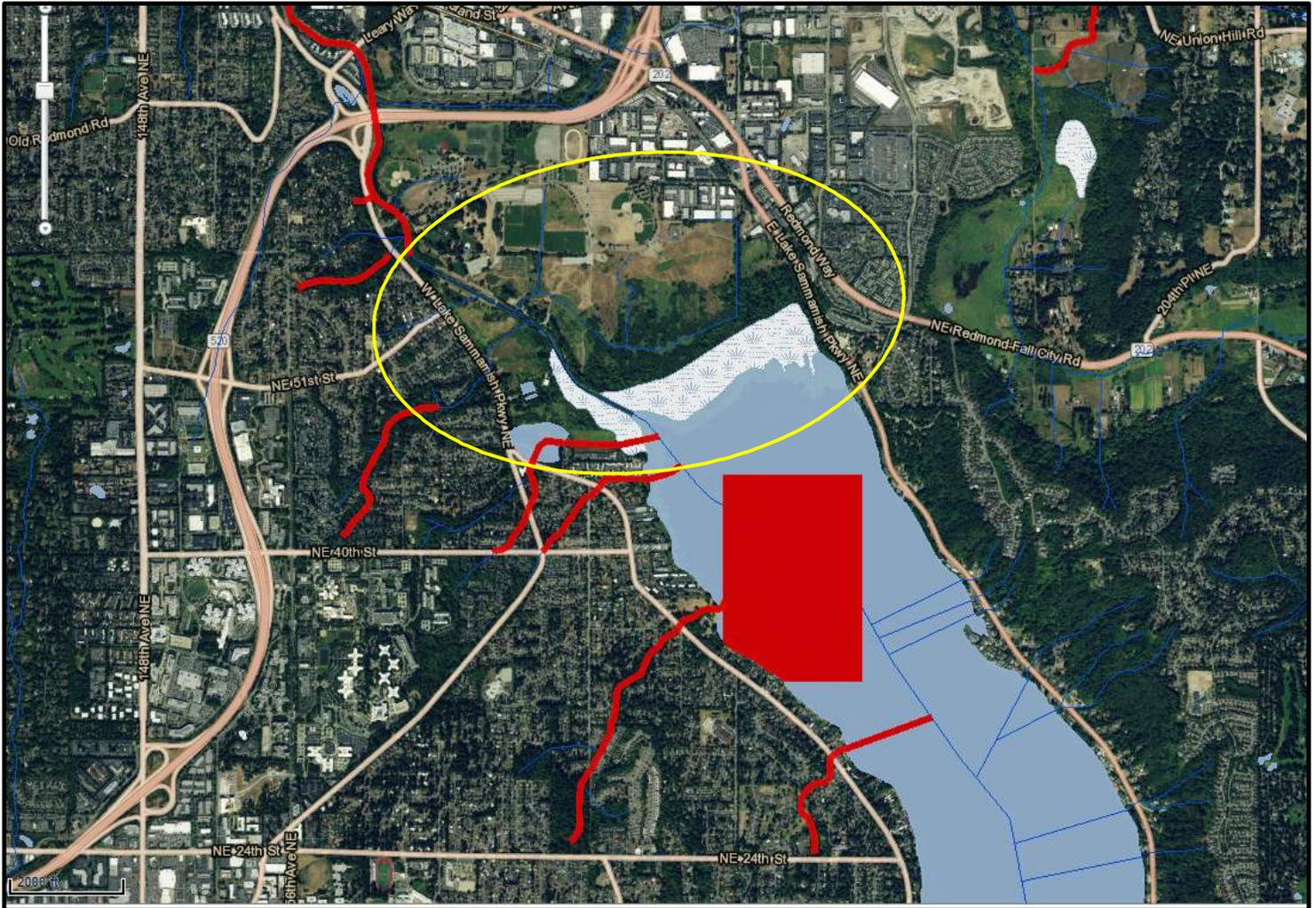
Wetland Resources, Inc.
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 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

**WETLAND RATING
 Wetland B**

MSPT XVIII LLC
 ATTN: Marc Boettcher
 12332 NE 115th Place
 Kirkland, WA 98033

Figure B2
 WRI Job # 16010
 Drawn by: SW

16010 MSPT XVIII LLC - EAST LAKE SAMMAMISH PKWY NE
 WETLAND RATING FIGURE B3 - WETLAND B



Scale 1" = 3,000'



LEGEND

-  WETLAND LOCATION
-  AQUATIC RESOURCES ON THE 303(d) LIST

Wetland Resources, Inc.
 Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland B

MSPT XVIII LLC
 ATTN: Marc Boettcher
 12332 NE 115th Place
 Kirkland, WA 98033

Figure B3
 WRI Job # 16010
 Drawn by: SW

16010 MSPT XVIII LLC - EAST LAKE SAMMAMISH PKWY NE
WETLAND RATING FIGURE B4 - WETLAND B

WRIA 8: Cedar-Sammamish

The following table lists overview information for water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



Counties

- [King](#)
- [Snohomish](#)

Waterbody Name	Pollutants	Status**	TMDL Lead
Ballinger Lake	Total Phosphorus	Approved by EPA	Tricia Shoblom 425-649-7288
Bear-Evans Creek Basin	Fecal Coliform	Approved by EPA	Joan Nolan 425-649-4425
	Dissolved Oxygen Temperature	Approved by EPA	
Cottage Lake	Total Phosphorus	Approved by EPA Has an implementation plan	Tricia Shoblom 425-649-7288
Issaquah Creek Basin	Fecal Coliform	Approved by EPA	Joan Nolan 425-649-4425
Little Bear Creek Tributaries: Trout Stream Great Dane Creek Cutthroat Creek	Fecal Coliform	Approved by EPA	Ralph Svrcek 425-649-7036
North Creek	Fecal Coliform	Approved by EPA Has an implementation plan	Ralph Svrcek 425-649-7036
Pipers Creek	Fecal Coliform	Approved by EPA	Joan Nolan 425-649-4425
Sammamish River	Dissolved Oxygen Temperature	Field work starts summer 2015	Ralph Svrcek 425-649-7036
Swamp Creek	Fecal Coliform	Approved by EPA Has an implementation plan	Ralph Svrcek 425-649-7036

** Status will be listed as one of the following: Approved by EPA, Under Development or Implementation

Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

**WETLAND RATING
Wetland B**

MSPT XVIII LLC
ATTN: Marc Boettcher
12332 NE 115th Place
Kirkland, WA 98033

Figure B4
WRI Job # 16010
Drawn by: SW

APPENDIX B

CORPS OF ENGINEERS WETLAND
DETERMINATION DATA FORMS

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

Project/Site: East Lake Sammamish Apartments City/County: Redmond Sampling Date: Feb 4, 2016
 Applicant/Owner: MSPT XVIII LLC State: WA Sampling Point: S1
 Investigator(s): Scott Walters and Meryl Kamowski Section, Township, Range: S7, T25, R6
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): slightly concave Slope (%): >5%
 Subregion (LRR): LRR A Lat: 47.660451 Long: -122.095998 Datum: WGS 84
 Soil Map Unit Name: Seattle Muck NWI classification: NA

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: Greater than normal precipitation in the Winter of 2016.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: .)																		
1. <u>Acer macrophyllum</u>	30	NA*	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>50%</u> (A/B)														
2. <u>Pseudotsuga menziesii</u>	10	NA*	FACU															
3. _____																		
4. _____																		
_____ = Total Cover																		
Sapling/Shrub Stratum (Plot size: .)																		
1. <u>Rubus armeniacus</u>	83	Y	FACU	Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td style="text-align: center;"><u>0</u> x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td style="text-align: center;"><u>0</u> x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>45</u></td> <td style="text-align: center;"><u>135</u> x 3 = <u>135</u></td> </tr> <tr> <td>FACU species <u>83</u></td> <td style="text-align: center;"><u>332</u> x 4 = <u>332</u></td> </tr> <tr> <td>UPL species <u>0%</u></td> <td style="text-align: center;"><u>0</u> x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;"><u>128</u> (A) <u>467</u> (B)</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	<u>0</u> x 1 = <u>0</u>	FACW species <u>0</u>	<u>0</u> x 2 = <u>0</u>	FAC species <u>45</u>	<u>135</u> x 3 = <u>135</u>	FACU species <u>83</u>	<u>332</u> x 4 = <u>332</u>	UPL species <u>0%</u>	<u>0</u> x 5 = <u>0</u>	Column Totals:	<u>128</u> (A) <u>467</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	<u>0</u> x 1 = <u>0</u>																	
FACW species <u>0</u>	<u>0</u> x 2 = <u>0</u>																	
FAC species <u>45</u>	<u>135</u> x 3 = <u>135</u>																	
FACU species <u>83</u>	<u>332</u> x 4 = <u>332</u>																	
UPL species <u>0%</u>	<u>0</u> x 5 = <u>0</u>																	
Column Totals:	<u>128</u> (A) <u>467</u> (B)																	
2. _____																		
3. _____																		
4. _____																		
5. _____																		
_____ = Total Cover																		
Herb Stratum (Plot size: .)																		
1. <u>Athyrium filix-femina</u>	45*	Y	FACU	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 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. _____																		
_____ = Total Cover																		
Woody Vine Stratum (Plot size: .)																		
1. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
2. _____																		
_____ = Total Cover																		
% Bare Ground in Herb Stratum _____																		

Remarks:
 Pacific Willow was present as a dominant species within the wetland, but was absent in this representative plot. Relative presence/absence of *Athyrium filix-femina* between wetland and upland sampling points indicates a hydrophytic community.
 *Species is not rooted within the wetland, and is therefore not included in the dominance test.

SOIL

Sampling Point: S1

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 2/2	100	-	-	-	-	Sa Cl Lo	
10-16+	10YR 4/1	85	7.5YR 4/6	15	C	M	Sa Cl Lo	

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"/> 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 checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" 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)	

2 cm Muck (A10)
 Red Parent Material (TF2)
 Very Shallow Dark Surface (TF12)
 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 No

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"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input 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 No Depth (inches): _____

Water Table Present? Yes No Depth (inches): 10

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

Wetland Hydrology Present? Yes No

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

Remarks:

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

Project/Site: East Lake Sammamish Apartments City/County: Redmond Sampling Date: Feb 4, 2016
 Applicant/Owner: MSPT XVIII LLC State: WA Sampling Point: S2
 Investigator(s): Scott Walters and Meryl Kamowski Section, Township, Range: S7, T25, R6
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): slightly concave Slope (%): >5%
 Subregion (LRR): LRR A Lat: 47.660451 Long: -122.095998 Datum: WGS 84
 Soil Map Unit Name: Seattle Muck NWI classification: NA

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 type="checkbox"/> No <input checked="" 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: Greater than normal precipitation in the Winter of 2016.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: 15' radius)					
1. <u>Acer macrophyllum</u>	20	Y	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>33.3%</u> (A/B)	
2. <u>Thuja plicata</u>	8	Y	FAC		
3. <u>Pseudotsuga menziesii</u>	5	N	FACU		
4. _____					
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot size: 10' radius)					
1. <u>Rubus armeniacus</u>	95	Y	FACU		
2. _____					
3. _____					
4. _____					
5. _____					
_____ = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) <small>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</small>	
Herb Stratum (Plot size: 5' radius)					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Woody Vine Stratum (Plot size: _____)					
1. _____					
2. _____					
_____ = Total Cover				Remarks:	
% Bare Ground in Herb Stratum _____					

SOIL

Sampling Point: S2

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		
0-9	10YR 3/2	100	-	-	-	-	Sa Cl Lo	
9-18	10YR 4/4	100	-	-	-	-	Sa Lo	

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.)	Indicators for Problematic Hydric Soils ³ :
<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)
	<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)
	³ Indicators 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:	

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 type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input 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? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		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:		

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

Project/Site: 6065 E Lake Sammamish Pkwy NE City/County: Redmond Sampling Date: July 21, 2016
 Applicant/Owner: MSPT XVII LLC State: WA Sampling Point: S3
 Investigator(s): S. Walters Section, Township, Range: S07 25N 06E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): <5%
 Subregion (LRR): LRR A Lat: 47.660442 Long: -122.097635 Datum: WGS 84
 Soil Map Unit Name: Seattle Muck NWI classification: PEMA

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:	

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 5 meter)					
1. <u>Salix scouleriana</u>		10	Y	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. <u>Populus balsamifera</u>		5	Y	FAC	
3. _____					
4. _____					
		15	= Total Cover		
Sapling/Shrub Stratum (Plot size: 3 meter)					
1. <u>Rubus armeniacus</u>		18	Y	FAC	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
2. _____					
3. _____					
4. _____					
5. _____					
Herb Stratum (Plot size: 1 meter)					
1. <u>Phalaris arundinacea</u>		100	Y	FACW	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 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. _____					
Woody Vine Stratum (Plot size: _____)					
1. _____					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____					
_____ = Total Cover					
% Bare Ground in Herb Stratum _____					

Remarks:

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

Project/Site: 6065 E Lake Sammamish Pkwy NE City/County: Redmond Sampling Date: July 21, 2016
 Applicant/Owner: MSPT XVII LLC State: WA Sampling Point: S4
 Investigator(s): S. Walters Section, Township, Range: S07 25N 06E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): <5%
 Subregion (LRR): LRR A Lat: 47.660442 Long: -122.097635 Datum: WGS 84
 Soil Map Unit Name: Seattle Muck NWI classification: PEMA

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 type="checkbox"/> No <input checked="" 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:	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: 5 meter)																		
1. <u>Acer macrophyllum</u>	20	Y	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>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____	20	= Total Cover																
Sapling/Shrub Stratum (Plot size: 3 meter)																		
1. <u>Symphoricarpos albus</u>	15	Y	FACU	Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: right;">Total % Cover of:</td> <td style="width: 50%; text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>105</u></td> <td>x 3 = <u>315</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>165</u> (A)</td> <td><u>555</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.36</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>105</u>	x 3 = <u>315</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>165</u> (A)	<u>555</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>105</u>	x 3 = <u>315</u>																	
FACU species <u>60</u>	x 4 = <u>240</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>165</u> (A)	<u>555</u> (B)																	
2. <u>Rubus armeniacus</u>	10	Y	FAC															
3. <u>Ribes sanguineum</u>	5	N	FACU															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
_____	30	= Total Cover																
Herb Stratum (Plot size: 1 meter)																		
1. <u>Agrostis spp.</u>	95	Y	FAC															
2. <u>Leucanthemum vulgare</u>	20	N	FACU															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
_____	115	= Total Cover																
Woody Vine Stratum (Plot size: _____)																		
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 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. _____	_____	_____	_____															
_____	_____	= Total Cover																
% Bare Ground in Herb Stratum _____																		

Remarks:

SOIL

Sampling Point: S4

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

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-18	10YR 3/2	100					loam	

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"/> 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)	

2 cm Muck (A10)
 Red Parent Material (TF2)
 Very Shallow Dark Surface (TF12)
 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 No

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 type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input 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 No Depth (inches): _____

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

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

Wetland Hydrology Present? Yes No

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

Remarks:
 Dry

APPENDIX C

REDMOND WETLAND SUMMARY SHEET



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	0.086 Ac	50 feet	0 feet	NO	NO	0.086 Ac	None	N/A*	N/A*	Off-Site

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).

*Ratios and Areas are not calculable because mitigation will occur using King County's Mitigation Reserves Program in the Sammamish River Service Area.

APPENDIX D

NWI MAP OF THE SUBJECT SITE



U.S. Fish and Wildlife Service National Wetlands Inventory

East Lake
Sammamish
Apartments

Mar 10, 2016



Wetlands

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

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:

Wetland Resources Inc. Project # 16010

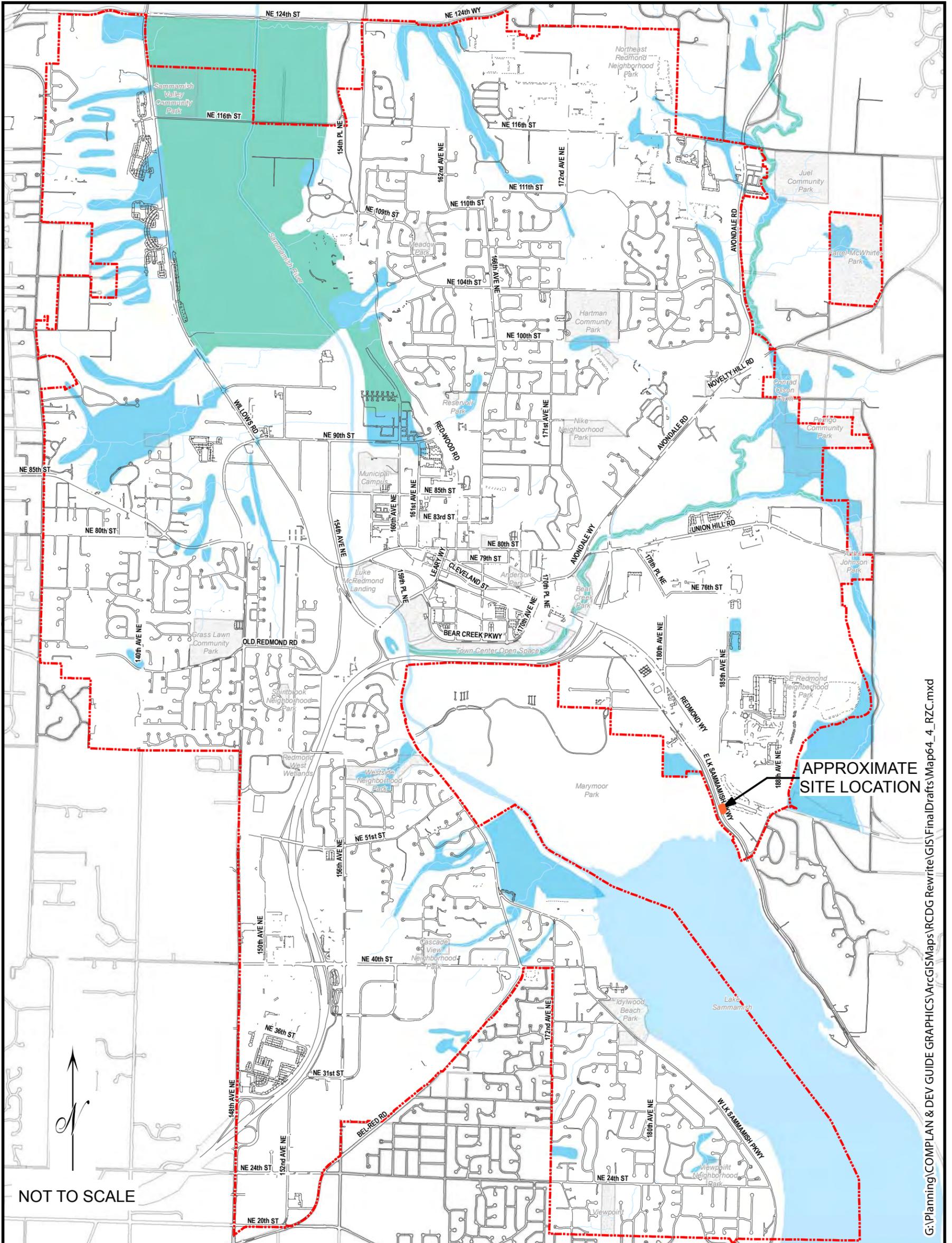
APPENDIX E

REDMOND WETLAND INVENTORY MAP OF THE SUBJECT SITE

CITY OF REDMOND CRITICAL AREAS MAP - WETLANDS

EAST LAKE SAMMAMISH APARTMENTS

WETLAND RESOURCES, INC #16010



G:\Planning\COMPLAN & DEV GUIDE GRAPHICS\ArcGISMaps\RCDG Rewrite\GIS\FinalDrafts\Map64_4_RZC.mxd

City of Redmond
 Critical Areas Map
 Effective: April 16, 2011
Map 64.4 Wetlands

Legend:
 Mixed Wetland/Upland
 Wetland
 Redmond City Limits

Sources:
 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.

APPENDIX F

CRITICAL AREAS MAP SHEETS

CRITICAL AREAS EXISTING CONDITION MAP (SHEET 1/5)

SITE PLAN & WETLAND IMPACT MAP (SHEET 2/5)

INSET 1 - EXISTING WETLAND CONDITONS (SHEET 3/5)

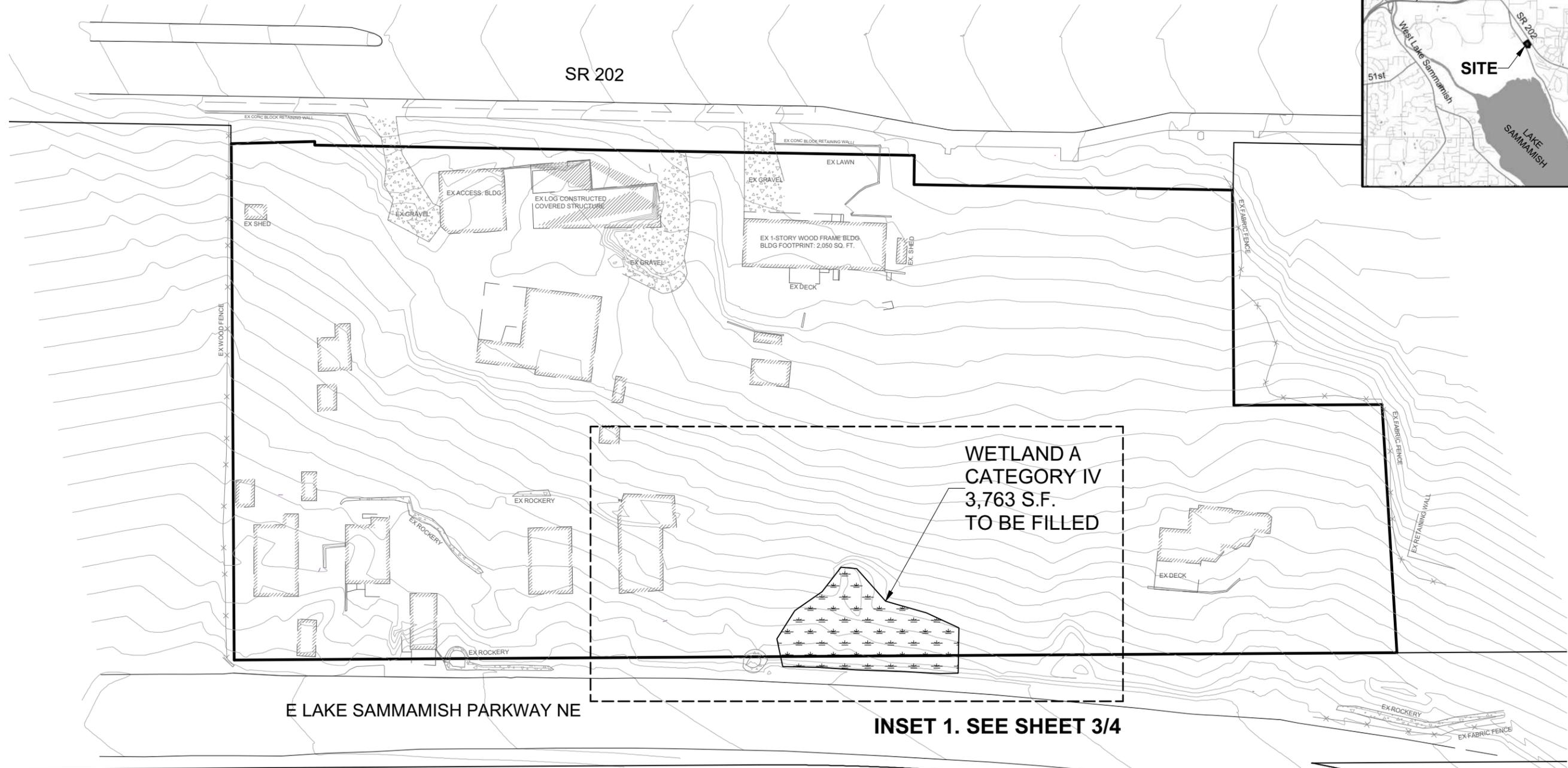
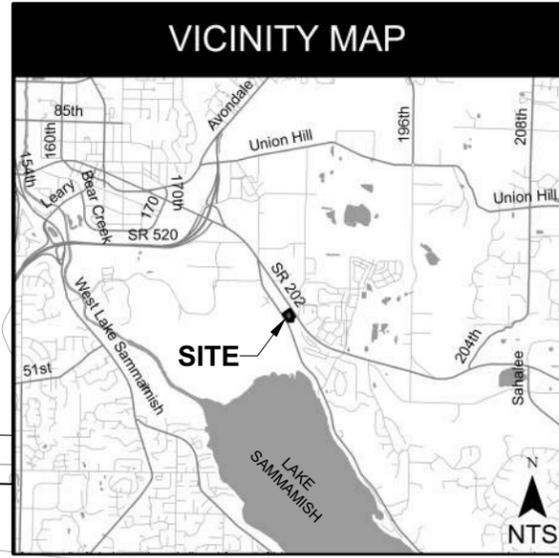
INSET 2 – WETLAND IMPACTS (SHEET 4/5)

WETLAND MITIGATION PLAN MAP (SHEET 5/5)

CRITICAL AREAS EXISTING CONDITIONS MAP

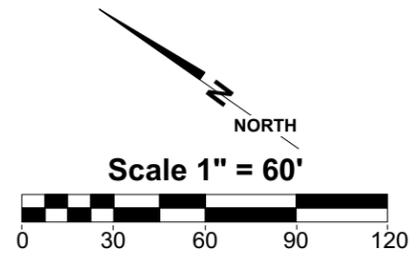
EAST LAKE SAMMAMISH APARTMENTS

PORTION OF SECTION 7, TOWNSHIP 25N, RANGE 6E, W.M.



LEGEND

- WETLANDS
- 2' EX. CONTOURS

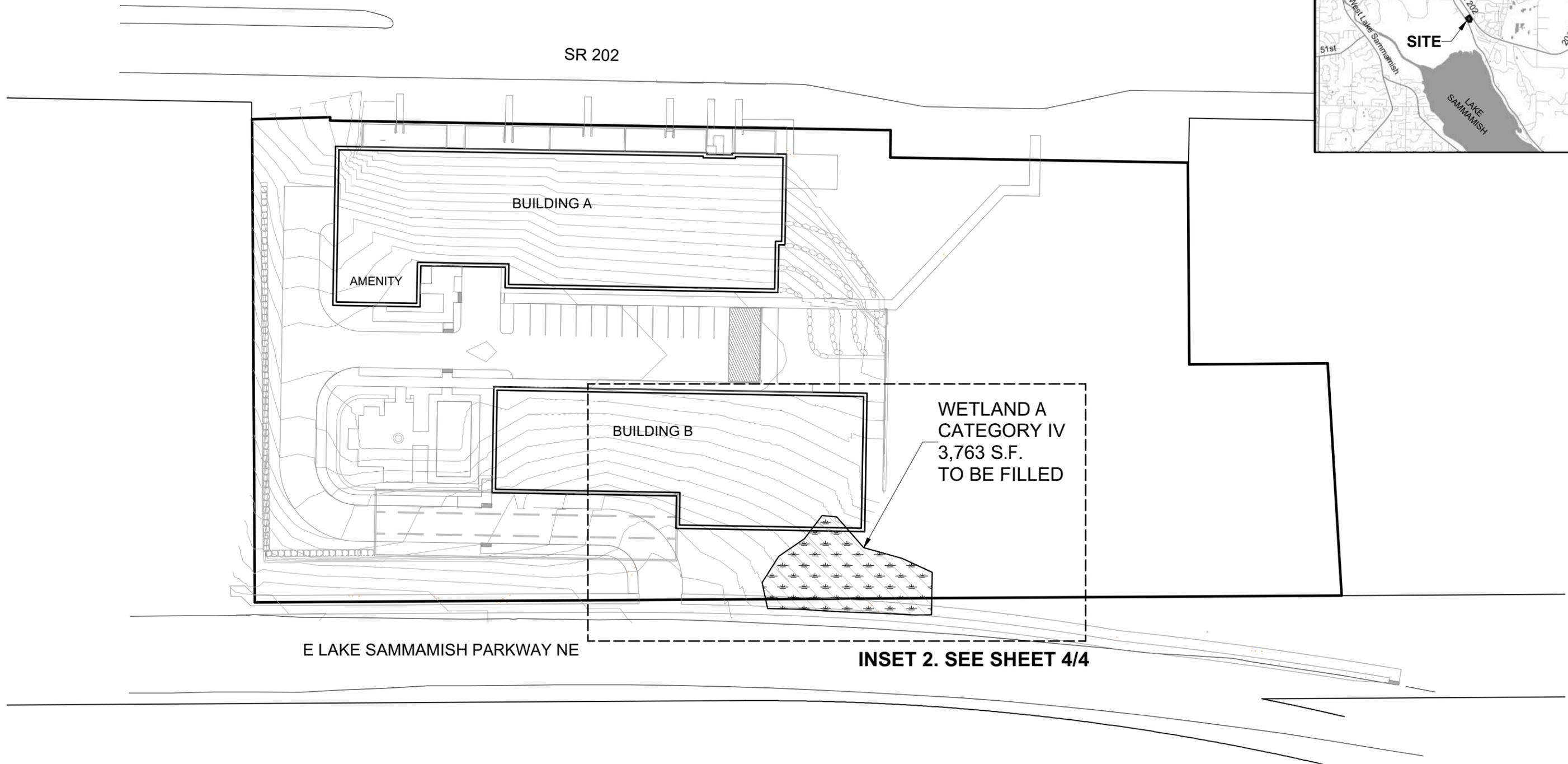
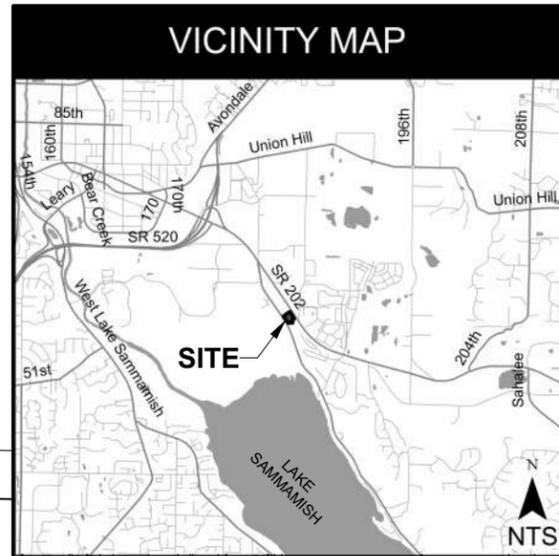


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 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

CRITICAL AREAS EXISTING CONDITIONS MAP
EAST LAKE SAMMAMISH APARTMENTS
 Redmond, Washington

Sheet 1/5
 WRI Job # 16010
 Drawn by: SW
 Orig Date: March 10, 2016
 Rev Date: August 2, 2016

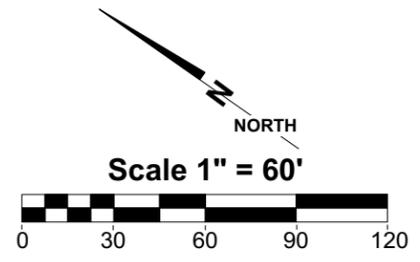
SITE PLAN & WETLAND IMPACT MAP
EAST LAKE SAMMAMISH APARTMENTS
 PORTION OF SECTION 7, TOWNSHIP 25N, RANGE 6E, W.M.



INSET 2. SEE SHEET 4/4

LEGEND

-  WETLANDS
-  WETLAND IMPACT AREA
-  2' CONTOURS WITH FINAL GRADING

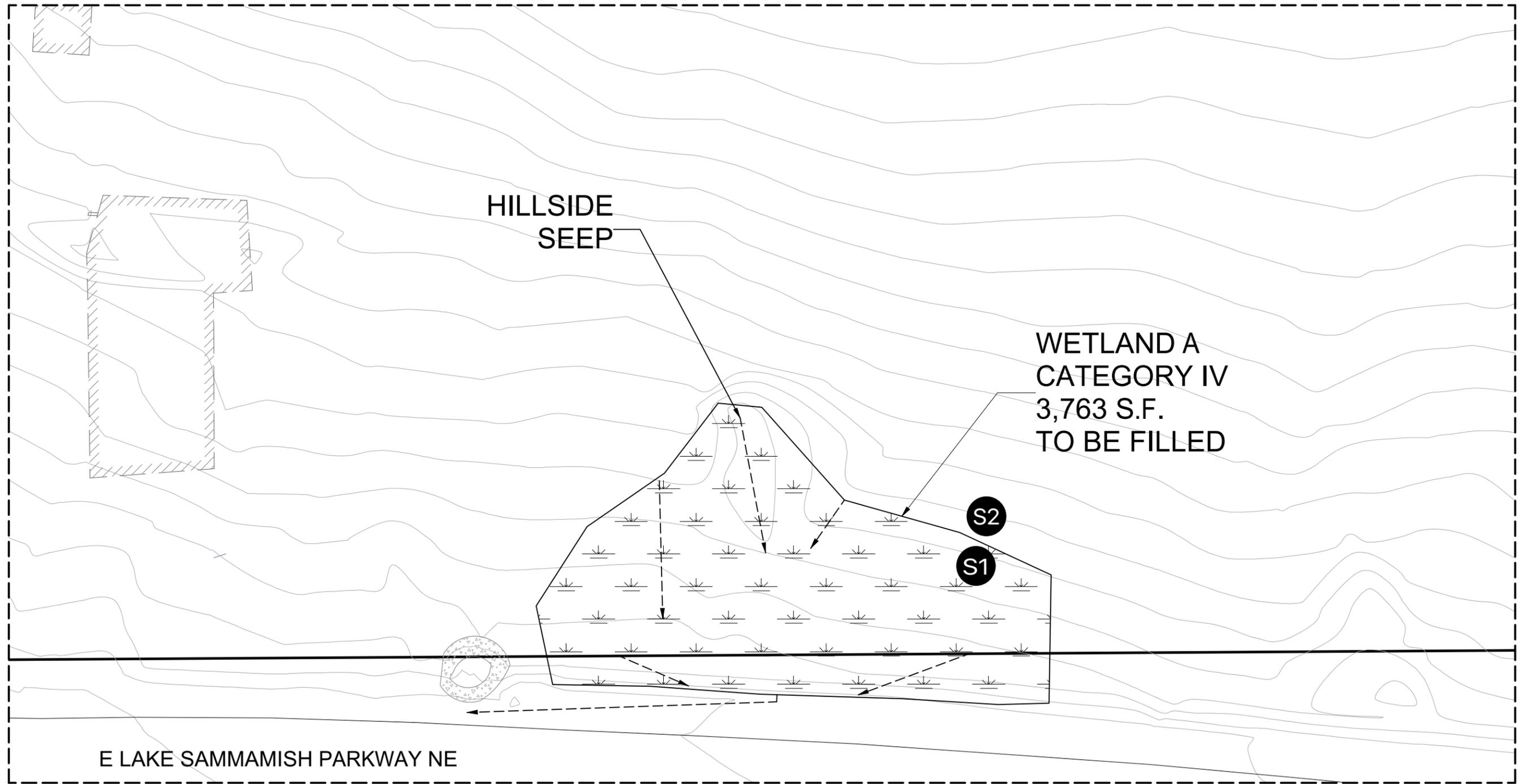


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SITE PLAN & WETLAND IMPACT MAP
EAST LAKE SAMMAMISH APARTMENTS
 Redmond, Washington

MSPT XVIII LLC. Attn. Marc Boettcher 12332 NE 115th PI Kirkland, WA 98033	Sheet 2/5 WRI Job # 16010 Drawn by: SW Orig Date: March 10, 2016 Rev Date: August 2, 2016
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INSET 1 - EXISTING WETLAND CONDITIONS
EAST LAKE SAMMAMISH APARTMENTS
 PORTION OF SECTION 7, TOWNSHIP 25N, RANGE 6E, W.M.

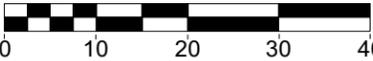


WETLAND A
CATEGORY IV
3,763 S.F.
TO BE FILLED

INSET 1. FOR OVERVIEW, SEE SHEET 1/4

LEGEND

-  WETLANDS
-  HYDROLOGIC FLOW
-  DATA SITES

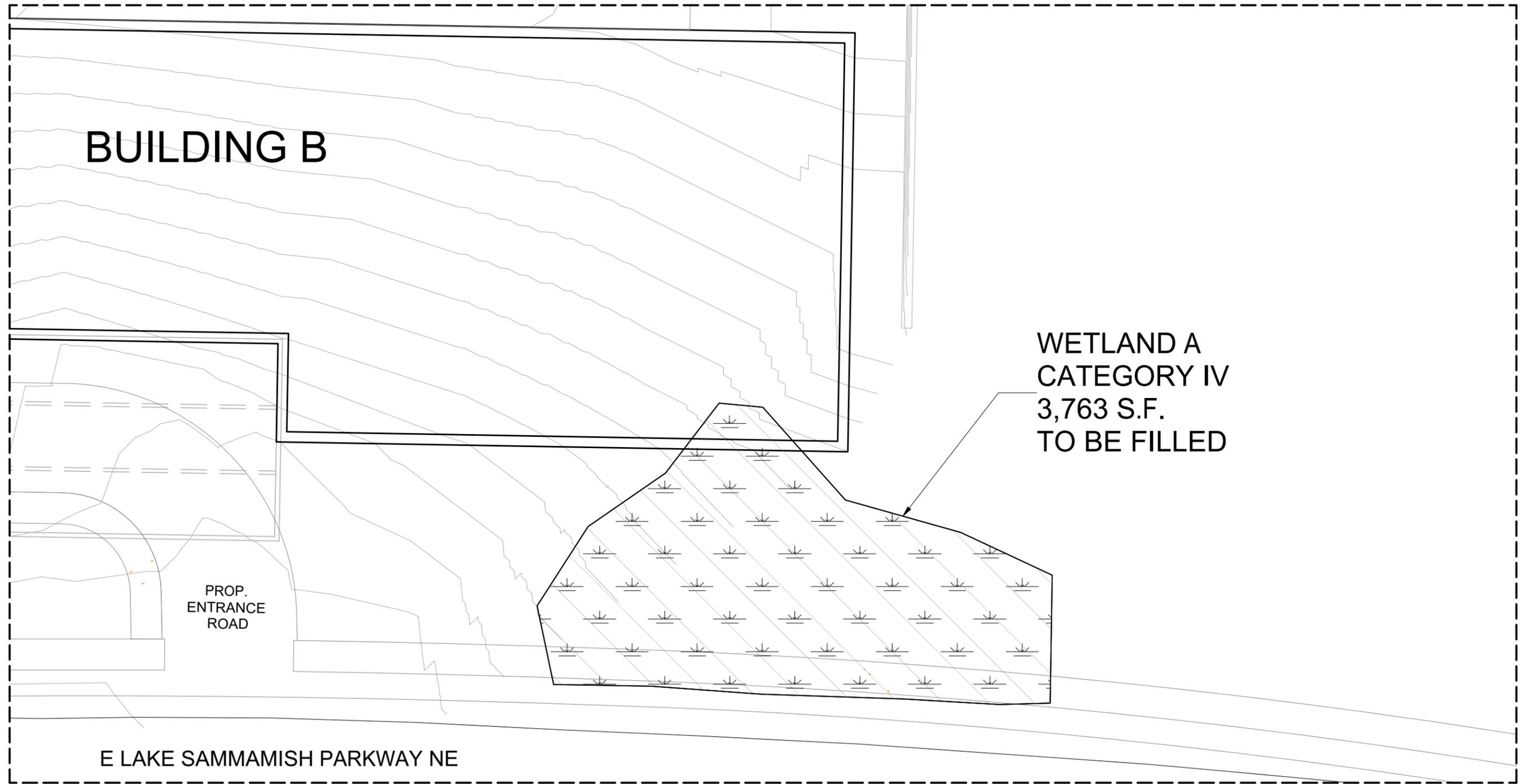

 NORTH
Scale 1" = 20'


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INSET 1 - EXISTING WETLAND CONDITION
EAST LAKE SAMMAMISH APARTMENTS
 Redmond, Washington

MSPT XVIII LLC.	Sheet 3/5
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12332 NE 115th Pl	Drawn by: SW
Kirkland, WA 98033	Orig Date: March 10, 2016
	Rev Date: August 2, 2016

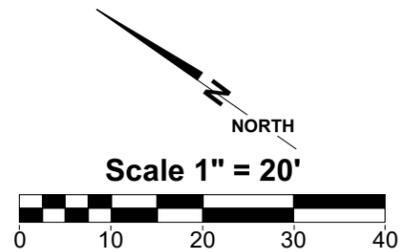
INSET 2 - WETLAND IMPACTS
EAST LAKE SAMMAMISH APARTMENTS
 PORTION OF SECTION 7, TOWNSHIP 25N, RANGE 6E, W.M.



INSET 2. FOR OVERVIEW, SEE SHEET 2/4

LEGEND

-  WETLANDS
-  WETLAND IMPACT AREA
-  2' CONTOURS WITH FINAL GRADING



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INSET 2 - WETLAND IMPACTS
EAST LAKE SAMMAMISH APARTMENTS
 Redmond, Washington

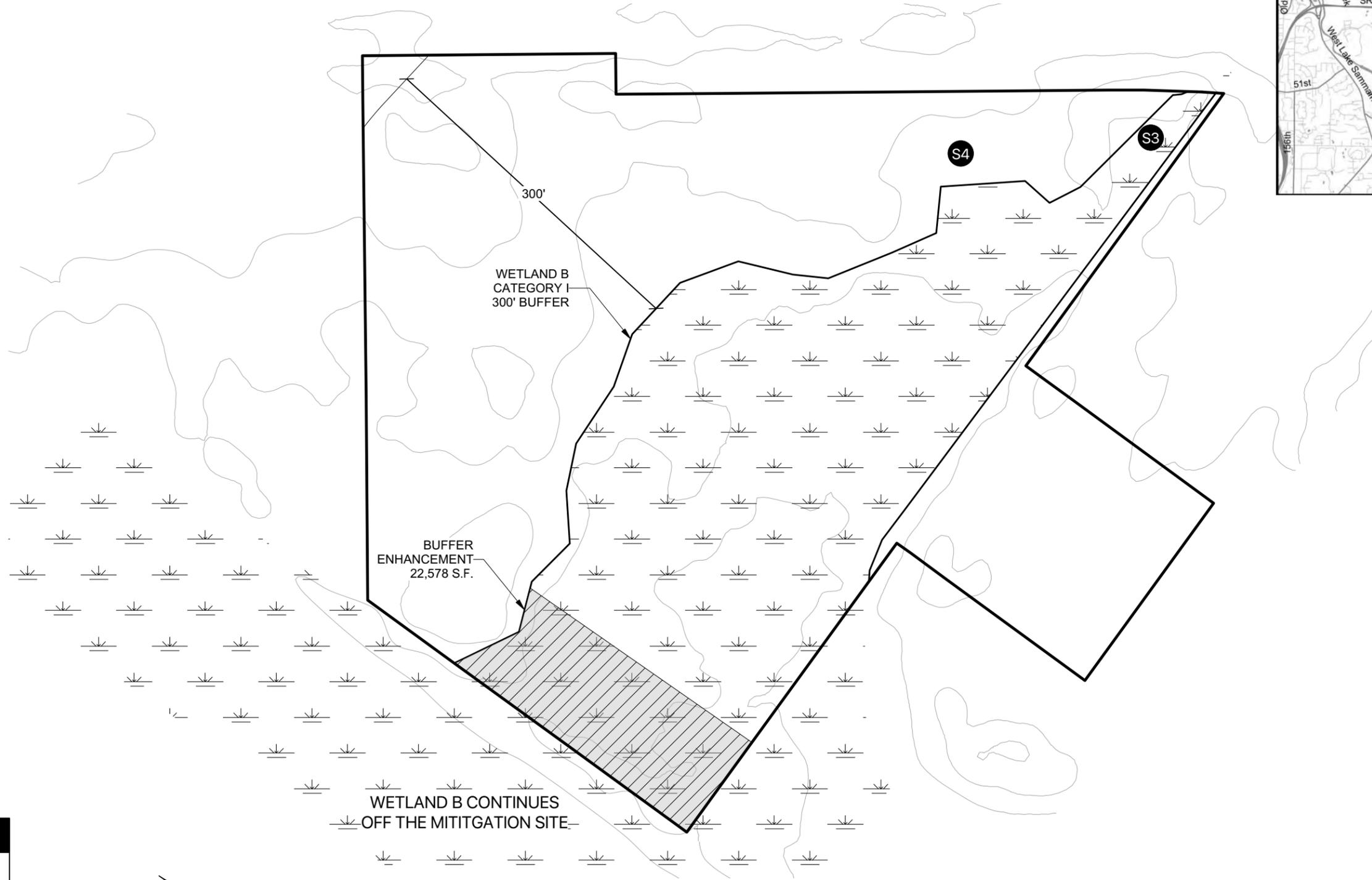
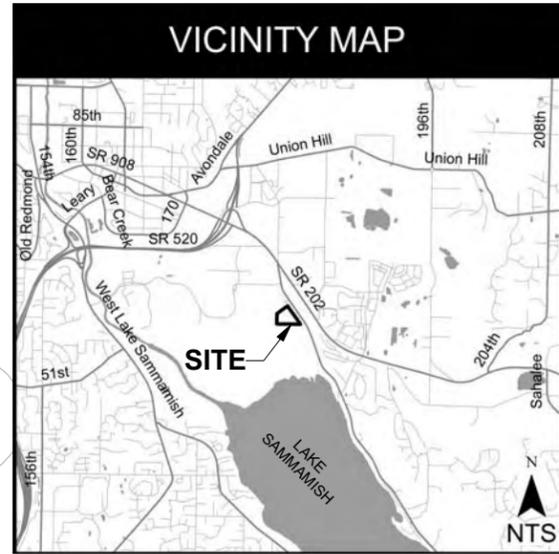
Sheet 4/5
 WRI Job # 16010
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 Rev Date: August 2, 2016

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 Attn. Marc Boettcher
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WETLAND MITIGATION PLAN MAP

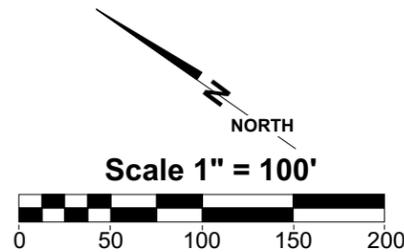
EAST LAKE SAMMAMISH APARTMENTS

PORTION OF SECTION 7, TOWNSHIP 25N, RANGE 6E, W.M.



LEGEND

- WETLANDS
- BUFFER ENHANCEMENT
- 2' EX. CONTOURS
- DATA SITES

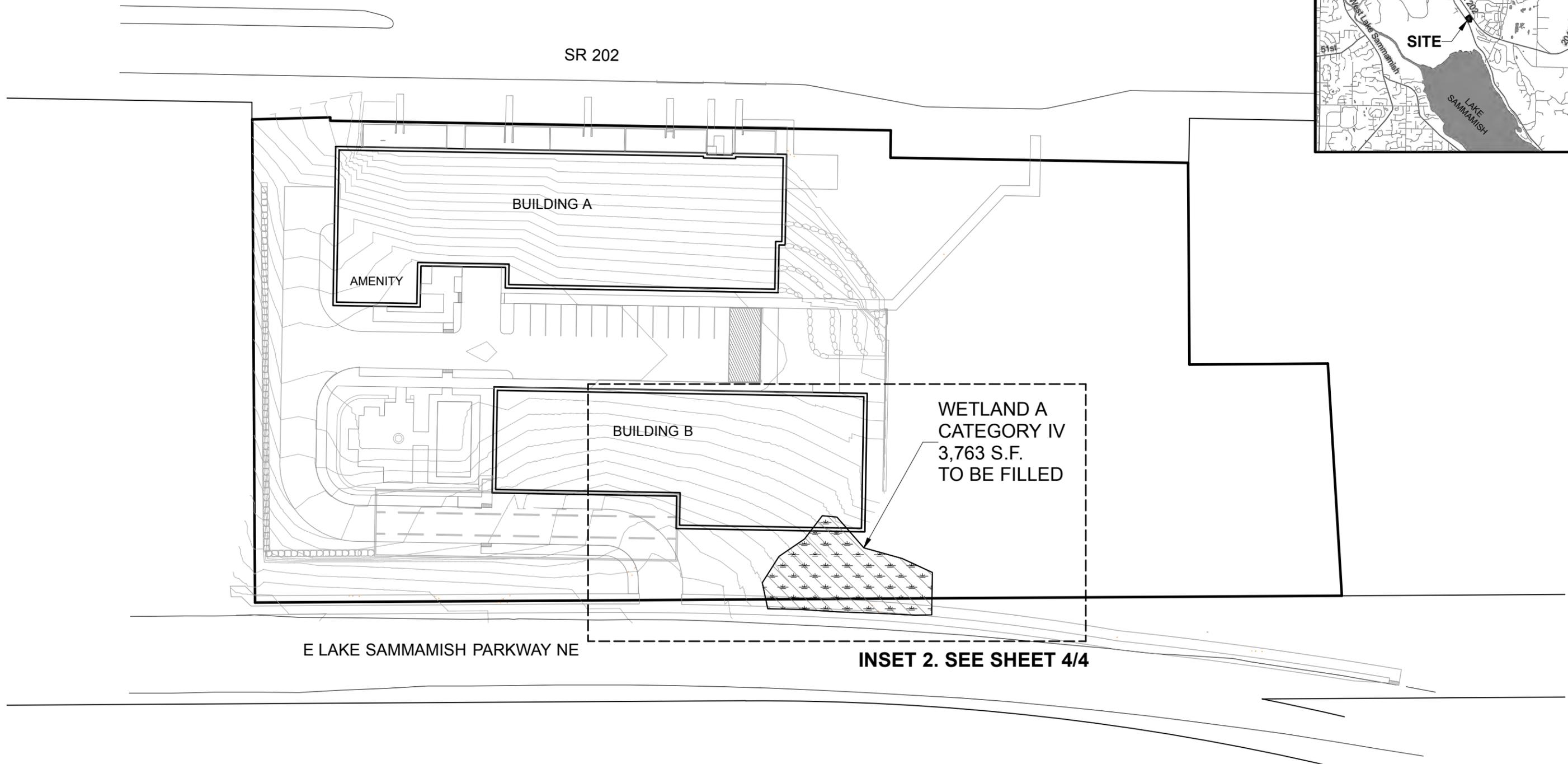
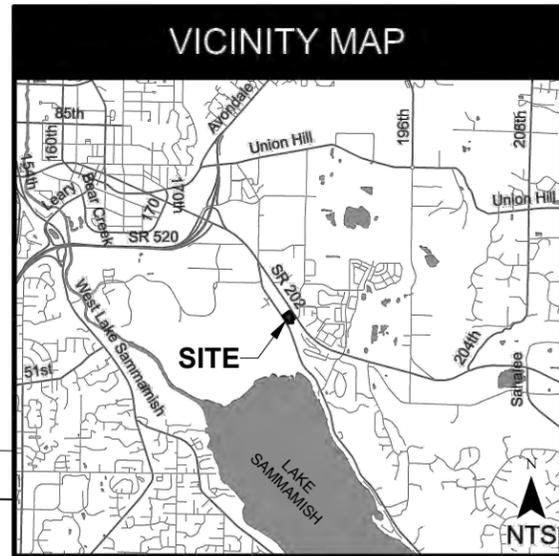


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WETLAND MITIGATION PLAN MAP
EAST LAKE SAMMAMISH APARTMENTS
 Redmond, Washington

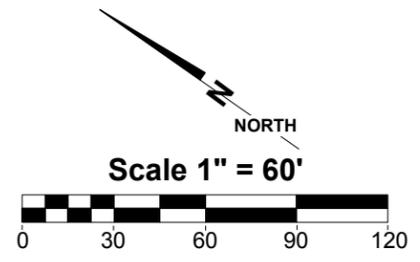
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SITE PLAN & WETLAND IMPACT MAP
EAST LAKE SAMMAMISH APARTMENTS
 PORTION OF SECTION 7, TOWNSHIP 25N, RANGE 6E, W.M.



LEGEND

-  WETLANDS
-  WETLAND IMPACT AREA
-  2' CONTOURS WITH FINAL GRADING



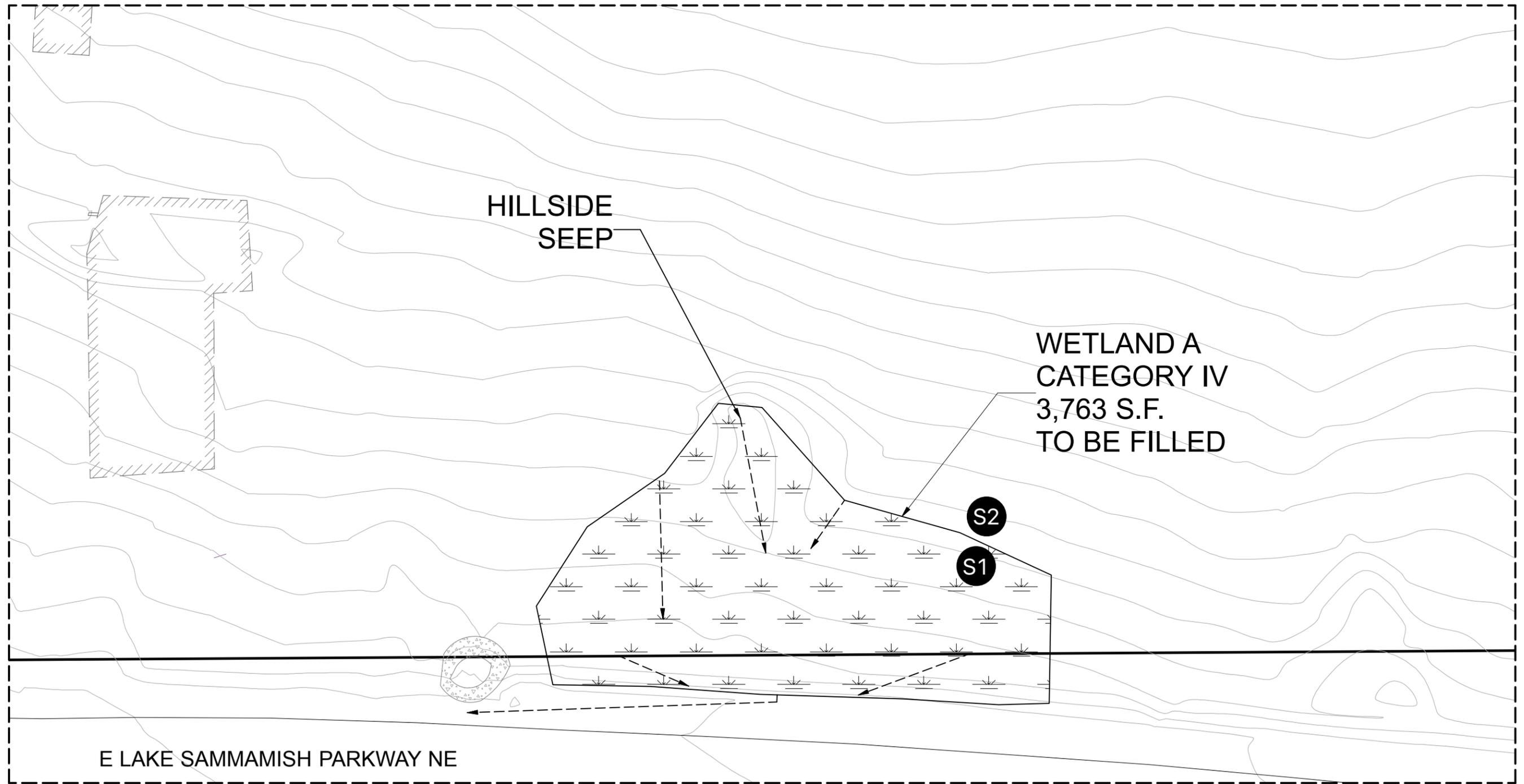
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EAST LAKE SAMMAMISH APARTMENTS
 Redmond, Washington

Sheet 2/5
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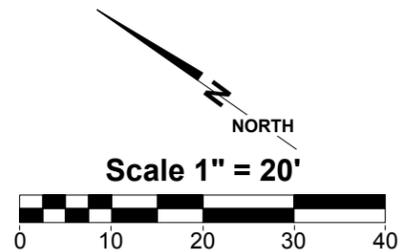
INSET 1 - EXISTING WETLAND CONDITIONS
EAST LAKE SAMMAMISH APARTMENTS
 PORTION OF SECTION 7, TOWNSHIP 25N, RANGE 6E, W.M.



INSET 1. FOR OVERVIEW, SEE SHEET 1/4

LEGEND

-  WETLANDS
-  HYDROLOGIC FLOW
-  DATA SITES

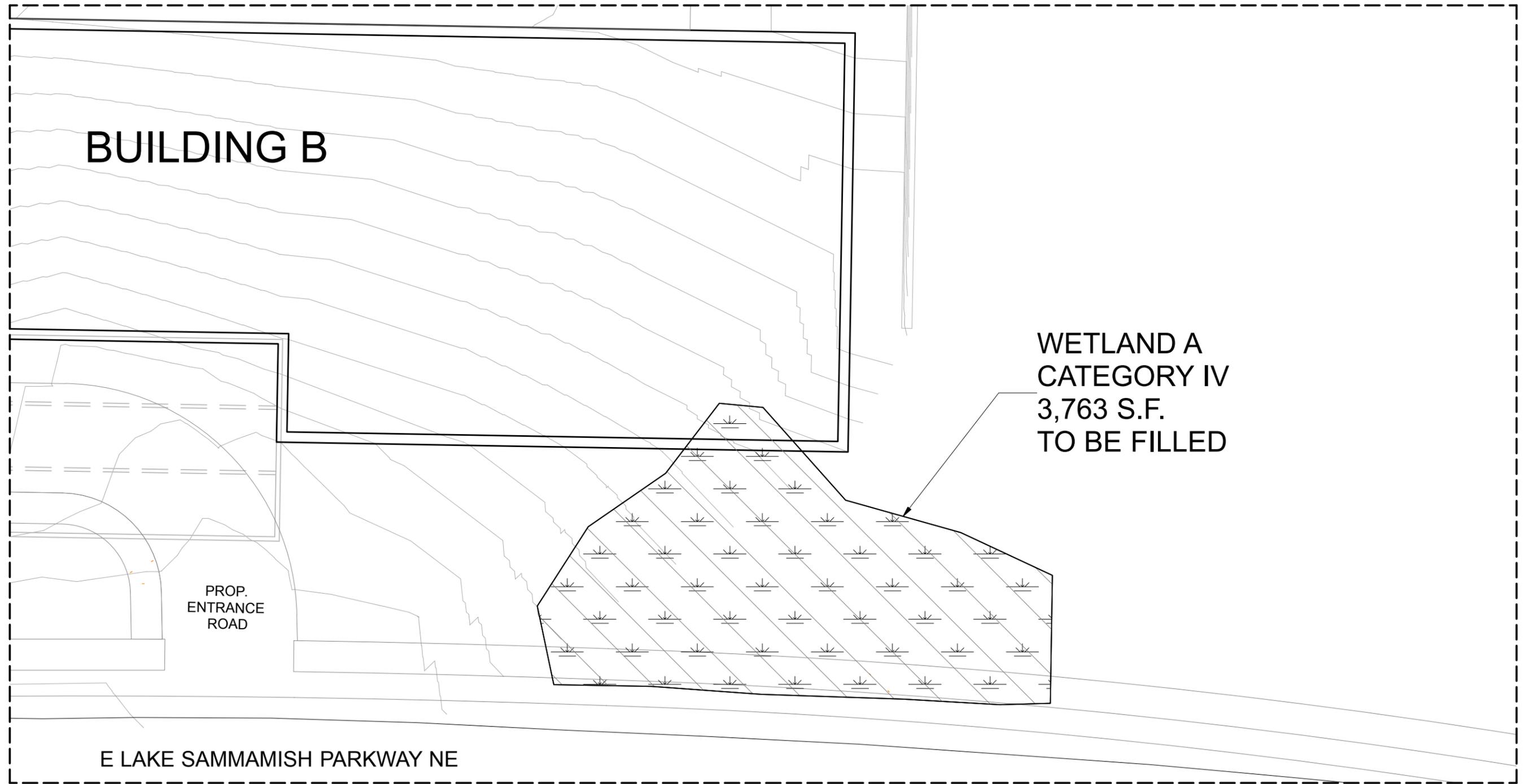


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INSET 1 - EXISTING WETLAND CONDITION
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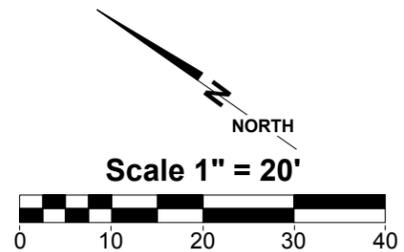
INSET 2 - WETLAND IMPACTS
EAST LAKE SAMMAMISH APARTMENTS
 PORTION OF SECTION 7, TOWNSHIP 25N, RANGE 6E, W.M.



INSET 2. FOR OVERVIEW, SEE SHEET 2/4

LEGEND

-  WETLANDS
-  WETLAND IMPACT AREA
-  2' CONTOURS WITH FINAL GRADING



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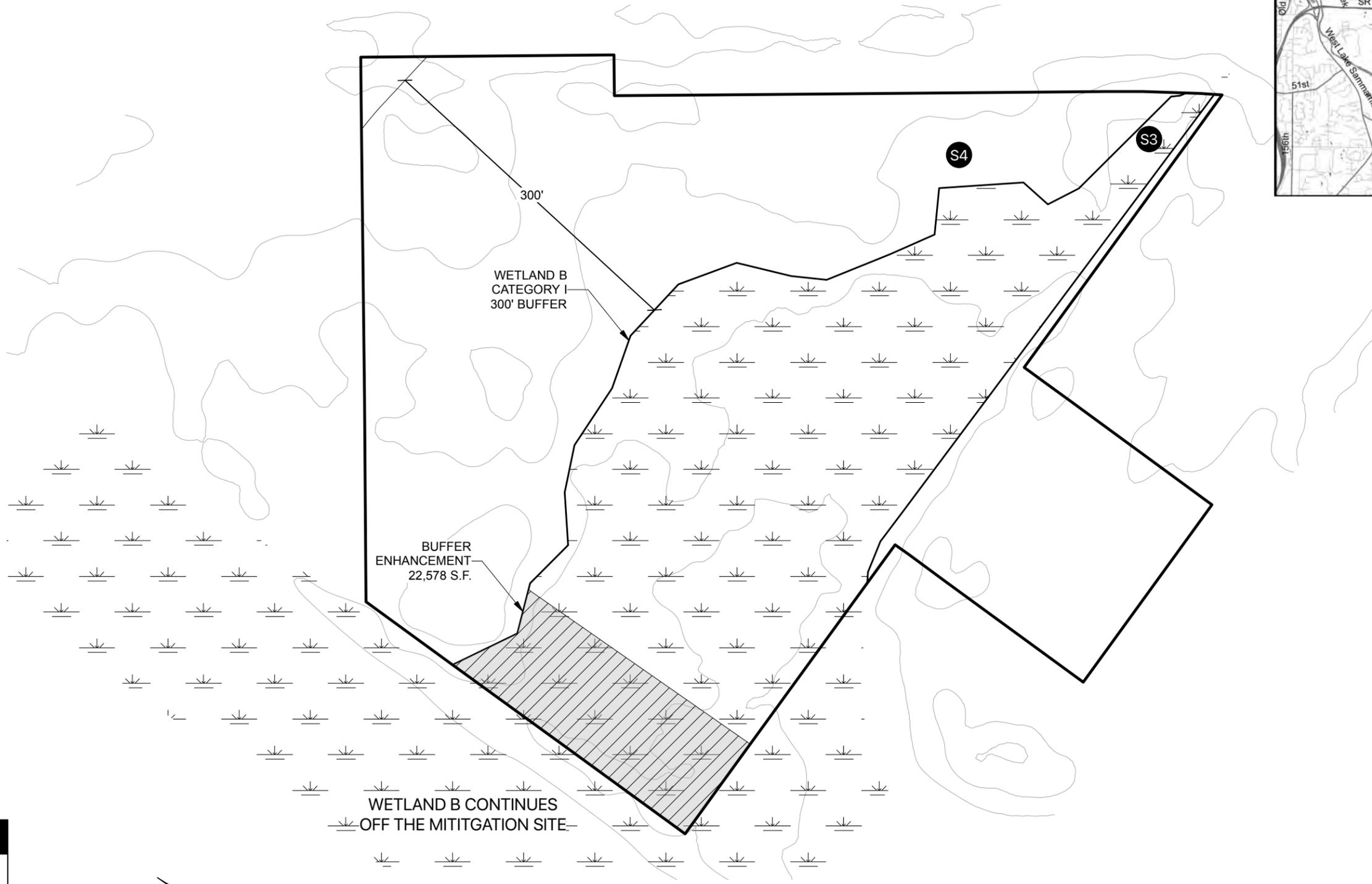
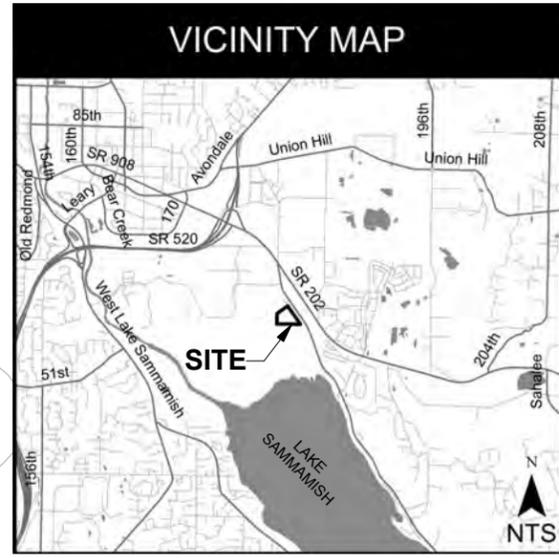
INSET 2 - WETLAND IMPACTS
EAST LAKE SAMMAMISH APARTMENTS
 Redmond, Washington

Sheet 4/5
 WRI Job # 16010
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WETLAND MITIGATION PLAN MAP

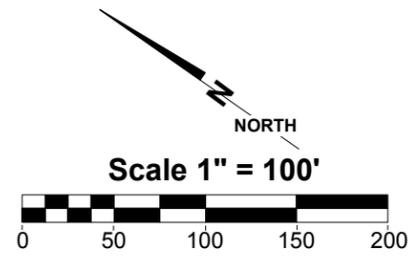
EAST LAKE SAMMAMISH APARTMENTS

PORTION OF SECTION 7, TOWNSHIP 25N, RANGE 6E, W.M.



LEGEND

- WETLANDS
- BUFFER ENHANCEMENT
- 2' EX. CONTOURS
- DATA SITES



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