



Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance

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SENSITIVE AREA STUDY

FOR

THE VILLAGES

Wetland Resources, Inc. Project #08035

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TABLE OF CONTENTS

	PAGE
SITE DESCRIPTION	1
PROJECT DESCRIPTION AND CONCEPTUAL MITIGATION	4
WETLAND CLASSIFICATIONS - COWARDIN SYSTEM	5
WETLAND CLASSIFICATIONS - CITY OF BLACK DIAMOND	6
CORE WETLAND AND STREAM COMPLEX FIELD VERIFICATION	12
WETLAND DETERMINATION REPORT	13
REGULATED BUFFERS DISCUSSION	15
BOUNDARY DETERMINATION FINDINGS	16
WETLAND FUNCTIONS AND VALUES ASSESSMENT	21
WILDLIFE	31
USE OF THIS REPORT	32
REFERENCES	33
TABLE 1. WETLAND TABLE	7
TABLE 2A. PARCEL B FIELD DATA	
TABLE 2B. PARCEL C FIELD DATA	
TABLE 2C. PARCEL D FIELD DATA	
TABLE 2D. PARCEL E FIELD DATA	
TABLE 2E. PARCEL F FIELD DATA	
TABLE 2F. PARCEL BDA	
VICINITY MAP	
CRITICAL AREA STUDY MAPS	
PARCEL B	SHEET 1/7
PARCEL C	SHEET 2/7
PARCEL D	SHEET 3/7
PARCEL E	SHEET 4/7
PARCEL F	SHEET 5/7
PARCEL BDA-NORTH	SHEET 6/7
PARCEL BDA-SOUTH	SHEET 7/7

SITE DESCRIPTION

Wetland Resources, Inc. (WRI) investigated six assemblages of property (“the study area”) located within the city limits of Black Diamond in southwest King County, Washington known as “The Villages” between the months of January to April and in June of 2006, March, October and November of 2007 and April of 2008 to identify, delineate and verify jurisdictional wetland boundaries. Raedeke Associates, Inc. and A.C. Kindig & Co. also conducted investigations and delineations on some of these properties; boundaries not delineated by WRI were verified during WRI site visits. WRI revisited the sites in March 2009 to verify wetland classifications based on the City of Black Diamond’s recently adopted Sensitive Areas Ordinance. The purpose of this report is to provide baseline information of existing on-site wetlands for a proposed Master Plan Development (MPD) of the Villages.

For a description of the on-site stream conditions, please refer to the *Stream Assessment Report* prepared by Cedar Rock Consulting (2008). This stream assessment was prepared for the Villages EIS.

The study area is comprised of several parcel assemblages (Parcels B, C, D, E, F and BDA) and covers approximately 1,196.4 total acres, including the Guidetti parcel. The Guidetti parcel is approximately 20-acres in size and was not evaluated because it is assumed to be entirely wetland and/or buffer. Parcel B comprises the “North Property” and Parcels C, D, E, F and BDA comprise the “Main Property”. The North Property is located approximately 2 miles north of the Main Property. These assemblages are further located within portions of Sections 11, 15, 22, 23 and 27, Township 21N, Range 6E, W.M.

Most of the site and surrounding land was converted from coal and gravel mining operations to managed forest plantations several decades ago, and continues to be used for timber harvesting today. Land use to the west, toward the center of the city of Black Diamond, is comprised of mixed residential and commercial development. The entire project site, with the exception of Parcel F, is located within the City limits of Black Diamond. Parcel F is located within the City’s unincorporated UGA.

During WRI’s field investigations, a total of 97 wetlands were identified on the six assemblages and delineated using the US Army Corps of Engineers methodology. The total acreage of wetland areas equates to approximately 180.94 acres. Wetlands have been designated and rated per BDMC 19.10.210; buffers have been determined based on BDMC 19.10.230. A complete list of all delineated wetlands has been included in Table 1, below.

Parcel B (1 parcel, 81.53 acres) is located at the northern edge of the Black Diamond city limits, west of the intersection of Summit Drive and SR 169 (3rd Ave). It is rectangular with the longer sides on the east and west. It is bordered by residential and commercial properties to the east, cleared land to the south and southwest, and

additional forested land to the west and north. Topography on the site is generally undulating with a northwest aspect slope in the northwest corner of the parcel and a southwest aspect slope in the southwest corner of the parcel. The area contains several gravel logging roads and a network of heavily used mountain bike trails throughout. There are no existing structures on the site.

Parcel B is vegetated by a conifer forest with stands of varying ages. A mix of shrubs and young Douglas fir saplings currently cover the northwest corner of Parcel B. The remainder of Parcel B is currently forested with an approximately 25 to 30 year old stand of Douglas fir with a native understory.

Parcel B contains **twelve** wetlands identified as Wetlands B1, B3, B4, B6-A, B6-B, B6-C, B6-D, B6-E, B7, A4, A6 and A7 totaling 10.14 acres. Wetland B4 is rated as a Category II wetland with a 110-foot buffer. Wetlands B1 and B3 are rated as Category II wetlands with 75-foot buffers. Wetland A6 is rated as a Category III wetland with a 110-foot buffer. Wetlands B6(A-E), A4, A7 and B7 are rated as Category III wetlands with 60-foot buffers. (DOE, Black Diamond classifications)

Parcel C (2 parcels, 54.62 acres) is located at the western edge of the city limits, south of Lake Sawyer, west of the intersection of Roberts Drive, Lake Sawyer Road and SE Auburn-Black Diamond Road. It is generally triangular in shape. Topography is generally flat within Parcel C. It is bordered by a mix of undeveloped and residential lands. There are no existing structures on the site.

Parcel C is vegetated with 15± year-old managed Douglas fir and moderate to dense shrub ground cover. No wetlands were found on this parcel.

Parcel C contains **no wetlands**.

Parcel D (11 parcels, 226 acres) is located at the eastern edge of the city limits, southwest of the intersection of Roberts Drive, Lake Sawyer Road and SE Auburn-Black Diamond Road and Parcel C. This parcel is rectangular in shape with the longer sides on the east and west. It is bordered by residential lands to the west, and forested lands to the south and east. The topography is generally level in the northeastern portion of Parcel D and undulates with alternating swaths of uplands and lowlands in the remainder of this parcel. There is an extensive road system on this parcel that is used for unauthorized ATV recreation. A large gravel borrow pit is located near the center of the parcel. There are no existing structures on the site.

The northern portion of Parcel D is vegetated with 15± year-old managed Douglas fir and dense native shrub ground cover. The south portion of the property is vegetated with even-aged stand of Douglas fir with a sparse, native understory.

There are **ten** identified wetlands on this parcel totaling 5.01 acres. The wetlands are labeled as Wetlands D1, D2, D4, D9, D10, D11 PQ, S and T. A small portion of Wetland E1

a Category I wetland (1.0 acre) is located on this parcel near the northeast corner (described with Parcel E wetlands). Wetland D2 is rated as a Category II wetland with 110-foot buffer. Wetlands D9, D10 and D11 are rated as Category III wetlands with 110-foot buffers. Wetlands D1, D4, PQ, S and T are rated as Category III wetlands with 60-foot buffers. (DOE, Black Diamond classifications)

Parcel E (1 parcel, 151 acres) is located in the southwest portion of the city limits, southeast of the intersection of Roberts Drive, Lake Sawyer Road and SE Auburn-Black Diamond Road and east of Parcel D. This parcel is generally square in shape with a small exclusion in the southeast corner. It is bordered by residential development to the north and undeveloped, forested lands to the east, west and south, and residential property to the southeast. The topography is generally undulating with alternating swaths of uplands and lowlands running northwest to southeast. There is a road system on this parcel that is used for unauthorized ATV recreation. There are no existing structures on the site.

Parcel E is vegetated by an even-aged conifer forested with a generally sparse, native understory.

There are **five** identified wetlands on this parcel totaling 54.66 acres. The wetlands are labeled as Wetlands E1, E7, E8, E10 and TOS. A small portion of Wetland E1 extends onto Parcel D. Wetland E1 and TOS are rated as Category I wetlands. Wetland TOS and a portion of E1 are located in the City of Black Diamond's Core Wetland Complex and receive a 225-foot buffer. Wetland E1 is rated as Category I wetland with a 110-foot buffer. Wetlands E7, E8 and E10 are rated as Category III wetlands with 110-foot buffers. (DOE, Black Diamond classifications)

Parcel F (12 parcels, 265.99 acres) is located in the southeast portion of the City of Black Diamond UGA, northwest of the intersection of SR 169 (Enumclaw-Black Diamond Road SE). This parcel is irregular in shape. Parcel F is bordered by Black Diamond Lake to the northwest; rural residential properties to the northwest, northeast, and south; forested lands to the north and west. Enumclaw-Black Diamond Road (Hwy 169) borders the assemblage to the east. Topography in Parcel F is gently undulating in the central portion. The western portion slopes to the north and the eastern portion of the site slopes to the east. Parcel F drains in three directions: northeast toward Jones Lake, northwest to Black Diamond Lake and south to the Green River. There is an extensive road system on this parcel. There are no existing structures on the site.

Most of parcel F is primarily vegetated with even-aged Douglas fir forests of young to medium age, approximately 30 years old. The easternmost tip of Parcel F is covered by a young forest, approximately 14 years old.

There are **twenty-five** identified wetlands on this parcel totaling 43.64 acres. The wetlands are labeled as Wetlands S1/S2, S3/S4, S4 East, S5/108, S6/S7/S8, S9, S11, S12, S14, S18/S19/S20, J, K, M, Q, R, U, W, AA, BB, CC, DD, GG, JJ, KK and LL. A large

portion of Wetland S5/108 (Black Diamond Lake) a Category I wetland (5.5 acres) is located on this parcel near the northwest corner. Wetland S5/108 (Black Diamond Lake) is located in the City of Black Diamond's Core Wetland Complex and receives a 225-foot buffer. Wetland Q is rated as a Category I wetland with 110-foot buffers. Wetlands S1/S2, S3/S4, S4 East, S6/S7/S8, S18/S19/S20 and GG are rated as Category II wetlands with 110-foot buffers. Wetlands BB, DD and KK rated as Category II wetlands with 75-foot buffers. Wetlands J, K, M, R, U, W, AA and JJ are rated as Category III wetlands with 110-foot buffers. Wetlands S9, S11, S12, S14, CC and LL are rated as Category III wetlands with 60-foot buffers. (DOE, Black Diamond classifications)

BDA (20 parcels, 395.74 acres) is located in the southwest edge of the City of Black Diamond UGA, north of the intersection of SE Green Valley Road and 240th Avenue SE. This parcel is irregular in shape. Parcel BDA bordered by Black Diamond Lake in the northeast, rural residential properties to the south, and forested lands on all other sides. Topography in the northern portion of the BDA parcel is undulating with alternating upland and lowland areas running northwest to southeast. The western portion of the BDA parcel contains a large low area running northwest to southeast. There is an extensive road system and no existing structures on the site.

The eastern half of the BDA parcel is primarily covered by a mixed forest of medium-mature age. This mixed forest contains trees of varying ages with the larger trees estimated at 60 to 80 years old. The western portion of the BDA parcel is primarily vegetated with even-aged Douglas fir forests of young to medium age, approximately 30 years old.

There are **forty-six** identified wetlands on this parcel totaling 63.88 acres. The wetlands are labeled as Wetlands F, G, Y, YY, ZZ, 2, 3, 5, 7, 10, 11, 13, 14, 102, 103, 105, 106, S5/108, 112, 113, 114, 119, 123, 125, 200, 201, 201B, 202, 206, 212, 213, 214, 215, 216, 218, 250, 301, 302, 303, 401, 402, 404, 501, 502, 504 and 999. Wetland S5/108, 250, 401 and 402 are located in the City of Black Diamond's Core Wetland Complex and receive a 225-foot buffer. Wetlands F, ZZ, 5 and 114 are rated as Category II wetlands with 110-foot buffers. Wetlands G, 119, 125 and 301 are rated as Category III wetlands with 110-foot buffers. Wetlands 7, 10, 11, 13, 14, 106, 112, 123, 202, 206, 218, 404, 501, 502 and 999 are rated as Category III wetlands with 60-foot buffers. Wetlands Y, YY, 2, 3, 102, 103, 105, 113, 200, 201, 201B, 212, 213, 214, 215, 216, 302, 303 and 504 are rated as Category IV wetlands with 40-foot buffers. (DOE, Black Diamond classifications)

PROJECT DESCRIPTION AND CONCEPTUAL MITIGATION

The applicant is seeking a Master Plan Development (MPD) permit to develop the approximate 1,200 acres of the Villages property with a mix of residential, retail/commercial, office, educational, civic and recreational uses. Roads, utilities and stormwater facilities will be required for such a development. Wetland and buffer impacts will occur as part of this MPD permit application and impacts mitigated per the

ratios and requirements of the City of Black Diamond code as well as the ratios and requirements of any agency with jurisdiction over such impacts.

It is expected that a combination of buffer averaging (BDMC 19.10.230.H) and designation of additional buffers will be offered to mitigate for any wetland or buffer impacts occurring as part of the MPD permit application. Additional buffer will provide connectivity and increased width of existing wetland corridors. On-site mitigation within the same sub drainage system where impacts occur will be prioritized.

WETLAND CLASSIFICATIONS - COWARDIN SYSTEM

The Cowardin System is a comprehensive wetland and deepwater habitat classification system that was developed for the U.S. Fish and Wildlife Service. It is recognized nationally as a standard system for classifying vegetation in wetlands.

There are several questions in the Department of Ecology (DOE) Wetland Rating Form for Western Washington that require classifying vegetation based on the Cowardin System. Therefore, in addition to classifying wetlands according the City of Black Diamond requirements, the wetlands on this site have been classified according to the Cowardin System. The Cowardin System is described in Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979). Classifications for the wetlands on this site are as follows:

Wetland F

Palustrine, Emergent Wetland, Persistent, Seasonally Flooded
(PEMC)

Wetland B4

Palustrine, Scrub-shrub Wetland, Broad-leaved Deciduous, Saturated
(PSSB)

Wetland TOS

Palustrine, Scrub-shrub Wetland, Broad-leaved Deciduous, Seasonally Flooded/Saturated
(PSSE)

Wetlands A4, A6, A7, B6(A-E), B7, D1, D4, D9, D10, D11, T, E7, E8, E10, S1/S2, S3/S4, S4 EAST, S6/S7/S8, S18/S19/S20, G, Y, YY, 2, 5, 7, 10, 11, 13, 14, 102, 103, 105, 106, 112, 113, 119, 200, 201, 201B, 202, 206, 212, 213, 214, 216, 218, 250, 302, 303, 401, 402, 404, 501, 502 and 999

Palustrine, Forested Wetland, Broad-leaved Deciduous, Saturated
(PFOB)

Wetlands 3 and 215

Palustrine, Forested Wetland, Needle-leaved Evergreen, Saturated
(PFOB)

Wetlands T and S5/08

Palustrine, Forested Wetland, Needle-leaved Evergreen, Seasonally Flooded (PFOC)

Wetlands D2, PQ, S, E1, S9, S11, S12, S14, J, K, M, Q, R, U, W, AA, BB, CC, DD, EE, GG, JJ, KK, LL, ZZ, 114, 123, 125, 301 and 504

Palustrine, Forested Wetland, Broad-leaved Deciduous, Seasonally Flooded/Saturated (PFOE)

Wetlands B1, B3, D2

Palustrine, Forested Wetland, Needle-leaved Evergreen, Seasonally Flooded/Saturated (PFOE)

WETLAND CLASSIFICATIONS - CITY OF BLACK DIAMOND

In February 2009, the City of Black Diamond adopted an updated Sensitive Areas Ordinance (SAO), Chapter 19.10. According to the updated ordinance, wetlands are rated within the following categories: “Core Wetland and Stream Complex”, “Headwater Wetlands”, and “Other Wetlands”. Several wetlands within the Villages Main Property are included in the Core Wetland and Stream Complex. All other wetlands will be classified according to the Washington State Wetland Rating System for Western Washington, revised August 2004 (Ecology Publication #04-06-025). Regulated buffers are determined using Black Diamond Sensitive Areas Ordinance, Chapter 19.10.230.

The recently updated SAO has put a higher priority on habitat, which is reflected in buffer widths. Because of this WRI recently revisited the site to verify wetland classifications and habitat scores according to the Department of Ecology (DOE) Wetland Rating Forms. The wetland classifications and regulated buffers for the wetlands identified on this are as follows.

Wetland and Stream Core Complex

Wetlands TOS, a portion of E1, S5/108, 250, 401 and 402

These wetlands are associated with Rock Creek (TOS) and Black Diamond Lake (S5/108), and have been determined to provide the highest level of ecological functions. In the City of Black Diamond, the standard protective buffer width for Core Complex Wetlands is 225-feet, per BDMC 19.10.230.B.

Category I Wetlands

Wetlands E1 and Q

These wetlands received total scores of 70 points or greater with habitat scores between 20-28 points on the DOE Wetland Rating Form and classify as Category I wetlands. In the City of Black Diamond, the standard protective buffer width for these Category I wetlands is 110-feet, per 19.10.230.D.

Category II Wetlands

Wetlands B4, D2, S1/S2, S3/S4, S4 East, S6/S7/S8, S18/S19/S20, GG, F, ZZ, 5 and 114

These wetlands received total scores between 51-69 points for functions with habitat scores between 20-28 points on the DOE Wetland Rating Form and classify as Category II wetlands. In the City of Black Diamond, the standard protective buffer width for these Category II wetlands is **110-feet**, per 19.10.230.D.

Wetlands B1, B3, BB, DD and KK

These wetlands received total scores between 51-69 points for functions on the DOE Wetland Rating Form and classify as Category II wetlands. In the City of Black Diamond, the standard protective buffer width for these Category II wetlands is **75-feet**, per 19.10.230.D.

Category III Wetlands

Wetlands A6, D9, D10, D11, E7, E8, E10, J, K, M, R, U, W, AA, JJ, G, 119, 125 and 301

These wetlands received total scores between 30-50 points for functions with habitat scores between 20-28 points on the DOE Wetland Rating Form, which equate to Category III wetlands. In the City of Black Diamond, the standard protective buffer width for these Category III wetlands is **110-feet**, per 19.10.230.D.

Wetlands B6(A-E), B7, A4, A7, D1, D4, PQ, S, T, S9, S11, S12, S14, CC LL, 7, 10, 11, 13, 14, 106, 112, 123, 202, 206, 218, 404, 501, 502 and 999

These wetlands received total scores between 30-50 points for functions on the DOE Wetland Rating Form and classify as Category III wetlands. In the City of Black Diamond, the standard protective buffer width for these Category III wetlands is **60-feet**, per 19.10.230.D.

Category IV Wetlands

Wetlands Y, YY, 2, 3, 102, 103, 105, 113, 201, 200, 201B, 212, 213, 214, 215, 216, 302, 303 and 504

These wetlands received total scores of less than 30 points for functions on the DOE rating forms. In the City of Black Diamond, the standard protective buffer width for these Category III wetlands is **40-feet**, per 19.10.230.D.

Table 1: Wetland Information

Wetland	Wetland Size Acres (Sq. ft.)	HGM Class	City of BD Classification	Total Score on DOE Rating Form	Habitat Score on DOE Rating Form	City of BD Minimum Buffer	Core Wetland and Stream Complex
PARCEL B - 12 Wetlands							
B1	0.66 (28,807)	Depressional	Category II	54	14	75'	
B3	1.68 (73,023)	Depressional	Category II	54	14	75'	

Wetland	Wetland Size Acres (Sq. ft.)	HGM Class	City of BD Classification	Total Score on DOE Rating Form	Habitat Score on DOE Rating Form	City of BD Minimum Buffer	Core Wetland and Stream Complex
B4	5.67 (247,199)	Depressional	Category II	52	22	110'	
B6-A	0.06 (2,788)	Slope	Category III	35	19	60'	
B6-B	0.07 (3,218)	Slope	Category III	35	19	60'	
B6-C	0.18 (7,980)	Slope	Category III	35	19	60'	
B6-D	0.2 (8,836)	Slope	Category III	35	19	60'	
B6-E	0.15 (6,669)	Slope	Category III	35	19	60'	
B7	0.09 (3,950)	Depressional	Category III	36	12	60'	
A4	0.33 (14,346)	Depressional	Category III	46	16	60'	
A6	0.31 (13,432)	Depressional	Category III	46	20	110'	
A7	0.72 (31,472)	Depressional	Category III	42	16	60'	
PARCEL C							
No wetlands	-	-	-	-	-	-	-
PARCEL D - 10 Wetlands							
D1	0.1 (4,303)	Depressional	Category III	39	17	60'	
D2	0.04 (1,611)	Depressional	Category II	55	21	110'	
D4	0.1 (4,626)	Depressional	Category III	32	17	60'	
D9	0.09 (4,344)	Depressional	Category III	40	20	110'	
D10	0.07 (3,227)	Depressional	Category III	42	20	110'	
D11	0.07 (2,892)	Depressional	Category III	40	20	110'	
PQ	1.8 (79,341)	Slope	Category III	30	19	60'	
S	1.4 (61,804)	Depressional	Category III	35	17	60'	
T	0.28 (12,570)	Depressional	Category III	35	17	60'	
E1	1.0 (43,561)			0			

Wetland	Wetland Size Acres (Sq. ft.)	HGM Class	City of BD Classification	Total Score on DOE Rating Form	Habitat Score on DOE Rating Form	City of BD Minimum Buffer	Core Wetland and Stream Complex
PARCEL E - 5 Wetlands							
E1* portion included in CORE	11.2 (488,401)	Riverine	Category I	72	24	110'/225'	X
E7	0.09 (3,781)	Depressional	Category III	43	20	110'	
E8	0.07 (2,929)	Depressional	Category III	43	20	110'	
E10	0.1 (4,324)	Depressional	Category III	44	21	110'	
TOS	43.2 (1,881,893)	Riverine	Category I	87	27	225'	X
PARCEL F -25 Wetlands							
S1/S2	4.2 (182,361)	Slope	Category II	60	22	110'	
S3/S4	7.26 (316,035)	Slope	Category II	60	22	110'	
S4 EAST	7.08 (308,533)	Slope	Category II	60	22	110'	
S5/108	5.5 (241,348)	Lake Fringe	Category I	83	29	225'	X
S6/S7/S8	9.76 (425,139)	Slope	Category II	60	22	110'	
S9	0.24 (10,381)	Depressional	Category III	40	18	60'	
S11	0.07 (2,870)	Depressional	Category III	40	18	60'	
S12	0.13 (5,672)	Depressional	Category III	40	18	60'	
S14	0.15 (6,687)	Depressional	Category III	40	18	60'	
S18/S19/S20	1.88 (81,910)	Slope	Category II	60	22	110'	
J	0.27 (11,803)	Slope	Category III	44	25	110'	
K	0.08 (3,565)	Depressional	Category III	37	21	110'	
M	0.03 (1,621)	Depressional	Category III	38	22	110'	
Q	5.36 (233,681)	Depressional	Category I	70	26	110'	
R	0.22 (9,431)	Depressional	Category III	38	22	110'	

Wetland	Wetland Size Acres (Sq. ft.)	HGM Class	City of BD Classification	Total Score on DOE Rating Form	Habitat Score on DOE Rating Form	City of BD Minimum Buffer	Core Wetland and Stream Complex
U	0.81 (35,251)	Depressional	Category III	43	20	110'	
W	0.06 (2,493)	Depressional	Category III	38	22	110'	
AA	0.003 (126)	Depressional	Category III	48	20	110'	
BB	0.03 (1,186)	Depressional	Category II	55	19	75'	
CC	0.003 (132)	Depressional	Category III	37	13	60'	
DD	0.02 (911)	Depressional	Category II	56	16	75'	
GG	0.30 (12,911)	Depressional	Category II	66	20	110'	
JJ	0.12 (5,496)	Depressional	Category III	50	20	110'	
KK	0.02 (965)	Depressional	Category II	55	19	75'	
LL	0.01 (503)	Depressional	Category III	56	16	60'	
PARCEL BDA -46 Wetlands							
F	2.3 (101,243)	Depressional	Category II	55	26	110'	
G	0.34 (14,711)	Depressional	Category III	45	20	110'	
Y	0.04 (1,828)	Depressional	Category IV	28	17	40'	
YY	0.06 (2,742)	Depressional	Category IV	29	18	40'	
ZZ	1.2 (50,251)	Depressional	Category II	52	22	110'	
2	0.03 (1,244)	Depressional	Category IV	28	17	40'	
3	0.09 (3,941)	Depressional	Category IV	28	17	40'	
5	2.36 (102,643)	Depressional	Category II	52	24	110'	
7	0.02 (770)	Depressional	Category III	40	17	60'	
10	0.03 (1,136)	Depressional	Category III	35	17	60'	
11	0.1 (4,613)	Depressional	Category III	35	17	60'	

Wetland	Wetland Size Acres (Sq. ft.)	HGM Class	City of BD Classification	Total Score on DOE Rating Form	Habitat Score on DOE Rating Form	City of BD Minimum Buffer	Core Wetland and Stream Complex
13	0.1 (4,566)	Depressional	Category III	35	17	60'	
14	0.62 (27,219)	Depressional	Category III	35	17	60'	
102	0.21 (9,236)	Depressional	Category IV	28	17	40'	
103	0.27 (11,892)	Depressional	Category IV	29	18	40'	
105	0.09 (4,050)	Depressional	Category IV	28	17	40'	
106	0.01 (548)	Depressional	Category III	40	17	60'	
S5/108	47.4 (2,064,606)	Depressional	Category I	83	29	225'	X
112	0.3 (12,983)	Depressional	Category III	41	18	60'	
113	0.01 (449)	Depressional	Category IV	27	17	40'	
114	3.7 (162,114)	Depressional	Category II	52	22	110'	
119	1.8 (79,809)	Depressional	Category III	50	22	110'	
123	0.02 (748)	Depressional	Category III	35	17	60'	
125	0.35 (15,287)	Depressional	Category III	48	20	110'	
200	0.09 (3,802)	Depressional	Category IV	28	17	40'	
201	0.09 (3,819)	Depressional	Category IV	28	17	40'	
201B	0.04 (1,928)	Depressional	Category IV	27	17	40'	
202	0.02 (981)	Depressional	Category III	41	18	60'	
206	0.003 (140)	Depressional	Category III	35	17	60'	
212	0.01 (453)	Depressional	Category IV	29	18	40'	
213	0.05 (2,243)	Depressional	Category IV	28	17	40'	
214	0.16 (6,760)	Depressional	Category IV	29	18	40'	
215	0.004 (172)	Depressional	Category IV	28	17	40'	

Wetland	Wetland Size Acres (Sq. ft.)	HGM Class	City of BD Classification	Total Score on DOE Rating Form	Habitat Score on DOE Rating Form	City of BD Minimum Buffer	Core Wetland and Stream Complex
216	0.02 (1,019)	Depressional	Category IV	28	17	40'	
218	0.03 (1,122)	Depressional	Category III	41	18	60'	
250	0.02 (981)	Depressional	Category III	41	18	225'	X
301	1.0 (44,032)	Depressional	Category III	48	20	110'	
302	0.004 (165)	Depressional	Category IV	26	16	40'	
303	0.07 (3,052)	Depressional	Category IV	26	16	40'	
401	0.29 (12,622)	Slope	Category III	35	21	225'	X
402	0.14 (6,120)	Slope	Category III	35	21	225'	X
404	0.08 (3,296)	Depressional	Category III	40	17	60'	
501	0.05 (2,255)	Depressional	Category III	36	18	60'	
502	0.003 (141)	Depressional	Category III	35	17	60'	
504	0.03 (1,141)	Depressional	Category IV	26	16	40'	
999	0.17 (7,572)	Depressional	Category III	40	17	60'	

CORE WETLAND AND STREAM COMPLEX FIELD VERIFICATION

The general boundaries of the Core Wetland and Stream Complex have been determined and defined in the Best Available Science Document, Technical Appendix B. Black Diamond Municipal Code allows these boundaries to be further defined by field verification. (BDMC 19.10.210).

The BAS document includes several wetlands delineated on the Villages properties in the Core Complex, however, based on field observation, review of topographical information and basin surveys, in certain areas the general wetland boundaries identified do not appear to contribute to or share hydrologic function with these Core Wetlands. In particular, on Parcel BDA, Wetlands F, 10, 11, 13, 14, 114, 123, 125, 202, 206, 501 and 502. Topographic data indicate these wetlands drain away from the Core Wetlands. As such, the above listed wetlands were rated with the DOE rating form and designated the appropriate buffers, see Table 1 above.

WETLAND DETERMINATION REPORT

Methodology for Designating Wetlands

On site, the routine methodology described in the Washington State Wetlands Identification and Delineation Manual (Washington State Department of Ecology Publication #96-94, March 1997) was used for this determination, as required by the City of Black Diamond. Under this method, the process for making a wetland determination is based on three sequential steps:

- 1.) Examination of the site for hydrophytic vegetation (species present and percent cover);
- 2.) If hydrophytic vegetation is found, then the presence of hydric soils is determined.
- 3.) The final step is determining if wetland hydrology exists in the area examined under the first two steps.

The following criteria descriptions were used in the boundary determination:

Vegetation Criteria

The Washington State Wetlands Identification and Delineation Manual, 1997 edition, defines hydrophytic vegetation as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation, or soil saturation, produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present. 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.

Soils Criteria and Mapped Description

The Washington State Wetlands Identification and Delineation Manual, 1997 edition, defines 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.

The soils underlying the study area are mapped in the Soil Survey of King County Area Washington, 1973 edition as Alderwood gravelly sandy loam, 6 to 15 percent slopes (AgC), Alderwood gravelly sandy loam, 15 to 30 percent slopes (AgD), Everett gravelly sandy loam, 15 to 30 percent slopes (EvC), Seattle Muck (Sk) and Bellingham silt loam (Bh).

The Alderwood gravelly sandy loam, 6 to 15 percent slopes (AgC) soil unit is described as rolling with irregularly shaped areas ranging from 10 to about 600 acres in size. The A horizon ranges from very dark brown to dark brown. The B-horizon is dark brown, grayish brown and dark yellowish brown. Permeability is moderately rapid in the surface layer and subsoil and very slow in the substratum. Available water capacity is described as low. Included within this soil unit are the poorly drained Norma, Bellingham, Seattle,

Tukwila, Shalcar soils, and Alderwood soils that have slopes gentler or steeper than 6 to 15 percent. Included soil units make up no more than 30 percent of the total acreage. Mapped on Parcels B, D, E, F and BDA.

The Alderwood gravelly sandy loam, 15 to 30 percent slopes (AgD) soil unit is made up of moderately well drained soils that have a weakly consolidated substratum at a depth of 24 to 40 inches. In a representative profile, the surface layer and subsoil are very dark brown, dark brown, and grayish brown gravelly sandy loam about 27 inches thick. The substratum is grayish-brown, weakly consolidated to strongly consolidated glacial till that extends to a depth of 60 inches and more. Soils included with this soil unit make up no more than 30 percent of the total acreage. Some areas are up to 25 percent Everett soils that have slopes of 15 to 30 percent, and some areas are up to 2 percent Bellingham, Norma, and Seattle soils, which are in depressions. Runoff is medium, and the erosion hazard is severe. Mapped on Parcels B, F and BDA.

The Everett Series is made up of somewhat excessively drained soils that are underlain by very gravelly sand at a depth of 18 to 36 inches. These soils formed in very gravelly glacial outwash deposits, under conifers. In a representative profile, the surface layer and subsoil are black to brown, gravelly to very gravelly sandy loam about 32 inches thick. Soils included with this soil in mapping make up no more than 30 percent of the total acreage. Permeability is rapid. Available water capacity is low. Mapped on Parcels B, C, D, E, F and BDA.

The Seattle series 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 Tukwila 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. Mapped on Parcels E and BDA.

The Bellingham series is made up of poorly drained soils formed in alluvium under grass and sedges. These soils are nearly level and are mostly in depressions on the upland till. In a representative profile, the surface layer is very dark brown silt loam about 11 inches thick. The subsoil is mottled grey silty clay loam about 49 inches thick. Included in this mapping were small areas of Alderwood, Everett, and Seattle soils. Total inclusions do not exceed 15 percent of the total acreage. Permeability of this soil is slow. The available water capacity is high. Bellingham and Seattle soils are included on the Hydric Soils List for Washington. Mapped on Parcel E.

Hydrology Criteria:

The 1997 edition of the Washington State Wetlands Identification and Delineation Manual states that 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 that “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.”

Additionally, the manual states that “areas which are seasonally inundated and/or saturated to the surface for a consecutive number of days ≥ 12.5 percent of the growing season are wetlands, provided the soil and vegetation parameters are met. Areas inundated or saturated between 5 and 12.5 percent of the growing season in most years may or may not be wetlands. Areas saturated to the surface for less than 5 percent of the growing season are non-wetlands.” Field indicators were used to determine whether wetland hydrology parameters were met on this site.

REGULATED BUFFERS DISCUSSION

The regulated buffers for “Core” and “Headwater” wetlands are based on recommendations made by Parametrix in the document titled Best Available Science Review and Recommendations for Code Update (September 2008). In this document, wetland/stream complexes associated with Rock Creek, Jones Lake and Jones Creek corridor and the Black Diamond Lake/Stream corridors are recognized as having high functional values. These wetland/stream complexes, as a core, generally provide high levels of water supply, water quality improvement, and wildlife habitat. For this reason a recommended maximum 225-foot buffer for stream and wetlands within this core complex shall apply.

Wetland/stream complexes associated with headwaters of Ginder Creek, Lawson Creek, and Ravensdale Creek are also recognized as having high functional values. These wetland complexes contribute important surface and groundwater to the core complex. Buffer areas within 50-feet of the wetland protect water quality function, while buffers beyond 50-feet are primarily intended for protecting wildlife habitat. For headwaters, 225-foot buffers shall apply.

For all other wetlands, the city has adopted the recommended minimum buffer requirements under the Department of Ecology’s Guidance on Wetlands in Washington State (2005), Volume 2 - Protecting and Managing Wetlands, Appendix 8C (moderate intensity land use). The buffer widths in the Guidance are based on the wetland category, the intensity of the impacts, and the functions or special characteristics (i.e. habitat function) of the wetland that needs to be protected as determined through the rating system.

Based on the rationales described above and the requirements in Chapter 19.10 of the

Black Diamond Sensitive Areas Ordinance, buffers for the on-site wetlands are recommended in the table below.

BOUNDARY DETERMINATION FINDINGS

Wetland Criteria

The dominance of species rated “Facultative” and wetter meets the criteria for hydrophytic vegetation in areas mapped as wetland. The presence of low chroma, saturated soils suggest that reducing conditions are present long enough during the growing season to develop anaerobic conditions in the upper part of the soil horizon. These characteristics meet the criteria for wetland soils. The areas mapped as wetland were saturated in the upper part at the time of the investigation, and appear to be seasonally inundated and/or saturated to the surface for a consecutive number of days ≥ 12.5 percent of the growing season, thereby fulfilling wetland hydrology criteria.

Non-wetland Criteria

Based on the lack of field indicators, it appears that the non-wetland areas of the site are saturated to the surface for less than 12.5 percent of the growing season, thereby not fulfilling wetland hydrology criteria.

Parcel B

There are twelve identified wetlands on this parcel. The wetlands are labeled as Wetlands B1, B3, B4, B6(A-E), B7, A4, A6 and A7.

Wetland Areas

The following is a list of dominant species identified within areas mapped as wetlands on Parcel B: red alder (*Alnus rubra*, Fac), black cottonwood (*Populus balsamifera*, Fac), western red cedar (*Thuja plicata*, Fac), pacific willow (*Salix lucida*, FacW), Scouler’s willow (*Salix scouleriana*, Fac), Himalayan blackberry (*Rubus armeniacus*, FacU), salmonberry (*Rubus spectabilis*, Fac+), vine maple (*Acer circinatum*, Fac-), red osier dogwood (*Cornus sericea*, FacW), Pacific water parsley (*Oenanthe sarmentosa*, Obl), creeping buttercup (*Ranunculus repens*, FacW) and lady fern (*Athyrium filix-femina*, Fac).

The soil colors observed within the on-site wetlands include black (10YR 2/1), very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) with redoximorphic features. Soil textures are typically loam, silt loam, and sandy loam. At the time of the site investigations, the soils were saturated within the upper 12 inches.

Non-wetland Areas

The following is a list of dominant species identified within areas mapped as non-wetlands: Douglas fir (*Pseudotsuga menziesii*, FacU), western red cedar, red alder, bitter cherry (*Prunus emarginata*, FacU), big leaf maple (*Acer macrophyllum*, FacU), salmonberry, Himalayan blackberry, vine maple, hazelnut (*Corylus cornuta*, FacU), salal

(*Gaultheria shallon*, FacU), red elderberry (*Sambucus racemosa*, FacU), Oregon grape (*Mahonia nervosa*, FacU), sword fern (*Polystichum munitum*, FacU) and trailing blackberry (*Rubus ursinus*, FacU).

The soils underlying the areas mapped as non-wetlands on this site are typically dark brown (10YR 3/3) and dark yellowish brown (10YR 3/4). No redoximorphic features were observed within the soil samples. The soils have a silt loam texture. They were slightly moist to dry during the site investigation. Based on these characteristics, wetland soils are not present within the areas mapped as non-wetland.

Parcel C

Parcel C is vegetated with 15± year-old managed Douglas fir and dense native shrub ground cover. The parcel contains a limited trail system. There are no identified wetlands on this parcel.

Non-wetland Areas

The following is a list of dominant species identified within areas mapped as non-wetlands on Parcel C: Douglas fir (*Pseudotsuga menziesii*, FacU), big leaf maple (*Acer macrophyllum*, FacU), salmonberry, Himalayan blackberry, vine maple, Scotch broom (*Cytisus scoparius*, nol/Upl), Indian plum (*Oemleria cerasiformis*, FacU), salal (*Gaultheria shallon*, FacU), snowberry (*Symphoricarpos albus*, FacU-), orange honeysuckle (*Lonicera ciliosa*, NOL), white clover (*Trifolium repens*, Fac), bentgrass species (*Agrostis sp.*, Fac-FacW), velvetgrass (*Holcus lanatus*, Fac), Oregon grape (*Mahonia nervosa*, FacU), bracken fern (*Pteridium aquilinum*, FacU), sword fern (*Polystichum munitum*, FacU) and trailing blackberry (*Rubus ursinus*, FacU).

The soils underlying the areas mapped as non-wetlands on this site are typically dark brown (10YR 3/3) and dark yellowish brown (10YR 3/6). No redoximorphic features were observed within the soil samples. The soils have a gravelly loam texture. They were dry during the site investigation. Based on these characteristics, wetland soils are not present within the areas mapped as non-wetland.

Parcel D

The northern portion of Parcel D is vegetated with 15± year-old managed Douglas fir and dense native shrub ground cover. There is an extensive road system on this parcel that is used for unauthorized ATV recreation. A large gravel borrow pit is located near the center of the parcel. The south portion of the property is vegetated with even-aged stand of Douglas fir. There are ten identified wetlands on this parcel. The wetlands are labeled as Wetlands D1, D2, D4, D9, D10, D11, PQ, S and T. A small portion of Wetland E1 is located on this parcel near the northeast corner. This wetland exists primarily on Parcel E and is described below with the Parcel E wetlands.

Wetland Areas

The following is a list of dominant species identified within areas mapped as wetlands on Parcel D: red alder (*Alnus rubra*, Fac), black cottonwood (*Populus balsamifera*,

Fac), western red cedar (*Thuja plicata*, Fac), Sitka spruce (*Picea sitchensis*, Fac), Western hemlock (*Tsuga heterophylla*, FacU-), pacific willow (*Salix lucida*, FacW), Himalayan blackberry (*Rubus armeniacus*, FacU), salmonberry (*Rubus spectabilis*, Fac+), cascara (*Rhamnus purshiana*, Fac-), vine maple (*Acer circinatum*, Fac-), black twinberry (*Lonicera involucrata*, Fac+), hardhack (*Spiraea douglasii*, FacW), false lily-of-the-valley (*Maianthemum dilatatum*, Fac), Cooley's hedge-nettle (*Stachys cooleyae*, FacW), Pacific bleeding heart (*Dicentra formosa*, FacU+), Carex species (*Carex sp.*, Fac-Obl), slough sedge (*Carex obnupta*, Obl), skunk cabbage (*Lysichiton americanum*, Obl), piggy-back plant (*Tolmiea menziesii*, Fac), sword fern (*Polystichum munitum*, FacU) and lady fern (*Athyrium filix-femina*, Fac).

The soil colors observed within the on-site wetlands include black (10YR 2/1), very dark gray (10YR 3/1), dark grayish brown (10YR 4/2) with redoximorphic features, very dark grayish brown (10YR 3/2) and dark grayish brown (2.5Y 4/2) with redoximorphic features. Soil textures are typically silt loam and gravelly silt loam. At the time of the site investigations, the soils were moist to saturated within the upper 12 inches.

Non-wetland Areas

The following is a list of dominant species identified within areas mapped as non-wetlands: Douglas fir (*Pseudotsuga menziesii*, FacU), Western red cedar, Western hemlock, bitter cherry (*Prunus emarginata*, FacU), big leaf maple (*Acer macrophyllum*, FacU), cascara (*Rhamnus purshiana*, Fac-), holly (*Ilex aquifolium*, FacU), baldhip rose (*Rosa gymnocarpa*, FacU), Scotch broom (*Cytisus scoparius*, nol/Upl), salmonberry, Himalayan blackberry, vine maple, salal (*Gaultheria shallon*, FacU), Oregon grape (*Mahonia nervosa*, FacU), trailing blackberry (*Rubus ursinus*, FacU), herb-Robert (*Geranium robertianum*, Nol), sword fern (*Polystichum munitum*, FacU), bracken fern (*Pteridium aquilinum*, FacU) and lady fern (*Athyrium filix-femina*, Fac).

The soils underlying the areas mapped as non-wetlands on this site are typically very dark brown (10YR 2/2), dark brown (10YR 3/3) and brown (10YR 4/3). No redoximorphic features were observed within the soil samples. The soils have a silt loam, gravelly silt loam and Gravelly sandy loam texture. They were moist to dry during the site investigation. Based on these characteristics, wetland soils are not present within the areas mapped as non-wetland.

Parcel E

Parcel E is vegetated by an even-aged conifer forested. There are five identified wetlands on this parcel. The wetlands are labeled as Wetlands E1, E7, E8, E10 and TOS. A small portion of Wetland E1 extends onto Parcel D.

Wetland Areas

The following is a list of dominant species identified within areas mapped as wetlands on Parcel E: red alder (*Alnus rubra*, Fac), black cottonwood (*Populus balsamifera*, Fac), Western hemlock (*Tsuga heterophylla*, FacU-), Sitka spruce (*Picea sitchensis*, Fac), cascara (*Rhamnus purshiana*, Fac-), red osier dogwood (*Cornus sericea*, FacW), pacific willow (*Salix lucida*, FacW), salmonberry (*Rubus spectabilis*, Fac+), vine maple (*Acer*

circinatum, Fac-), hardhack (*Spiraea douglasii*, FacW), *Carex* species (*Carex* sp., Fac-Obl), tall managrass (*Glyceria elata*, FacW), Cooley's hedge-nettle (*Stachys cooleyae*, FacW), American speedwell (*Veronica americana*, Obl), skunk cabbage (*Lysichiton americanum*, Obl), and lady fern (*Athyrium filix-femina*, Fac).

The soil colors observed within the on-site wetlands include black (10YR 2/1), very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2). Soil textures are typically silt loam and organic silt and muck. At the time of the site investigations, the soils were moist to saturated within the upper 12 inches.

Non-wetland Areas

The following is a list of dominant species identified within areas mapped as non-wetlands: Douglas fir (*Pseudotsuga menziesii*, FacU), Western hemlock, salmonberry, vine maple, trailing blackberry (*Rubus ursinus*, FacU), red elderberry (*Sambucus racemosa*, FacU), holly (*Ilex aquifolium*, FacU), false lily-of-the-valley (*Maianthemum dilatatum*, Fac), Pacific bleeding heart (*Dicentra formosa*, FacU+), siberian miner's-lettuce (*Claytonia sibirica*, Fac-), Pacific waterleaf (*Hydrophyllum tenuipes*, NOL) and sword fern (*Polystichum munitum*, FacU).

The soils underlying the areas mapped as non-wetlands on this site are typically dark yellowish brown (10YR 4/4) and brown (10YR 4/3). No redoximorphic features were observed within the soil samples. The soils have a gravelly sandy loam texture. They were dry during the site investigation. Based on these characteristics, wetland soils are not present within the areas mapped as non-wetland.

Parcel F

Parcel F is vegetated by an even-aged conifer forested. Parcel F drains in three directions: northeast toward Jones Lake, northwest to Black Diamond Lake and south to the Green River. There are twenty-five identified wetlands on this parcel. The wetlands are labeled as Wetlands S1/S2, S3/S4, S4 East, S5/108, S6/S7/S8, S9, S11, S12, S14, S18/S19/S20, J, K, M, Q, R, U, W, AA, BB, CC, DD, GG, JJ, KK and LL.

Wetland Areas

The following is a list of dominant species identified within areas mapped as wetlands on Parcel F: red alder (*Alnus rubra*, Fac), black cottonwood (*Populus balsamifera*, Fac), Western hemlock (*Tsuga heterophylla*, FacU-), pacific willow (*Salix lucida*, FacW), Himalayan blackberry (*Rubus armeniacus*, FacU), salmonberry (*Rubus spectabilis*, Fac+), vine maple (*Acer circinatum*, Fac-), black twinberry (*Lonicera involucrata*, Fac+), hardhack (*Spiraea douglasii*, FacW), creeping buttercup (*Ranunculus repens*, FacW), field horsetail (*Equisetum arvense*, Fac), slough sedge (*Carex obnupta*, Obl), skunk cabbage (*Lysichiton americanum*, Obl), piggy-back plant (*Tolmiea menziesii*, Fac), sword fern (*Polystichum munitum*, FacU) and lady fern (*Athyrium filix-femina*, Fac).

The soil colors observed within the on-site wetlands include black (10YR 2/1), very dark gray (10YR 3/1) and dark grayish brown (10YR 4/2) with redoximorphic features. Soil

textures are typically silt loam and organic silt loam. At the time of the site investigations, the soils were moist to saturated within the upper 12 inches.

Non-wetland Areas

The following is a list of dominant species identified within areas mapped as non-wetlands: Douglas fir (*Pseudotsuga menziesii*, FacU), Western hemlock, black cottonwood, red alder, salmonberry, vine maple (*Acer circinatum*, Fac-), red huckleberry (*Vaccinium parvifolium*, FacU), Indian plum (*Oemleria cerasiformis*, FacU), vine maple, red elderberry (*Sambucus racemosa*, FacU), salal (*Gaultheria shallon*, FacU), trailing blackberry (*Rubus ursinus*, FacU), stinging nettle (*Urtica dioica*, Fac+), deer fern (*Blechnum spicant*, Fac+), sword fern (*Polystichum munitum*, FacU) and lady fern (*Athyrium filix-femina*, Fac).

The soils underlying the areas mapped as non-wetlands on this site are typically dark yellowish brown (10YR 3/4, 10YR 4/4), yellowish brown (10YR 5/4) and light yellowish brown (2.5Y 6/3). No redoximorphic features were observed within the soil samples. The soils have a gravelly sandy loam texture. They were slightly moist to moist during the site investigation. Based on these characteristics, wetland soils are not present within the areas mapped as non-wetland.

Parcel BDA

The eastern half of the BDA parcel is primarily covered by a mixed forest of medium-mature age. This mixed forest contains trees of varying ages with the larger trees estimated at 60 to 80 years old. The western portion of the BDA parcel is primarily vegetated with even-aged Douglas fir forests of young to medium age, approximately 30 years old. There are forty-six identified wetlands on this parcel. The wetlands are labeled as Wetlands F, G, Y, YY, ZZ, 2, 3, 5, 7, 10, 11, 13, 14, 102, 103, 105, 106, S5/108, 112, 113, 114, 119, 123, 125, 200, 201, 201B, 202, 206, 212, 213, 214, 215, 216, 218, 250, 301, 302, 303, 401, 402, 404, 501, 502, 504 and 999.

Wetland Areas

The following is a list of dominant species identified within areas mapped as wetlands on Parcel BDA: red alder (*Alnus rubra*, Fac), black cottonwood (*Populus balsamifera*, Fac), Western red cedar (*Thuja plicata*, Fac), Western hemlock (*Tsuga heterophylla*, FacU-), Sitka spruce (*Picea sitchensis*, Fac), cascara (*Rhamnus purshiana*, Fac-), Himalayan blackberry (*Rubus armeniacus*, FacU), salmonberry (*Rubus spectabilis*, Fac+), vine maple (*Acer circinatum*, Fac-), black twinberry (*Lonicera involucrata*, Fac+), hardhack (*Spiraea douglasii*, FacW), salal (*Gaultheria shallon*, FacU), speedwell (*Veronica* sp., Obl), reed canarygrass (*Phalaris arundinacea*, FacW), Cooley's hedge-nettle (*Stachys cooleyae*, FacW), Pacific water parsley (*Oenanthe sarmentosa*, Obl), slough sedge (*Carex obnupta*, Obl), skunk cabbage (*Lysichiton americanum*, Obl), piggy-back plant (*Tolmiea menziesii*, Fac), sword fern (*Polystichum munitum*, FacU) and lady fern (*Athyrium filix-femina*, Fac).

The soil colors observed within the on-site wetlands include black (10YR 2/1), very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) with redoximorphic features. Soil textures are typically sandy loam, loam, muck, silt loam, gravelly silt loam and sandy silt loam. At the time of the site investigations, the soils were moist to saturated within the upper 12 inches.

Non-wetland Areas

The following is a list of dominant species identified within areas mapped as non-wetlands: Douglas fir (*Pseudotsuga menziesii*, FacU), Western hemlock, Western red cedar, big leaf maple (*Acer macrophyllum*, FacU), red alder, cascara, salmonberry, vine maple (*Acer circinatum*, Fac-), red huckleberry (*Vaccinium parvifolium*, FacU), Indian plum (*Oemleria cerasiformis*, FacU), vine maple, red elderberry (*Sambucus racemosa*, FacU), salal, trailing blackberry (*Rubus ursinus*, FacU), piggy-back plant, deer fern (*Blechnum spicant*, Fac+) and sword fern (*Polystichum munitum*, FacU).

The soils underlying the areas mapped as non-wetlands on this site are typically very dark brown (10YR 2/2), very dark grayish brown (10YR 3/2), dark brown (10YR 3/3), dark yellowish brown (10YR 3/4, 10YR 4/6) and light yellowish brown (2.5Y 6/4). No redoximorphic features were observed within the soil samples. The soils have a gravelly sandy loam, gravelly silt loam and silt loam texture. They were dry, slightly moist and moist during the site investigation. Based on these characteristics, wetland soils are not present within the areas mapped as non-wetland.

WETLAND FUNCTIONS AND VALUES ASSESSMENT

Methodology:

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

Analysis

Hydrologic Control: Hydrologic control (flood control and water supply) is a very important function provided by wetlands. Due to their depressional characteristics, wetlands effectively function as natural water storage areas during periods of high precipitation/flooding, and are able to accumulate stormwater runoff. By storing water that otherwise might be channeled into open flow systems, wetlands can attenuate or modify potentially damaging effects of storm events, reducing erosion and peak flows to downstream systems. Additionally, the soils underlying wetlands are often less permeable, providing long-term storage of stormwater or floodflow and controlling baseflows of downstream systems. Wetlands with limited outlets store greater amounts of water than wetlands with unrestricted flow outlets. Forested areas are able to retain stormwater and help prevent soil erosion through hydrologic flows. Wetland vegetation stores excess stormwater that reaches the wetlands. This function is generally dictated by the size of the wetland and its topographic characteristics.

Water Quality Improvements: Surface runoff during periods of precipitation increases the potential for sediments and pollutants to enter surface water. Wetlands improve water quality by acting as filters as water passes through them, trapping sediments and pollutants from surface water. Ponded areas within depressional wetlands also allow sediments to drop out of suspension, thereby increasing water quality. As development increases, the potential for polluted water to reach wetlands and streams also increases. Unnaturally high inputs of pollutants, which are often found in urbanized areas, along with the size of the wetlands and the vegetation structure within them are the main limiting factors of this function.

Wildlife Habitat: Wetlands have potential to provide diverse habitat for aquatic, terrestrial, and avian species for nesting, rearing, resting, cover, and foraging. Wildlife species are commonly dependent upon a variety of intermingled habitat types, including wetlands, adjacent uplands, large bodies of water, and movement corridors between them. Human intrusion, including development within and adjacent to wetlands, and impacts to movement corridors are the most limiting factors for wildlife habitat functions.

Wetland A6

This wetland is a long and narrow depressional wetland located in the northeast portion of Parcel B. Wetland A6 extends off-site to the north. Vegetation within this wetland is generally represented by red alder, Himalayan blackberry, salmonberry, and vine maple. This wetland provides **moderate** levels of hydrologic control and water quality improvements due to the lack of an outlet, moderate size and storage capacity and dense woody vegetation. Habitat functions are somewhat limited due to the heavy recreational use of the site, its proximity to residential areas and a major highway.

Wetlands A7 and B6 A-E

These wetlands are long, narrow depressional wetlands located in the east central and west central portions of Parcel B. Wetlands A7 and B6 A-E appear to be contained on-site. Vegetation within these wetlands is generally represented by red alder, Himalayan blackberry, salmonberry, and vine maple. These wetlands provide **moderate** levels of hydrologic control and water quality improvements due to the lack of an outlet, moderate size and storage capacity and dense woody vegetation. Habitat functions are somewhat limited due to the heavy recreational use of the site, their proximity to residential areas and a major highway.

Wetland A4

This wetland is a shallow depression near the northwest corner of Parcel B where forest structure begins to change. Typical vegetation in this wetland includes red alder, salmonberry, soft rush and lady fern. This wetland provides **moderate** levels of hydrologic control and water quality improvements due to the lack of an outlet, small size, and shallow topography. The uniform habitat, heavy recreational use and proximity to residential development and major highway limit extensive wildlife use.

Wetland B1 and B3

Wetland B1 and B3 are linear, depressional wetlands located in the west central portion of Parcel B. Vegetation in these wetlands is typically comprised of red alder, Himalayan blackberry, salmonberry, vine maple and lady fern. These wetlands provide **significant** levels of hydrologic control and water quality improvements due to the lack of an outlet, moderate size and storage capacity and dense woody vegetation. Habitat functions are somewhat limited due to the heavy recreational use of the site, its proximity to residential areas and a major highway.

Wetland B4

Wetland B4 a large depressional wetland, is found in the southeast corner of Parcel B. Vegetation typical of this wetland includes red alder, Pacific willow, salmonberry, Himalayan blackberry, slough sedge, Pacific water parsley and lady fern. This wetland provides **significant** levels hydrologic control and water quality improvements due to the outlet type (intermittent), dense native vegetation and large size. Habitat functions are somewhat greater than other wetlands on this parcels due to the variety of habitat types and special habitat features.

Wetland B7

Wetland B7 is a small isolated depression located near the southeast corner of Parcel B east of the northern end of Wetland B3. Vegetation in this wetland is typically comprised of red alder, salmonberry and lady fern. This wetland provides **moderate** levels hydrologic control and water quality improvements due to the small size and shallow topography. Habitat functions are somewhat limited due to the heavy recreational use of the site, its proximity to residential areas and a major highway.

Wetlands D1 and D4

Wetlands D1 and D4 are found in the west central portion of Parcel D. These small, isolated depressions are in a moderately dense forested area. Dominant vegetation in these wetlands includes red alder, black cottonwood, Western red cedar, salmonberry, hardhack, vine maple, slough sedge, piggy-back plant and lady fern. These wetlands provide **moderate** levels of hydrologic control and water quality improvements due to their small size, very shallow topography and uniform vegetative structure. Habitat functions are somewhat limited due to the heavy recreational use of the site, its proximity to residential areas and a major highway.

Wetland D2

Wetland D2 is found in the southwest corner of Parcel D. A small portion of this large wetland is found on-site with the wetland extending to the northwest and southeast. Dominant vegetation in these wetlands includes red alder, black cottonwood, Western red cedar, Pacific willow, salmonberry, black twinberry, slough sedge, skunk cabbage and lady fern. This wetland provides **significant** levels hydrologic control and water quality improvements due to its very large size, shallow topography and diverse vegetative structure. Its function as wildlife habitat is highly valuable as it is located

within a relatively undeveloped vegetated corridor with high habitat diversity and special habitat features. Recreational use may effect wildlife use but the proximity to large corridors of undeveloped land offset the impact of human activity.

Wetlands D9, D10 and D11

Wetlands D9, D10 and D11 are found near the southeast corner of Parcel D. These small isolated depressions are surrounded by dense forest. Vegetation dominating these wetlands includes red alder, Western red cedar, salmonberry, hardhack, lady fern and slough sedge. These wetlands provide **moderate** levels of hydrologic control and water quality improvements due to their the generally small size and shallow topography. Their function as wildlife habitat is highly valuable as they are located in and adjacent to large corridors of undeveloped land with special habitat features. Recreational use may effect wildlife use but the proximity to large corridors of undeveloped land offset the impact of human activity.

Wetland PQ

Wetland PQ extends northwest from the southeast corner of Parcel D. This wetland is on a slope and has a heavily used ORV trail down the center causing channelized flow of wetland hydrology. Dominant vegetation in this wetland is comprised of red alder, salmonberry and lady fern. This wetland is severely limited in providing higher levels of hydrologic control and water quality functions due to its location on a slope and disturbances. As such, this wetland provides **moderately low** functions and values. Habitat functions remain relatively high for this wetland due it's association with vast areas of undeveloped land. Heavy recreational use around and within this wetland does provide restrict wildlife use.

Wetlands S and T

Wetlands S and T are located in the east central portion of Parcel D. These wetlands are moderate in size, depressional and isolated. Dominant vegetation in these wetlands includes red alder, black cottonwood, hardhack, Himalayan blackberry, salmonberry, piggy-back plant and slough sedge. These wetlands contain areas of organic soils. These wetlands provide **moderate** levels of hydrologic control and water quality functions due to their moderate size and topography. Habitat functions remain relatively high due to their association with vast areas of undeveloped land. Recreational use, however, may hinder wildlife.

Wetland E1 - Partial Core Wetland

Wetland E1 is a large forested wetland that extends from the southern portion of Parcel E to the northwest corner. Approximately 1 acre of this wetland extends across the boundary of Parcel E to Parcel D. A portion of Wetland E1 contributes hydrology to Core Wetland TOS. This wetland is typically comprised of red alder, black cottonwood, Sitka spruce, cascara, vine maple, salmonberry, false lily-of-the-valley, Cooley's hedge-nettle, Pacific bleeding heart and American brooklime. Areas of organic soils are present in this wetland. This wetland provides **very high** levels hydrologic control and water quality improvements due to its large size, dense woody species cover, and

ability to store large volumes of stormwater. Its function as wildlife habitat is highly valuable as it is located within a relatively undeveloped vegetated corridor with high habitat diversity and special habitat features.

Wetlands E7, E8 and E10

Wetlands E7, E8 and E10 are located in the southeastern portion of Parcel E. These small, isolated depressions may have formed in the root-wad depressions of wind thrown trees. Vegetation dominant in these wetlands includes red alder, salmonberry, vine maple and slough sedge. These wetlands provide **moderate** levels of hydrologic control and water quality improvements due to their small size and low capacity. Its function as wildlife habitat is moderately high as it is located within a relatively undeveloped vegetated corridor with high habitat diversity and special habitat features.

Wetland TOS - Core Wetland

Wetland TOS comprises much of the northeast corner of Parcel E. It is an extensive scrub-shrub system, with permanent ponding and is associated with the widespread Chub Lake/Rock Creek system. Dominant vegetation in this wetland includes minor Western hemlock, Pacific willow, hardhack, red-osier dogwood, salmonberry, skunk cabbage, tall mannagrass and lady fern. Much of this wetland contains organic soils. This wetland provides **very high** levels hydrologic control and water quality improvements due to its large size, dense woody species cover, and ability to store large volumes of stormwater. Its function as wildlife habitat is highly valuable as it is located within a relatively undeveloped vegetated corridor with high habitat diversity and special habitat features.

Wetlands S1/S2, S3/S4, S4 East and S6/S7/S8

Wetlands S1/S2, S3/S4, S4 East and S6/S7/S8 are large, forested wetlands with dense native shrub understory. These wetlands are listed from west to east across Parcel F. They are found within gently sloping, shallow drainageways and parallel one another. S1/S2 extends off-site to the south. S3/S4, S4 East and S6/S7/S8 extend off-site to the north. Dominant vegetation within these wetlands consists of black cottonwood, red alder, Western hemlock, salmonberry, hardhack, pacific willow, black twinberry, trailing blackberry, creeping buttercup, skunk cabbage and lady fern. These wetlands provide **significant** levels of hydrologic control and water quality improvements due to their large size, dense woody species cover, and ability to store large volumes of stormwater. Their function as wildlife habitat is highly valuable as it is located within a relatively undeveloped vegetated corridor with high habitat diversity and special habitat features.

Wetlands S9, S11, S12 and S14

Wetlands S9, S11, S12 and S1) are found in the southwestern portion of Parcel F. These wetlands are small depressions that appear isolated. Vegetation in these wetlands is dominated by sparse Western hemlock and red alder with salmonberry and slough sedge. These wetlands provide **moderate** levels of hydrologic control and water

quality improvements due to their small size and low capacity. Its function as wildlife habitat is moderately high as it is located within a large, undeveloped corridor with high habitat diversity and special habitat features.

Wetland S18/S19/S20

Wetland S18/S19/S20 is a forested wetland located along the eastern boundary of Parcel F. This wetland is found in a narrow drainageway and is associated with a northerly flowing fish-bearing stream. This wetland extends off-site to the north and south. Dominant vegetation in this wetland consists of Western hemlock, black cottonwood, salmonberry, hardhack and lady fern. This wetland provides **significant** levels of hydrologic control and water quality improvements due to the large size, dense woody species cover, and ability to store large volumes of stormwater. Their function as wildlife habitat is highly valuable as it is located within a relatively undeveloped vegetated corridor with high habitat diversity, association with a fish-bearing stream and special habitat features.

Wetland GG

Wetland GG is found in the eastern portion of Parcel F, east of 257th Ave SE. Much of this wetland extends off-site to the south. Dominant vegetation in this wetland includes Western hemlock, black cottonwood, red alder, salmonberry and lady fern. This wetland provides **significant** levels of hydrologic control and water quality improvements due to the large size, dense woody species cover, and ability to control and improve the quality of large volumes of stormwater. Their function as wildlife habitat is highly valuable as it is located within a relatively undeveloped vegetated corridor with high habitat diversity, association with a fish-bearing stream and special habitat features.

Wetlands K, M, R and W

Wetlands K, M, R and W are found in the south central portion of Parcel F. These wetlands are small, shallow depressions that appear to be isolated. Vegetation in these wetlands is dominated by red alder, black cottonwood, salmonberry, black twinberry and lady fern. These wetlands provide **moderately low** levels of hydrologic control and water quality improvements due to their small size and low capacities. Their function as wildlife habitat is moderately high as it is located within a large, undeveloped corridor with high habitat diversity and special habitat features.

Wetlands J and U

Wetlands J and U are located in the south central portion of Parcel F. These are large forested depressions that appear to share hydrology with Wetland Q via culverts beneath old logging roads. Wetland U also appears to share hydrology with Wetland S6/S7/S8 via a culvert. Vegetation in these wetlands is dominated by red alder, black cottonwood, minor Douglas fir, salmonberry, hardhack, Pacific willow, black twinberry, trailing blackberry, slough sedge, skunk cabbage and lady fern. Soils had high organic content in places. These wetlands provide **moderately high** levels of hydrologic control and water quality improvements due to their large size, dense woody species cover,

and ability to control and improve the quality of large volumes of stormwater. Their function as wildlife habitat is moderately high as they are located within a relatively undeveloped vegetated corridor with high habitat diversity and special habitat features.

Wetland Q

Wetland Q extends onto the southwest portion of Parcel F, in three locations. This is a large wetland system that is comprised of forested, scrub-shrub and emergent components. Dominant vegetation in this wetland is comprised of red alder, Western hemlock, black cottonwood, salmonberry, hardhack, Pacific willow, black twinberry, vine maple, Himalayan blackberry, trailing blackberry, lady fern, soft rush, slough sedge and sword fern. Soils had high organic content in places. This wetland provides **very high** levels hydrologic control and water quality improvements due to its large size, dense woody species cover, and ability to control and improve the quality of large volumes of stormwater. Its function as wildlife habitat is highly valuable as it is located within a relatively undeveloped vegetated corridor with high habitat diversity and special habitat features.

Wetlands AA, BB, CC, DD, JJ, KK and LL

Wetlands AA, BB, CC, DD, JJ, KK and LL are found in the southwest corner of Parcel F. These very small, isolated wetlands may have formed in the depressions created by wind thrown trees. Dominant vegetation in these wetlands includes sparse red alder, salmonberry, lady fern and slough sedge. These wetlands provide **moderate** levels of hydrologic control and water quality improvements due to their small size and low capacity. Their function as wildlife habitat is moderate as they are located within a relatively undeveloped vegetated corridor with high habitat diversity and special habitat features. However, their proximity to 257th Ave SE and SR169 may inhibit some wildlife use.

Wetlands Y, YY, 2, 3, 102, 103, 105, 113, 200, 201, 201B, 212, 213, 214, 215 and 216

Wetlands Y, YY, 2, 3, 102, 103, 105, 113, 200, 201, 201B, 212, 213, 214, 215 and 216 are generally located in the northern portion of Parcel BDA. These are small isolated wetlands surrounded by undeveloped, forested lands. These forested areas contain gravel roads that are used locally for recreation. Typical vegetation in these wetlands includes Western hemlock, black cottonwood, Sitka spruce, red alder, salmonberry, Himalayan blackberry, cascara, American speedwell, stinging nettle, lady fern, skunk cabbage and slough sedge. These wetlands provide **moderately low** levels of hydrologic control and water quality improvements due to their very small size, intermittent or lacking outlets and low capacity. Their function as wildlife habitat is moderate as they are located in an area of heavy recreational use and have low structural diversity. They are located within and adjacent to a relatively undeveloped vegetated corridor with high habitat diversity and special habitat features.

Wetlands 7, 106, 202, 218, 404 and 999

Wetlands 7, 106, 202, 218, 404 and 999 are generally located in the northern portion of Parcel BDA. These are small isolated wetlands surrounded by undeveloped, forested lands. Typical vegetation in these wetlands includes Western hemlock, Western red cedar, black cottonwood, red alder, salmonberry, hardhack, cascara, stinging nettle, lady fern, skunk cabbage, American speedwell and slough sedge. These wetlands provide **moderate** levels of hydrologic control and water quality improvements due to their small size, intermittent outlets and low capacity. Their function as wildlife habitat is moderate as it they located within a large, undeveloped corridor with high habitat diversity and special habitat features.

Wetland 250 - Core Wetland

Wetland 250 is located generally in the northern portion of Parcel BDA. This is a small isolated wetland is adjacent to Core Wetland S5/108 and is surrounded by undeveloped, forested lands. Typical vegetation in this wetlands includes Western hemlock, Western red cedar, black cottonwood, red alder, salmonberry, hardhack, cascara, stinging nettle, lady fern, skunk cabbage, American speedwell and slough sedge. Because of this wetlands association with the Black Diamond Lake system, is likely that this wetland contributes to the overall functions of the Core Wetland Complex and as such has the potential to provide **significant** levels of functions to the surrounding environment.

Wetlands 10, 11, 13, 14, 112, 123, 206, 501 and 502

Wetlands 10, 11, 13, 14, 112, 123, 206, 501 and 502 are generally in the south and southwestern portion of Parcel BDA. These are small isolated wetlands surrounded by undeveloped, forested lands containing gravel road networks used locally for recreational purpose. Typical vegetation in these wetlands includes Western hemlock, Western red cedar, black cottonwood, red alder, salmonberry, hardhack, cascara, stinging nettle, lady fern, skunk cabbage, American speedwell and slough sedge. These wetlands provide **moderate** levels of hydrologic control and water quality improvements due to their small size, intermittent outlets and low capacity. Their function as wildlife habitat is moderate as it they located within a large, undeveloped corridor with high habitat diversity and special habitat features.

Wetland 125 and 301

Wetland 125 and 301 are moderately sized depressional wetlands located in the western portion of Parcel BDA. These are isolated depressions within dense forested lands containing gravel road networks used locally for recreational purpose. Typical vegetation in these wetlands includes red alder, black cottonwood, black twinberry, salmonberry, cascara, hardhack, skunk cabbage, slough sedge and lady fern. These wetlands provide **moderately high** levels of hydrologic control and water quality improvements due to their size, dense woody species cover, and ability to control and improve the quality of large volumes of stormwater. Their function as wildlife habitat is highly valuable as they have diverse vegetative structure, many specialized habitat features and they are located within a relatively undeveloped vegetated corridor.

Wetlands ZZ, 5 and 119

Wetlands ZZ, 5 and 119 are large, depressional wetlands located at the in the northern portion of Parcel BDA. Typical vegetation in these wetlands includes Western hemlock, Western red cedar, black cottonwood, red alder, salmonberry, Himalayan blackberry, salal, hardhack, cascara, stinging nettle, lady fern, skunk cabbage and slough sedge. These wetlands provide **significant** levels of hydrologic control and water quality improvements due to their large size, dense woody species cover, and ability to store large volumes of stormwater. Their function as wildlife habitat is highly valuable as they have diverse vegetative structure, many specialized habitat features and they are located within a relatively undeveloped vegetated corridor.

Wetland 114

Wetland 114 is a large, isolated, depressional wetland. Wetland 114 is located in the western portion of Parcel BDA. Typical vegetation in this wetland includes Western hemlock, black cottonwood, red alder, salmonberry, Himalayan blackberry, hardhack, lady fern, skunk cabbage and sword fern. this wetland provides **significant** levels of hydrologic control and water quality improvements due to the large size, dense woody species cover, and ability to control and improve the quality of large volumes of stormwater. Its function as wildlife habitat is highly valuable as it is located in an area of diverse vegetative structure, many specialized habitat features and they are located within a relatively undeveloped vegetated corridor.

Wetland F

Wetland F is a large, depressional wetland located in the central portion of Parcel BDA. Typical vegetation in this wetland includes black cottonwood, red alder, salmonberry, Himalayan blackberry, hardhack, slough sedge, lady fern, skunk cabbage and sword fern. This wetland provides **significant** levels of hydrologic control and water quality improvements due to the large size, dense woody species cover, and ability to store large volumes of stormwater. Its function as wildlife habitat is highly valuable as it has diverse vegetative structure, many specialized habitat features and they are located within a relatively undeveloped vegetated corridor.

Wetland G

Wetland G is a narrow depressional wetland located in the central portion of Parcel BDA, north of Wetland F. Typical vegetation in this wetland includes Western hemlock, Western red cedar, black cottonwood, red alder, salmonberry, Himalayan blackberry, hardhack, slough sedge, lady fern, skunk cabbage and sword fern. This wetland provides **significant** levels of hydrologic control and water quality improvements due to the large size, dense woody species cover, and ability to store large volumes of stormwater. Its function as wildlife habitat is highly valuable as it has diverse vegetative structure, many specialized habitat features and they are located within a relatively undeveloped vegetated corridor.

Wetlands 302 and 303

Wetlands 302 and 303 are very small, isolated depressions located near the northern boundary of the western portion of Parcel BDA. Typical vegetation in these wetlands includes red alder, salmonberry, cascara, lady fern, reed canarygrass and Cooley's hedge nettle. These wetlands provide **moderately low** levels of hydrologic control and water quality improvements due to their small size and low capacities. Their function as wildlife habitat is moderately high as it is located within a large, undeveloped corridor with high habitat diversity and special habitat features. Habitat functions are somewhat limited due to lack of vegetative structure and diversity.

Wetland S5/108 - Core Wetland

Wetland 108 is located across much of the eastern portion of Parcel BDA and on Parcel F. This large wetland is a forested bog and includes Black Diamond Lake. Black Diamond Lake is documented as a Natural Heritage Wetland by the Washington Department of Natural Resources. This wetland was considered to be in excellent condition and viability in 1987. According to a review of current (2005) and historic (1936) aerial photography, the level of development around this wetland has not increased. Therefore, it is expected that the condition and viability of this wetland would not change. Typical vegetation is comprised of Western hemlock, Western red cedar, red alder, black cottonwood, red alder, Pacific willow, salmonberry, hardhack, red osier dogwood, pacific willow slough sedge, skunk cabbage, salal, and lady fern. Organic soils are common in this wetland. This wetland provides **very high** levels hydrologic control and water quality improvements due to its large size, dense woody species cover, open water and ability to store large volumes of stormwater. Its function as wildlife habitat is highly valuable as it is located within a relatively undeveloped vegetated corridor with high habitat diversity and special habitat features.

Wetland 501, 502 and 504

Wetland 501, 502 and 504 are generally located in the western portion of Parcel BDA. These are small, isolated depressions within dense forested lands. Typical vegetation in these wetlands include Western hemlock, Western red cedar, black cottonwood, red alder, salmonberry, hardhack, slough sedge, skunk cabbage, salal, and lady fern. These wetlands provide **moderately low** levels of hydrologic control and water quality improvements due to their small size and low capacities. Their function as wildlife habitat is moderately valuable as they are located within a relatively undeveloped vegetated corridor. Habitat functions are somewhat limited due to lack of vegetative structure and diversity.

Wetland 401 and 402 - Core Wetlands

Wetland 401 and 402 are small sloping wetlands located in the southeastern portion of Parcel BDA. These small wetlands are located within dense forested lands and outfall directly into Wetland S5/108 (Black Diamond Lake system). Typical vegetation in these wetlands include Western hemlock, Western red cedar, black cottonwood, red alder, salmonberry, hardhack, slough sedge, skunk cabbage, salal, and lady fern. Because of these wetlands association with the Black Diamond Lake system, is likely that they

contribute to the overall functions of the Core Wetland Complex and as such have the potential to provide **significant** levels of functions to the surrounding environment.

WILDLIFE

The study area contains a wide range of habitat types and features spread over a large area. Upland habitats include coniferous, mixed and immature forest habitat. Wetland and riparian habitats within the study area include forested and scrub-shrub wetlands, a bog system and areas of open water. Snags, large woody debris and edge habitat, beneficial habitat features, are found throughout the study area. The study area is not entirely contiguous. The North Property is located several miles north of the Main Property. Substantial transportation and urban infrastructure is present between and adjacent to many of the assemblages. Several of the assemblages in the Main Property are separated by large areas of undeveloped and low to high density residential developed land.

Because of the variety of habitats and features wildlife use is extensive throughout the study area. A variety of avian, mammalian, reptilian, and amphibious species are expected to utilize these habitats. This list is not intended to be all-inclusive, and may omit some bird, mammal or amphibian species that utilize the site.

Species observed or detected on or in the vicinity of the study area:

Pacific Tree Frog (*Pseudacris regilla*), double-crested Cormorant (*Phalacrocorax auritus*), wood duck (*Aix sponsa*), mallard (*Anas platyrhynchos*), American wigeon (*Anas americana*), bufflehead (*Bucephala albeola*), common merganser (*Mergus merganser*), red-winged blackbird (*Agelaius phoeniceus*), red-tailed hawk (*Buteo jamaicensis*), California quail (*Callipepla californica*), great horned owl (*Bubo virginianus*), rufous hummingbird (*Selasphorus rufus*), downy woodpecker (*Picoides pubescens*), northern flicker (*Colaptes auratus*), pileated woodpecker (*Dryocopus pileatus*), winter wren (*Troglodytes troglodytes*), golden-crowned kinglet (*Regulus satrapa*), American robin (*Turdus migratorius*), spotted towhee (*Pipilo maculatus*), song sparrow (*Melospiza melodia*), dark-eyed junco (*Junco hyemalis*), Virginia opossums (*Didelphis virginiana*), Townsend's Mole (*Scapanus townsendii*), Snowshoe Hare (*Lepus americanus*), eastern cottontail (*Sylvilagus floridanus*), mountain beaver (*Aplodontia rufa*), Douglas' squirrel (*Tamiasciurus douglasii*), Eastern gray squirrel (*Sciurus carolinensis*), beaver (*Castor Canadensis*), deer mouse (*Peromyscus maniculatus*), black bear (*Ursus americanus*), raccoons (*Procyon lotor*), coyotes (*Canis latrans*), bobcat (*Lynx rufus*), elk (*Cervus elaphus*), black-tailed deer (*Odocoileus hemionus columbianus*),

No endangered, threatened, or sensitive plants species are known or likely to occur on-site. No Federal or State listed endangered, threatened, or sensitive plants species were found during field surveys.

USE OF THIS REPORT

This Sensitive Area Study is supplied to BD Villages Partners, LP as a means of determining onsite wetland conditions, as required by the City of Black Diamond and King County 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.



Emily Hirsch
Associate Wetland Ecologist

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Table 2a: Field Data

The Villages (Parcel B)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
S1 Wetland	0-18"	Sandy Loam	10YR 2/1 w/motts	sat	<i>Alnus rubra</i>	15	Fac	Tree
					<i>Rubus spectabilis</i>	45	Fac+	Shrub
					<i>Acer circinatum</i>	25	Fac-	Shrub

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S2 Wetland	0-18"	Silt Loam	10YR 3/1	sat	<i>Alnus rubra</i>	15	Fac	Tree
					<i>Salix sitchensis</i>	5	FacW	Shrub
					<i>Rubus spectabilis</i>	45	Fac+	Shrub
					<i>Rubus armeniacus</i>	15	FacU	Shrub
					<i>Carex obnupta</i>	15	Obl	Herb
					<i>Oenanthe sarmentosa</i>	10	Obl	Herb
					<i>Athyrium filix-femina</i>	10	Fac	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S3 Non-Wetland	0-2"	Duff	10YR 2/2	slightly moist	<i>Pseudotsuga menziesii</i>	85	FacU	Tree
	2"-8"	Silt Loam	10 YR 3/3 w/redox	dry	<i>Rubus armeniacus</i>	20	FacU	Shrub
					<i>Rubus spectabilis</i>	15	Fac+	Shrub
	8"-18"	Silt Loam	10YR 3/4	<i>Acer circinatum</i>	10	Fac-	Tree	
				<i>Corylus cornuta</i>	5	FacU	Shrub	
				<i>Polystichum munitum</i>	25	FacU	Herb	
			<i>Rubus ursinus</i>	15	FacU	Shrub		

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S4 Wetland	0-18"	Loam	10YR 2/1 w/ charcoal	sat	<i>Alnus rubra</i>	15	Fac	Tree
					<i>Rubus spectabilis</i>	25	Fac+	Shrub
					<i>Rubus armeniacus</i>	15	FacU	Shrub
					<i>Salix lucida</i>	10	FacW+	Shrub
					<i>Salix sitchensis</i>	10	FacW	Shrub
					<i>Athyrium filix-femina</i>	15	Fac	Herb
					<i>Ranunculus repens</i>	10	FacW	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S5 Wetland	0-6"	Silt Loam	10YR 2/1	sat	<i>Alnus rubra</i>	5	Fac	Tree
	6"-18"	Silt Loam	10YR 3/2 w/redox	sat	<i>Rubus spectabilis</i>	25	Fac+	Shrub
					<i>Rubus armeniacus</i>	15	FacU	Shrub
					<i>Ranunculus repens</i>	20	FacW	Herb
					<i>Athyrium filix-femina</i>	15	Fac	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

Table 2b: Field Data

The Villages (Parcel C)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008, June 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
C1 Non-Wetland	0-12"	Gravelly Sandy Loam	10YR 3/6	dry	<i>Pseudotsuga menziesii</i>	15	FacU	Tree
					<i>Rhamnus purshiana</i>	10	Fac-	Tree
					<i>Cystus scoparius</i>	45	NOL	Shrub
					<i>Gaultheria shallon</i>	20	FacU	Shrub
					<i>Mahonia nervosa</i>	20	FacU	Shrub
					<i>Symphoricarpos albus</i>	10	FacU-	Shrub
					<i>Holodiscus discolor</i>	5	N.I	Shrub
					<i>Lonicera ciliosa</i>	tr	NOL	Shrub
					<i>Holcus lanatus</i>	20	Fac	Herb
					<i>Agrostis s.p</i>	25	Fac-FavW	Herb
					<i>Pteridium aquilinum</i>	10	FacU	Herb
				<i>Trifolium repens</i>	tr	FacU	Herb	

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

C2 Non-Wetland	0-2"	Duff		dry	<i>Pseudotsuga menziesii</i>	55	FacU	Tree
	2"-18"	Gravelly Silty Loam	10YR 3/3	moist	<i>Rhamnus purshiana</i>	20	Fac-	Tree
					<i>Gaultheria shallon</i>	30	FacU	Shrub
					<i>Holodiscus discolor</i>	20	N.I	Shrub
					<i>Rubus ursinus</i>	10	FacU	Shrub
					<i>Mahonia nervosa</i>	10	FacU	Shrub
					<i>Oemleria cerasiformis</i>	tr	FacU	Shrub
					<i>Polystichum munitum</i>	30	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

C3 Non-Wetland	0-2"	Duff		dry	<i>Pseudotsuga menziesii</i>	55	FacU	Tree
	2"-18"	Gravelly Silty Loam	10YR 3/3	moist	<i>Acer macrophyllum</i>	20	FacU	Tree
					<i>Gaultheria shallon</i>	30	FacU	Shrub
					<i>Holodiscus discolor</i>	15	N.I	Shrub
					<i>Oemleria cerasiformis</i>	10	FacU	Shrub
					<i>Rubus spectabilis</i>	10	Fac+	Shrub
					<i>Mahonia nervosa</i>	10	FacU	Shrub
<i>Polystichum munitum</i>	35	FacU	Herb					

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

Table 2c: Field Data

The Villages (Parcel D)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008, June 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
S6 Non-Wetland	0-4"	Gravelly Silty Loam	10YR 2/2	moist	<i>Pseudotsuga menziesii</i>	65	FacU	Tree
	4"-18"	Gravelly Silty Loam	10YR 3/3	moist	<i>Mahonia nervosa</i>	15	FacU	Shrub
					<i>Rubus spectabilis</i>	10	Fac+	Shrub
					<i>Rubus ursinus</i>	10	FacU	Shrub
					<i>Polystichum munitum</i>	45	FacU	Herb
					<i>Geranium robertianum</i>	40	Nol/Upl	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S7 Non-Wetland	0-6"	Silt Loam	10YR 4/3	moist	<i>Pseudotsuga menziesii</i>	55	FacU	Tree
	6"-18"	Gravelly Silty Loam	10YR 3/3	moist	<i>Acer circinatum</i>	25	Fac-	Shrub
					<i>Rubus ursinus</i>	10	FacU	Shrub
					<i>Polystichum munitum</i>	45	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S8 Non-Wetland	0-18"	Gravelly Sandy Loam	10YR 2/2	moist no redox	<i>Populus balsamifera</i>	35	Fac	Tree
					<i>Alnus rubra</i>	30	Fac	Tree
					<i>Pseudotsuga menziesii</i>	20	FacU	Tree
					<i>Rubus spectabilis</i>	20	Fac+	Shrub
					<i>Polystichum munitum</i>	35	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S9 Non-Wetland	0-6"	Gravelly Silty Loam	10YR 2/2	moist	<i>Alnus rubra</i>	35	Fac	Tree
	6"-18"	Gravelly Sandy Loam	10YR 4/3	moist	<i>Acer macrophyllum</i>	30	FacU	Tree
					<i>Acer circinatum</i>	50	Fac-	Tree
					<i>Rubus spectabilis</i>	30	Fac+	Shrub
					<i>Polystichum munitum</i>	15	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S10 Wetland typical	0-6"	Silt Loam	10YR 2/1	moist	<i>Alnus rubra</i>	20	Fac	Tree
	6"-18"	Gravelly Silty Loam	10YR 3/2	moist w/ redox	<i>Rubus spectabilis</i>	35	Fac+	Shrub

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

Table 2c: Field Data

The Villages (Parcel D)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008, June 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
S11	0-8"	Silt Loam	10YR 2/1	sat	<i>Alnus rubra</i>	15	Fac	Tree
Wetland	8"-18"	Silt Loam	10YR 3/1	sat	<i>Thuja plicata</i>	10	Fac	Tree
					<i>Rubus spectabilis</i>	15	Fac+	Shrub
					<i>Lonicera involucrata</i>	5	Fac+	Shrub
					<i>Carex sp</i>	25	Fac-Obl	Herb
					<i>Lysichiton americanum</i>	10	Obl	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S12	0-18"	Gravelly Sandy Loam	10YR 3/3	dry	<i>Thuja plicata</i>	55	Fac	Tree
Non-Wetland					<i>Rhamnus purshiana</i>	10	Fac-	Tree
					<i>Prunus emarginata</i>	5	FacU	Tree
					<i>Gaultheria shallon</i>	35	FacU	Shrub
					<i>Acer circinatum</i>	25	Fac-	Shrub
					<i>Rubus spectabilis</i>	15	Fac+	Shrub
					<i>Polystichum munitum</i>	45	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S13	0-10"	Gravelly Silty Loam	10YR 3/1	moist	<i>Thuja plicata</i>	5	Fac	Tree
Non-Wetland	10"-18"	Gravelly Sandy Loam	10YR 3/3	moist	<i>Alnus rubra</i>	5	Fac	Tree
					<i>Acer circinatum</i>	55	Fac-	Shrub
					<i>Rubus spectabilis</i>	15	Fac+	Shrub
					<i>Polystichum munitum</i>	15	FacU	Herb
					<i>Athyrium filix-femina</i>	10	Fac	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S14	0-18"	Silt Loam	10YR 3/1	sat	<i>Alnus rubra</i>	15	Fac	Tree
Wetland					<i>Populus balsamifera</i>	5	Fac	Tree
					<i>Spiraea douglasii</i>	45	FacW	Shrub
					<i>Rubus armeniacus</i>	tr	FacU	Shrub
					<i>Tolmiea menziesii</i>	15	Fac	Herb
					<i>Carex obnupta</i>	10	Obl	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

Table 2c: Field Data

The Villages (Parcel D)

Investigation Dates: January - April and June of 2006, March, October and November of 2007
and April of 2008, June 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
S15	0-8"	Silt Loam	10YR 3/1	moist	<i>Thuja plicata</i>	10	Fac	Tree
Wetland	8"-18"	Silt Loam	2.5Y 4/2 w/ redox	moist	<i>Tsuga heterophylla</i>	5	FacU-	Tree
					<i>Alnus rubra</i>	5	Fac	Tree
					<i>Rubus spectabilis</i>	20	Fac+	Shrub
					<i>Salix lucida</i>	10	FacW+	Shrub
					<i>Spiraea douglasii</i>	10	FacW	Shrub
					<i>Acer circinatum</i>	5	Fac-	Shrub
					<i>Carex obnupta</i>	10	Obl	Herb
					<i>Athyrium filix-femina</i>	5	Fac	Herb
					<i>Polystichum munitum</i>	5	FacU	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

D1	0-2"	Duff		dry	<i>Pseudotsuga menziesii</i>	40	FacU	Tree
Non-Wetland	2"-18"	Gravelly Sandy Loam	10YR 4/3	dry	<i>Tsuga heterophylla</i>	40	FacU-	Tree
					<i>Rubus ursinus</i>	10	FacU	Shrub
					<i>Ilex aquifolium</i>	tr	FacU	Shrub
					<i>Polystichum munitum</i>	50	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

D2	0-2"	Duff		dry	<i>Pseudotsuga menziesii</i>	40	FacU	Tree
Non-Wetland	2"-18"	Gravelly Sandy Loam	10YR 3/3	dry	<i>Acer macrophyllum</i>	tr	FacU	Tree
					<i>Gaultheria shallon</i>	40	FacU	Shrub
					<i>Mahonia nervosa</i>	10	FacU	Shrub
					<i>Rosa gymnocarpa</i>	10	FacU	Shrub
					<i>Acer circinatum</i>	10	Fac-	Shrub
					<i>Rubus ursinus</i>	10	FacU	Shrub
					<i>Cytisus scoparius</i>	5	Nol/Upl	Shrub
					<i>Pteridium aquilinum</i>	5	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

D3	0-16"	Organic Silt Loam	10YR 2/1	sat	<i>Alnus rubra</i>	45	Fac	Tree
Wetland	16"-18"	Silt Loam	10YR 3/2	sat	<i>Populus balsamifera</i>	30	Fac	Tree
					<i>Picea sitchensis</i>	tr	Fac	Tree
					<i>Acer circinatum</i>	45	Fac-	Shrub
					<i>Rubus spectabilis</i>	10	Fac+	Shrub
					<i>Rhamnus purshiana</i>	5	Fac-	Shrub
					<i>Maianthemum dilatatum</i>	15	Fac	Herb
					<i>Stachys cooleyae</i>	10	FacW	Herb
					<i>Dicentra formosa</i>	10	FacU+	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

Table 2d Field Data

The Villages (Parcel E)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008, June 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
E1 Wetland	0-16"	Organic Silt Loam	10YR 2/1	sat	<i>Alnus rubra</i>	45	Fac	Tree
	16"-18"	Silt Loam	10YR 3/2	sat	<i>Populus balsamifera</i>	30	Fac	Tree
					<i>Picea sitchensis</i>	tr	Fac	Tree
					<i>Acer circinatum</i>	45	Fac-	Shrub
					<i>Rubus spectabilis</i>	10	Fac+	Shrub
					<i>Rhamnus purshiana</i>	5	Fac-	Shrub
					<i>Maianthemum dilatatum</i>	15	Fac	Herb
					<i>Stachys cooleyae</i>	10	FacW	Herb
					<i>Dicentra formosa</i>	10	FacU+	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

E2 Wetland	0-18"	Organic Silt	10YR 2/1	sat	<i>Alnus rubra</i>	45	Fac	Tree
					<i>Populus balsamifera</i>	20	Fac	Tree
					<i>Rhamnus purshiana</i>	tr	Fac-	Tree
					<i>Acer circinatum</i>	30	Fac-	Shrub
					<i>Rubus spectabilis</i>	25	Fac+	Shrub
					<i>Maianthemum dilatatum</i>	20	Fac	Herb
					<i>Stachys cooleyae</i>	15	FacW	Herb
					<i>Veronica americana</i>	10	Obl	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

E3 Wetland	0->18"	Muck	10YR 2/1	sat standing water	<i>Tsuga heterophylla</i>	tr	FacU-	Tree
					<i>Salix lucida</i>	40	FacW+	Shrub
					<i>Cornus sericea</i>	20	FacW	Shrub
					<i>Spiraea douglasii</i>	20	FacW	Shrub
					<i>Rubus spectabilis</i>	10	Fac+	Shrub
					<i>Lysichiton americanum</i>	20	Obl	Herb
					<i>Athyrium filix-femina</i>	15	Fac	Herb
					<i>Glyceria elata</i>	10	FacW	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

Table 2d Field Data

The Villages (Parcel E)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008, June 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
E4 Non-Wetland	0-2"	Duff		dry	<i>Tsuga heterophylla</i>	40	FacU-	Tree
	2"-18"	Gravelly Sandy Loam	10YR 4/4	dry	<i>Pseudotsuga menziesii</i>	40	FacU	Tree
					<i>Acer circinatum</i>	25	Fac-	Shrub
					<i>Rubus spectabilis</i>	20	Fac+	Shrub
					<i>Rubus ursinus</i>	15	FacU	Shrub
					<i>Sambucus racemosa</i>	tr	FacU	Shrub
					<i>Polystichum munitum</i>	30	FacU	Herb
					<i>Maianthemum dilatatum</i>	15	Fac	Herb
					<i>Dicentra formosa</i>	15	FacU+	Herb
					<i>Claytonia sibirica</i>	5	Fac-	Herb
				<i>Hydrophyllum tenuipes</i>	5	NOL	Herb	

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

E5 Wetland	0-10"	Silt Loam	10YR 2/1	moist	<i>Alnus rubra</i>	15	Fac	Tree
	10"-18"	Silt Loam	10YR 3/1	moist	<i>Rubus spectabilis</i>	30	Fac+	Shrub
					<i>Acer circinatum</i>	15	Fac-	Shrub
					<i>Carex sp.</i>	20	Fac-Obl	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

E6 Non-Wetland	0-2"	Duff		dry	<i>Pseudotsuga menziesii</i>	40	FacU	Tree
	2"-18"	Gravelly Sandy Loam	10YR 4/3	dry	<i>Tsuga heterophylla</i>	40	FacU-	Tree
					<i>Rubus ursinus</i>	10	FacU	Shrub
					<i>Ilex aquifolium</i>	tr	FacU	Shrub
					<i>Polystichum munitum</i>	50	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

E7 Non-Wetland	0-2"	Duff		dry	<i>Pseudotsuga menziesii</i>	40	FacU	Tree
	2"-18"	Gravelly Sandy Loam	10YR 4/3	dry	<i>Tsuga heterophylla</i>	40	FacU-	Tree
					<i>Rubus ursinus</i>	10	FacU	Shrub
					<i>Ilex aquifolium</i>	tr	FacU	Shrub
					<i>Polystichum munitum</i>	50	FacU	Herb
					<i>Maianthemum dilatatum</i>	15	Fac	Herb
				<i>Dicentra formosa</i>	15	FacU+	Herb	

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

Table 2e: Field Data

The Villages (Parcel F)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
S16	0-12"	Silt Loam	10YR 2/1	moist	<i>Alnus rubra</i>	10	Fac	Tree
Wetland	12"-18"	Silt Loam	2.5Y 4/3	moist	<i>Pseudotsuga menziesii</i>	tr	FacU-	Tree
					<i>Rubus spectabilis</i>	80	Fac+	Shrub
					<i>Athyrium filix-femina</i>	tr.	Fac	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S17	0-18"	Gravelly Sandy Loam	10YR 3/4	slightly moist	<i>Pseudotsuga menziesii</i>	80	FacU-	Tree
Non-Wetland		some organic material			<i>Rubus ursinus</i>	30	FacU	Shrub
					<i>Rubus spectabilis</i>	20	Fac+	Shrub
					<i>Acer circinatum</i>	11	Fac-	Shrub
					<i>Sambucus racemosa</i>	tr	FacU	Shrub
					<i>Polystichum munitum</i>	65	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S18	0-18"	Silt Loam	10YR 3/1	sat	<i>Populus balsamifera</i>	25	Fac	Tree
Wetland					<i>Alnus rubra</i>	15	Fac	Tree
					<i>Tsuga heterophylla</i>	10	FacU-	Tree
					<i>Rubus spectabilis</i>	60	Fac+	Shrub
					<i>Spiraea douglasii</i>	45	FacW	Shrub
					<i>Athyrium filix-femina</i>	10	Fac	Herb
					<i>Ranunculus repens</i>	5	FacW	Herb
					<i>Polystichum munitum</i>	5	FacU	Herb
					<i>Lysichiton americanum</i>	5	Obl	Herb
					<i>Tolmiea menziesii</i>	5	Fac	Herb
					<i>Equisetum arvense</i>	5	Fac	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S19	0-18"	Silt Loam	10YR 2/1	sat	<i>Alnus rubra</i>	25	Fac	Tree
Wetland		organic			<i>Rubus spectabilis</i>	45	Fac+	Shrub
					<i>Spiraea douglasii</i>	15	FacW	Shrub
					<i>Athyrium filix-femina</i>	10	Fac	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

Table 2e: Field Data

The Villages (Parcel F)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
S20 Wetland	0-8"	Silt Loam	10YR 3/1 w/ redox	sat	<i>Alnus rubra</i>	25	Fac	Tree
					<i>Tsuga heterophylla</i>	10	FacU-	Tree
	8"-18"	Silt Loam	10YR 4/2 w/ redox	sat	<i>Rubus spectabilis</i>	30	Fac+	Shrub
					<i>Acer circinatum</i>	10	Fac-	Shrub
					<i>Salix lucida</i>	10	FacW+	Shrub
					<i>Lonicera involucrata</i>	10	Fac+	Shrub
					<i>Rubus ursinus</i>	5	FacU	Shrub
					<i>Polystichum munitum</i>	10	FacU	Herb
					<i>Carex obnupta</i>	5	Obl	Herb
<i>Lysichiton americanum</i>	5	Obl	Herb					

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S21 Non-Wetland	0-6"	Gravelly Sandy Loam	10YR 4/4	moist	<i>Tsuga heterophylla</i>	40	FacU-	Tree
	10"-18"	Gravelly Sandy Loam	10YR 5/4	moist	<i>Rubus spectabilis</i>	20	Fac+	Shrub
					<i>Acer circinatum</i>	10	Fac-	Shrub
					<i>Sambucus racemosa</i>	10	FacU	Shrub
					<i>Rubus ursinus</i>	5	FacU	Shrub
					<i>Polystichum munitum</i>	50	FacU	Herb
					<i>Blechnum spicant</i>	5	Fac+	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S22 Non-Wetland	0-18"	Gravelly Sandy Loam	10YR 3/4	moist	<i>Tsuga heterophylla</i>	40	FacU-	Tree
					<i>Acer circinatum</i>	10	Fac-	Shrub
					<i>Rubus spectabilis</i>	10	Fac+	Shrub
					<i>Oemeleria cerasifomis</i>	10	FacU	Shrub
					<i>Rubus ursinus</i>	5	FacU	Shrub
					<i>Tolmiea menziesii</i>	40	Fac	Herb
					<i>Polystichum munitum</i>	30	FacU	Herb
					<i>Urtica dioica</i>	15	Fac+	Herb
					<i>Athyrium filix-femina</i>	10	Fac	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S23 Wetland	0-6"	Silt Loam	10YR 3/1	sat	<i>Alnus rubra</i>	30	Fac	Tree
	6"-18"	Silt Loam	10YR 4/2 w/ redox	sat	<i>Tsuga heterophylla</i>	20	FacU-	Tree
					<i>Rubus spectabilis</i>	10	Fac+	Shrub
					<i>Acer circinatum</i>	10	Fac-	Shrub
					<i>Rubus armeniacus</i>	10	FacU	Shrub
					<i>Ranunculus repens</i>	5	FacW	Herb
					<i>Lysichiton americanum</i>	5	Obl	Herb
					<i>Athyrium filix-femina</i>	5	Fac	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

Table 2e: Field Data

The Villages (Parcel F)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
S24 Non-Wetland	0-18"	Gravelly Sandy Loam	10YR 3/4	moist	<i>Tsuga heterophylla</i>	40	FacU-	Tree
					<i>Rubus spectabilis</i>	15	Fac+	Shrub
					<i>Vaccinium parvifolium</i>	10	FacU	Shrub
					<i>Sambucus racemosa</i>	10	FacU	Shrub
					<i>Rubus ursinus</i>	5	FacU	Herb
					<i>Polystichum munitum</i>	50	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S25 Non-Wetland	0-6"	Gravelly Sandy Loam	2.5Y 3/1	moist	<i>Tsuga heterophylla</i>	30	FacU-	Tree
	6"-18"	Gravelly Sandy Loam	2.5Y 6/3	sat	<i>Populus balsamifera</i>	10	Fac	Tree
					<i>Alnus rubra</i>	10	Fac	Tree
					<i>Rubus spectabilis</i>	45	Fac+	Shrub
					<i>Acer circinatum</i>	30	Fac-	Shrub
					<i>Rubus ursinus</i>	20	FacU	Shrub
					<i>Sambucus racemosa</i>	10	FacU	Shrub
					<i>Polystichum munitum</i>	50	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

F1 Non-Wetland	0-2"	Duff		dry	<i>Pseudotsuga menziesii</i>	40	FacU	Tree
	2"-18"	Gravelly Sandy Loam	10YR 4/3	dry	<i>Tsuga heterophylla</i>	40	FacU-	Tree
					<i>Rubus ursinus</i>	10	FacU	Shrub
					<i>Ilex aquifolium</i>	tr	FacU	Shrub
					<i>Polystichum munitum</i>	50	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

F2 Non-Wetland	0-2"	Duff		dry	<i>Pseudotsuga menziesii</i>	40	FacU	Tree
	2"-18"	Gravelly Sandy Loam	10YR 4/3	dry	<i>Tsuga heterophylla</i>	40	FacU-	Tree
					<i>Rubus ursinus</i>	25	FacU	Shrub
					<i>Polystichum munitum</i>	50	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

Table 2f: Field Data

The Villages (Parcel BDA)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008, June 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
S26 Non-Wetland	0-18"	Gravelly Sandy Loam	10YR 2/2	moist	<i>Alnus rubra</i>	40	Fac	Tree
			No redox		<i>Rubus ursinus</i>	30	FacU	Shrub
					<i>Polystichum munitum</i>	20	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S27 Non-Wetland	0-10"	Gravelly Sandy Loam	10YR 3/1	slightly moist	<i>Alnus rubra</i>	tr	Fac	Tree
	10"-18"	Gravelly Sandy Loam	2.5Y 6/4	slightly moist	<i>Rhamnus purshiana</i>	10	Fac-	Shrub
					<i>Rubus spectabilis</i>	15	Fac+	Shrub
					<i>Acer circinatum</i>	15	Fac-	Shrub
				<i>Polystichum munitum</i>	60	FacU	Herb	

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S28 Non-Wetland	0-8"	Silt Loam	10YR 3/2	slightly moist	<i>Alnus rubra</i>	30	Fac	Tree
			w/redox		<i>Rubus spectabilis</i>	60	Fac+	Shrub
	8"-18"	Gravelly Sandy Loam	2.5Y 6/4	moist	<i>Rhamnus purshiana</i>	20	Fac-	Shrub
				<i>Polystichum munitum</i>	40	FacU	Herb	

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S29 Wetland	0-10"	Sandy Loam	10YR 3/1	sat	<i>Populus balsamifera</i>	25	Fac	Tree
	>10"				<i>Alnus rubra</i>	20	Fac	Tree
	refusal				<i>Thuja plicata</i>	10	Fac	Tree
					<i>Tsuga heterophylla</i>	5	FacU-	Tree
					<i>Rubus spectabilis</i>	30	Fac+	Shrub
					<i>Acer circinatum</i>	15	Fac-	Shrub
					<i>Rubus armeniacus</i>	10	FacU	Shrub
					<i>Polystichum munitum</i>	20	FacU	Herb
					<i>Athyrium filix-femina</i>	5	Fac	Herb
				<i>Lysichiton americanum</i>	5	Obl	Herb	

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S30 Wetland	0-14"	Loam	10YR 2/1	moist	<i>Tsuga heterophylla</i>	tr	FacU-	Tree
	14"-18"	Loam	10YR 3/2	moist	<i>Acer circinatum</i>	tr	Fac-	Shrub
			w/ redox		<i>Polystichum munitum</i>	tr	FacU	Herb
				veg rooted on margins				

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

Table 2f: Field Data

The Villages (Parcel BDA)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008, June 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
S31 Non-Wetland	0-6"	Gravelly Sandy Loam	10YR 3/2 No redox	moist	<i>Pseudotsuga menziesii</i>	15	FacU-	Tree
					<i>Tsuga heterophylla</i>	5	FacU-	Tree
	10"-18"	Gravelly Sandy Loam	10YR 4/6	moist	<i>Thuja plicata</i>	5	Fac	Tree
					<i>Rubus spectabilis</i>	25	Fac+	Shrub
					<i>Acer circinatum</i>	15	Fac-	Shrub
					<i>Rubus ursinus</i>	10	FacU	Shrub
					<i>Polystichum munitum</i>	30	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S32 Wetland	0-18"	Silt Loam	10YR 3/1	moist	<i>Picea sitchensis</i>	5	Fac	Tree
					<i>Rubus spectabilis</i>	15	Fac+	Shrub
					<i>Carex obnupta</i>	30	Obl	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S33 Non-Wetland	0-10"	Duff			<i>Pseudotsuga menziesii</i>	30	FacU-	Tree
	10"-18"	Gravelly Sandy Loam	10YR 3/3	moist	<i>Tsuga heterophylla</i>	15	FacU-	Tree
					<i>Thuja plicata</i>	15	Fac	Tree
					<i>Gaultheria shallon</i>	15	FacU	Shrub
					<i>Rubus spectabilis</i>	10	Fac+	Shrub
					<i>Acer circinatum</i>	10	Fac-	Shrub
					<i>Vaccinium parvifolium</i>	5	FacU	Shrub
					<i>Sambucus racemosa</i>	5	FacU	Shrub

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S34 Wetland	0-18"	Muck	10YR 2/1	sat	<i>Populus balsamifera</i>	10	Fac	Tree
					<i>Alnus rubra</i>	10	Fac	Tree
					<i>Thuja plicata</i>	5	Fac	Tree
					<i>Tsuga heterophylla</i>	5	FacU-	Tree
					<i>Spiraea douglasii</i>	50	FacW	Shrub
					<i>Rubus spectabilis</i>	10	Fac+	Shrub
					<i>Gaultheria shallon</i>	tr	FacU	Shrub
					<i>Lysichiton americanum</i>	10	Obl	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S35 Wetland	0-12"	Silt Loam	10YR 3/1	sat	<i>Alnus rubra</i>	35	Fac	Tree
	>12" refusal				<i>Populus balsamifera</i>	20	Fac	Tree
					<i>Thuja plicata</i>	5	Fac	Tree
					<i>Spiraea douglasii</i>	30	FacW	Shrub
					<i>Rubus spectabilis</i>	10	Fac+	Shrub
					<i>Carex obnupta</i>	40	Obl	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

Table 2f: Field Data

The Villages (Parcel BDA)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008, June 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
S36	0-12"	Silt Loam	10YR 3/1	moist	<i>Alnus rubra</i>	35	Fac	Tree
Wetland	12"-18"	Sandy Silt Loam	2.5YR 6/4	moist	<i>Veronica sp</i>	45	Obl	Herb
					<i>Lysichiton americanum</i>	20	Obl	Herb
					<i>Athyrium filix-femina</i>	10	Fac	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S37	0-8"	Silt Loam	10YR 3/1	moist	<i>Alnus rubra</i>	35	Fac	Tree
Wetland	8"-10"	Silt Loam	10YR 4/1	moist	<i>Rubus spectabilis</i>	20	Fac+	Shrub
	10"-18"	Sandy Silt Loam	2.5Y 6/4	moist	<i>Rhamnus purshiana</i>	10	Fac-	Shrub
					<i>Oenanthe sarmentosa</i>	15	Obl	Herb
					<i>Veronica sp</i>	15	Obl	Herb
					<i>Athyrium filix-femina</i>	10	Fac	Herb
					<i>Lysichiton americanum</i>	10	Obl	Herb
					<i>Phalaris arundinacea</i>	10	FacW	Herb
					<i>Stachys cooleyae</i>	10	FacW	Herb
					species on hummocks			
					<i>Tsuga heterophylla</i>	20	FacU-	Tree
					<i>Gaultheria shallon</i>	30	FacU	Shrub
					<i>Acer circinatum</i>	10	Fac-	Shrub
					<i>Polystichum munitum</i>	20	FacU	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S38	0-2"	Duff	10YR 2/2	dry	<i>Tsuga heterophylla</i>	80	FacU-	Tree
Non-Wetland	2"-18"	Gravelly Silty Loam	10YR 3/4	slightly moist	<i>Alnus rubra</i>	10	Fac	Tree
					<i>Rubus spectabilis</i>	15	Fac	Herb
					<i>Rhamnus purshiana</i>	5	Fac-	Shrub
					<i>Polystichum munitum</i>	30	FacU	Herb
					<i>Blechnum spicant</i>	tr	Fac+	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S39	0-1"	Duff	10YR3/2	slightly moist	<i>Tsuga heterophylla</i>	30	FacU-	Tree
Non-Wetland	1"-18"	Gravelly Sandy Loam	10YR 4/6	dry	<i>Thuja plicata</i>	15	Fac	Tree
					<i>Acer macrophyllum</i>	tr	FacU	Tree
					<i>Rubus spectabilis</i>	15	Fac	Herb
					<i>Rhamnus purshiana</i>	5	Fac-	Shrub
					<i>Gaultheria shallon</i>	65	FacU	Shrub
					<i>Polystichum munitum</i>	30	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

Table 2f: Field Data

The Villages (Parcel BDA)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008, June 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata	
S40 Wetland	0-18"	Silt Loam	10YR 3/1 w/ redox	moist	<i>Alnus rubra</i>	40	Fac	Tree	
					<i>Rubus spectabilis</i>	30	Fac	Herb	
						<i>Rhamnus purshiana</i>	15	Fac-	Shrub
						<i>Rubus armeniacus</i>	15	FacU	Shrub
						<i>Carex obnupta</i>	65	Obl	Herb
						<i>Veronica americana</i>	20	Obl	Herb
						<i>Urtica dioica</i>	10	Fac+	Herb
						<i>Athyrium filix-femina</i>	5	Fac	Herb
						species on hummocks			
						<i>Rubus ursinus</i>	10	FacU	Shrub
					<i>Polystichum munitum</i>	15	FacU	Herb	

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S41 Non-Wetland	0-5"	Duffy Loam	10YR 2/2 No redox	slightly moist	<i>Acer macrophyllum</i>	20	FacU	Tree
					<i>Rhamnus purshiana</i>	40	Fac-	Shrub
	5"-18"	Silt Loam	10YR 3/4	moist	<i>Rubus ursinus</i>	35	FacU	Shrub
					<i>Acer circinatum</i>	20	Fac-	Shrub
					<i>Polystichum munitum</i>	25	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S42 Wetland	0-12"	Silt Loam	10YR 3/1 w/ redox	moist	<i>Populus balsamifera</i>	20	Fac	Tree
					<i>Alnus rubra</i>	15	Fac	Tree
	12"-18"	Silt Loam	2.5Y 6/4 w/ faint redox	moist	<i>Lonicera involucrata</i>	55	Fac+	Shrub
					<i>Rubus spectabilis</i>	20	Fac	Shrub
					<i>Rhamnus purshiana</i>	10	Fac-	Shrub
					<i>Spiraea douglasii</i>	10	FacW	Shrub
					<i>Rubus armeniacus</i>	15	FacU	Shrub
					<i>Carex obnupta</i>	65	Obl	Herb
					<i>Athyrium filix-femina</i>	5	Fac	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

S43 Non-Wetland	0-10"	Gravelly Sandy Loam	10YR 4/3	moist	<i>Pseudotsuga menziesii</i>	5	FacU	Tree
					<i>Acer macrophyllum</i>	tr	FacU	Tree
	10"-18"	Gravelly Silty Loam	10YR 3/3	moist	<i>Acer circinatum</i>	30	Fac-	Shrub
					<i>Rubus spectabilis</i>	10	Fac	Shrub
					<i>Polystichum munitum</i>	30	FacU	Herb
					<i>Tolmiea menziesii</i>	20	Fac	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S44 Wetland	0-18"	Gravelly Silty Loam	10YR3/2 w/ redox	sat	<i>Alnus rubra</i>	5	Fac	Tree
					<i>Rubus spectabilis</i>	30	Fac	Shrub
					<i>Acer circinatum</i>	15	Fac-	Shrub
					<i>Tolmiea menziesii</i>	10	Fac	Herb

Conclusion: Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are met.

Table 2f: Field Data

The Villages (Parcel BDA)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008, June 2008

Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
S45 Non-Wetland	0-2"	Duff	10YR 2/2	dry	<i>Thuja plicata</i>	35	Fac	Tree
	2"-18"	Gravelly Sandy Loam	10YR 4/3	dry	<i>Tsuga heterophylla</i>	35	FacU-	Tree
					<i>Pseudotsuga menziesii</i>	15	FacU	Tree
					<i>Gaultheria shallon</i>	65	FacU	Shrub
					<i>Acer circinatum</i>	20	Fac-	Shrub
					<i>Polystichum munitum</i>	5	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S46 Non-Wetland	0-2"	Duff	10YR 2/2	dry	<i>Acer macrophyllum</i>	65	FacU	Tree
	2"-18"	Gravelly Sandy Loam	10YR 3/3	dry	<i>Symphoricarpos albus</i>	20	FacU-	Shrub
					<i>Mahonia nervosa</i>	20	FacU	Shrub
					<i>Acer circinatum</i>	10	Fac-	Shrub
					<i>Sambucus racemosa</i>	5	FacU	Shrub
					<i>Polystichum munitum</i>	75	FacU	Herb
					<i>Pteridium aquilinum</i>	15	FacU	Herb
				<i>Dicentra formosa</i>	5	FacU+	Herb	

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S47 Non-Wetland	0-2"	Duff	10YR 2/2	slightly moist	<i>Tsuga heterophylla</i>	30	FacU-	Tree
	2"-18"	Gravelly Sandy Loam	10YR 3/3	dry	<i>Thuja plicata</i>	20	Fac	Tree
					<i>Acer macrophyllum</i>	15	FacU	Tree
					<i>Alnus rubra</i>	5	Fac	Tree
					<i>Acer circinatum</i>	20	Fac-	Shrub
					<i>Gaultheria shallon</i>	20	FacU	Shrub
					<i>Rubus spectabilis</i>	15	Fac	Shrub
					<i>Rubus ursinus</i>	tr	FacU	Shrub
					<i>Corylus cornuta</i>	tr	FacU	Shrub
					<i>Polystichum munitum</i>	15	FacU	Herb
				<i>Pteridium aquilinum</i>	10	FacU	Herb	

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S48 Non-Wetland	0-2"	Duff	10YR 2/2	slightly moist	<i>Acer macrophyllum</i>	30	FacU	Tree
	2"-10"	Silt Loam	10YR 3/3	dry	<i>Alnus rubra</i>	30	Fac	Tree
	10"-18"	Silt Loam	10YR 4/3	dry	<i>Tsuga heterophylla</i>	20	FacU-	Tree
					<i>Rubus spectabilis</i>	15	Fac	Shrub
					<i>Rubus armenicus</i>	20	FacU-	Shrub
					<i>Acer circinatum</i>	20	Fac-	Shrub
					<i>Sambucus racemosa</i>	tr	FacU	Shrub
					<i>Polystichum munitum</i>	20	FacU	Herb
					<i>Dicentra formosa</i>	20	FacU+	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

Table 2f: Field Data

The Villages (Parcel BDA)

Investigation Dates: January - April and June of 2006, March, October and November of 2007 and April of 2008, June 2008

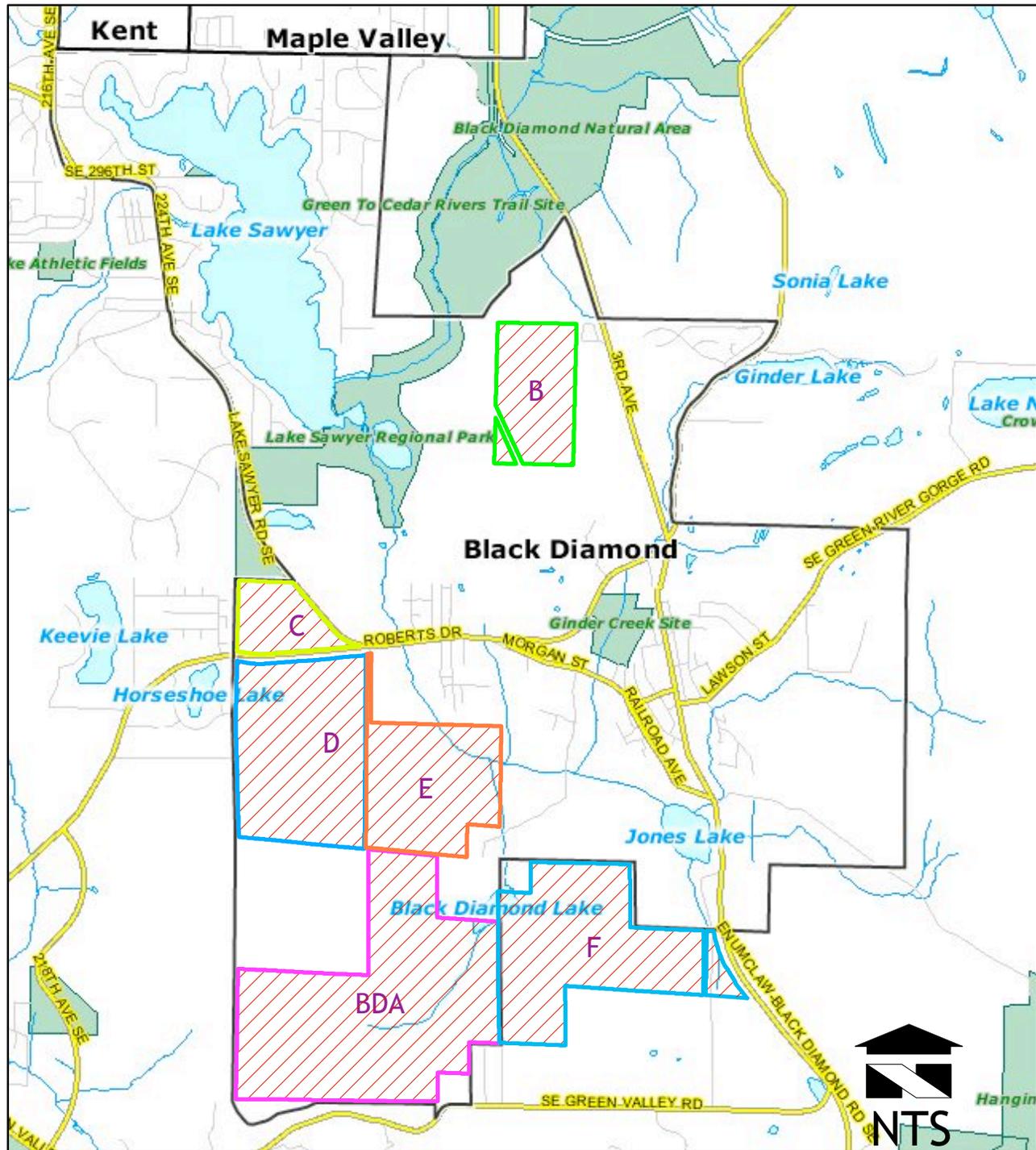
Pit	Depth	Texture	Color	Moisture	Species	%	Status	Strata
S49	0-2"	Duff	10YR 2/2	slightly moist	<i>Thuja plicata</i>	40	Fac	Tree
Non-Wetland	2"-18"	Gravelly Sandy Loam	10YR 4/3	dry	<i>Acer macrophyllum</i>	30	FacU	Tree
					<i>Alnus rubra</i>	tr	Fac	Tree
					<i>Tsuga heterophylla</i>	tr	FacU-	Tree
					<i>Acer circinatum</i>	20	Fac-	Shrub
					<i>Gaultheria shallon</i>	20	FacU	Shrub
					<i>Rubus spectabilis</i>	10	Fac	Shrub
					<i>Holodiscus discolor</i>	10	N.I	Shrub
					<i>Spiraea douglasii</i>	tr	FacW	Shrub
					<i>Polystichum munitum</i>	30	FacU	Herb
					<i>Pteridium aquilinum</i>	20	FacU	Herb
					<i>Trientalis latifolia</i>	10	FacW	Herb
					<i>Trillium ovatum</i>	tr	FacU	Herb

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

S50	0-2"	Duff	10YR 2/2	slightly moist	<i>Tsuga heterophylla</i>	30	FacU-	Tree
Non-Wetland	2"-6"	Gravelly Sandy Loam	10YR 3/3	dry	<i>Thuja plicata</i>	20	Fac	Tree
	6"-18"	Gravelly Sandy Loam	10YR 4/3	dry	<i>Pseudotsuga menziesii</i>	20	FacU	Tree
					<i>Acer circinatum</i>	15	Fac-	Shrub
					<i>Gaultheria shallon</i>	15	FacU	Shrub
					<i>Vaccinium parvifolium</i>	tr	FacU	Shrub

Conclusion: Non-Wetland - Parameters for hydrophytic vegetation, hydric soils, and wetland hydrology are not met.

VICINITY MAP
THE VILLAGES



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VICINITY MAP
THE VILLAGES
CITY OF BLACK DIAMOND, WA

BD Villages Partners, LP
Attn: Colin Lund
825 5th Ave., Ste 202
Kirkland, WA 98033

FIGURE 1
WRI Job # 08035
Drawn by: E. Hirsch
Date: 07.21.09

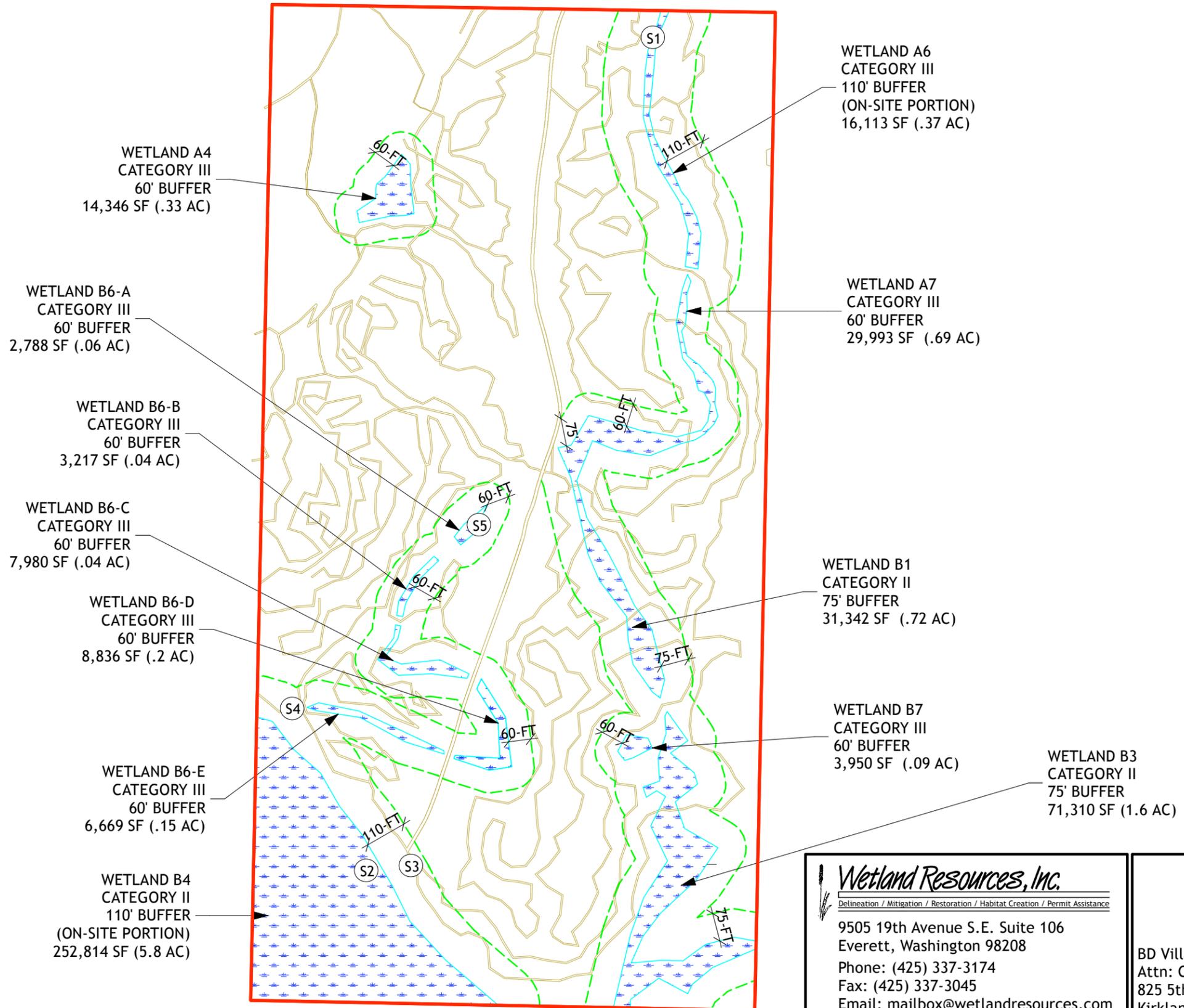


Scale 1" = 300'



PARCEL B
TOTAL AREA
81.53 ACRES

SENSITIVE AREA STUDY MAP
THE VILLAGES
NORTH PROPERTY - PARCEL B
MAP 1 OF 7
PTN OF SEC11, TWP21N, R06E



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SENSITIVE AREA STUDY MAP
THE VILLAGES - PARCEL B
CITY OF BLACK DIAMOND, WA

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825 5th Ave., Ste 202
Kirkland, WA 98033

Sheet 1/7
WRI Job # 08035
Drawn by: E. Hirsch
Date: 07.21.09



Scale 1" = 300'



SENSITIVE AREA STUDY MAP
THE VILLAGES
NORTH PROPERTY - PARCEL B
MAP 2 OF 7
PTN OF SEC15, TWP21N, R06E



LEGEND	
	WETLAND
	WETLAND BUFFER
	EXISTING ROAD/TRAIL
	DATA SITES

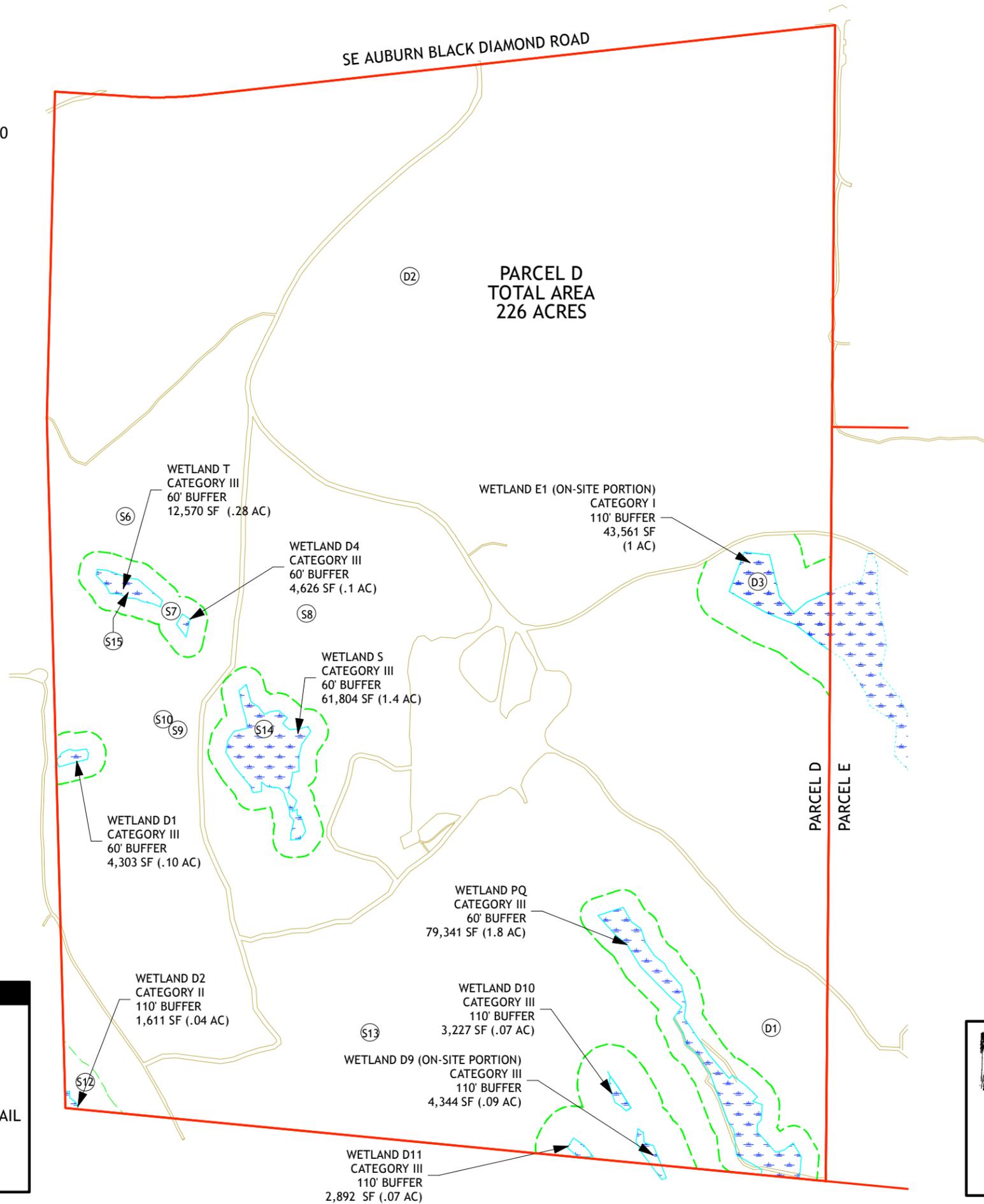
 Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208 Phone: (425) 337-3174 Fax: (425) 337-3045 Email: mailbox@wetlandresources.com	SENSITIVE AREA STUDY MAP <i>THE VILLAGES - PARCEL C</i> CITY OF BLACK DIAMOND, WA
	BD Villages Partners, LP Attn: Colin Lund 825 5th Ave., Ste 202 Kirkland, WA 98033



Scale 1" = 400'



SENSITIVE AREA STUDY MAP
THE VILLAGES
PARCEL D
MAP 3 OF 7
PTN OF SEC15, TWP21N, R06E



LEGEND

- WETLAND
- WETLAND BUFFER
- EXISTING ROAD/TRAIL
- DATA SITES

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SENSITIVE AREA STUDY MAP
THE VILLAGES - PARCEL D
CITY OF BLACK DIAMOND, WA

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Kirkland, WA 98033

Sheet 3/7
WRI Job # 08035
Drawn by: E. Hirsch
Date: 07.21.09

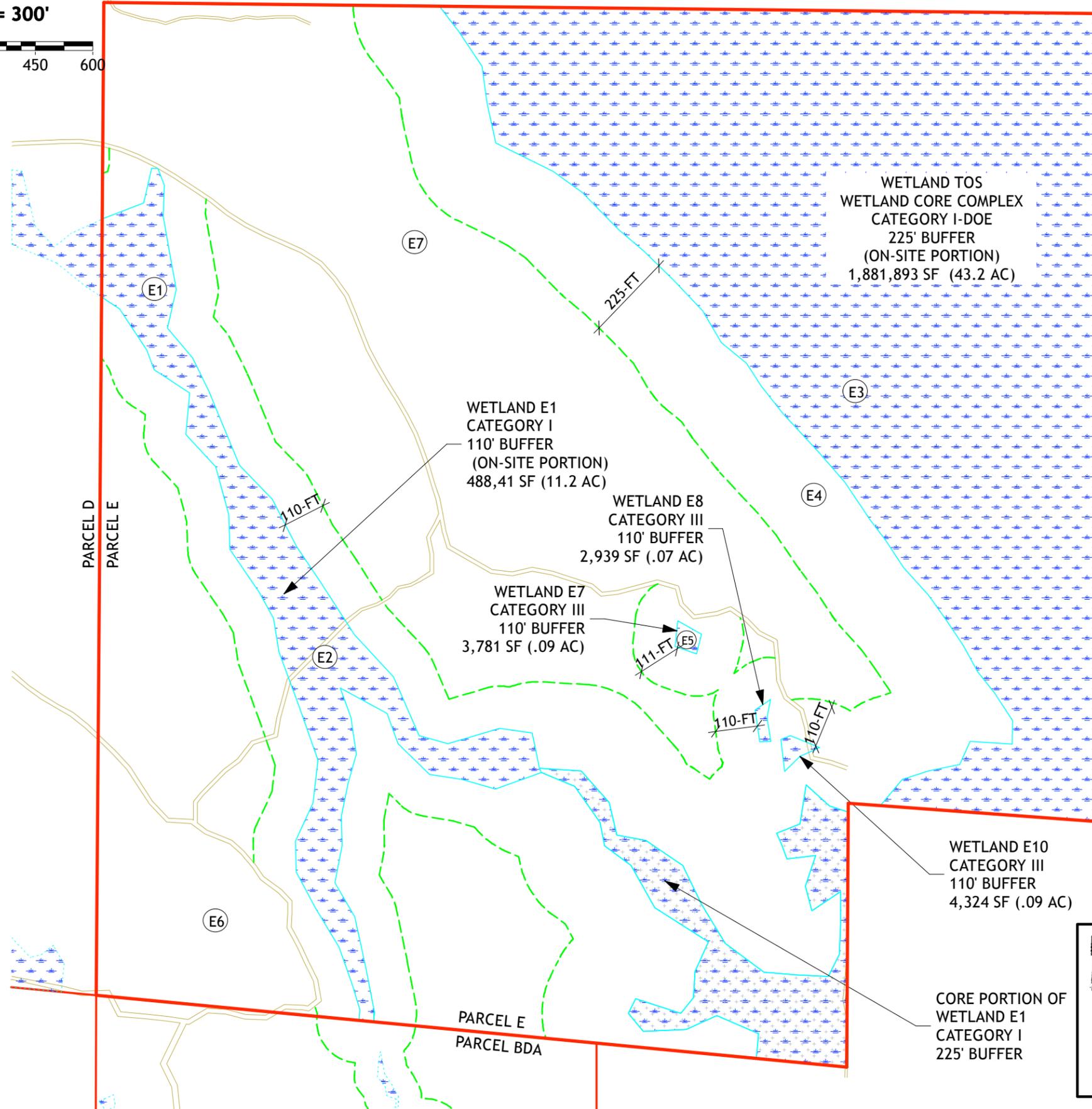


Scale 1" = 300'



SENSITIVE AREA STUDY MAP
THE VILLAGES
PARCEL E
MAP 4 OF 7
PTN OF SEC15, TWP21N, R06E

PARCEL E
TOTAL AREA
151 ACRES



WETLAND TOS
WETLAND CORE COMPLEX
CATEGORY I-DOE
225' BUFFER
(ON-SITE PORTION)
1,881,893 SF (43.2 AC)

WETLAND E1
CATEGORY I
110' BUFFER
(ON-SITE PORTION)
488,41 SF (11.2 AC)

WETLAND E8
CATEGORY III
110' BUFFER
2,939 SF (.07 AC)

WETLAND E7
CATEGORY III
110' BUFFER
3,781 SF (.09 AC)

WETLAND E10
CATEGORY III
110' BUFFER
4,324 SF (.09 AC)

CORE PORTION OF
WETLAND E1
CATEGORY I
225' BUFFER

LEGEND

- WETLAND
- WETLAND BUFFER
- EXISTING ROAD/TRAIL
- DATA SITES

Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance

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Email: mailbox@wetlandresources.com

SENSITIVE AREA STUDY MAP
THE VILLAGES - PARCEL E
CITY OF BLACK DIAMOND, WA

BD Villages Partners, LP
Attn: Colin Lund
825 5th Ave., Ste 202
Kirkland, WA 98033

Sheet 4/7
WRI Job # 08035
Drawn by: E. Hirsch
Date: 07.21.09



Scale 1" = 400'

0 200 400 600 800

WETLAND S5/108
BLACK DIAMOND LAKE
CORE WETLAND COMPLEX
CATEGORY I
225' BUFFER
(ON-SITE PORTION)
241,348 SF (5.5 AC)
2,064,006 SF (47.3 AC)-TOTAL

PARCEL F
TOTAL AREA
258.91 ACRES

SENSITIVE AREA STUDY MAP
THE VILLAGES
PARCEL F
MAP 5 OF 7
PTN OF SEC23, TWP21N, R06E

LEGEND

- WETLAND
- WETLAND BUFFER
- EXISTING ROAD/TRAIL
- DATA SITES

WETLAND Q
CATEGORY I
110' BUFFER
(ON-SITE PORTION)
233,681 SF (5.4 AC)
1,701,003 SF (39 AC)-TOTAL

WETLAND K
CATEGORY III
110' BUFFER
3,565 SF (.08 AC)

WETLAND S4 EAST
CATEGORY II
110' BUFFER
308,533 SF (7.1 AC)

WETLAND S18/S19/S20
CATEGORY II
110' BUFFER
81,910 SF (1.88 AC)

WETLAND S3/S4
CATEGORY II
110' BUFFER
316,035 SF (7.3 AC)

WETLAND S6/S7/S8
CATEGORY II
110' BUFFER
425,139 SF (9.7 AC)

WETLAND R
CATEGORY III
110' BUFFER
9,431 SF (.22)

WETLAND W
CATEGORY III
110' BUFFER
2,493 SF (.06)

WETLAND Q
CATEGORY I
110' BUFFER
(ON-SITE PORTION)
44,546 SF (1 AC)
1,701,003 SF (39 AC)-TOTAL

WETLAND S1/S2
CATEGORY II
110' BUFFER
(ON-SITE PORTION)
193,477 SF (4.4 AC)

S21

S20

S16

S17

S25

WETLAND LL
CATEGORY III
60' BUFFER
503 SF (.01 AC)

WETLAND DD
CATEGORY II
75' BUFFER
911 SF (.02 AC)

WETLAND CC
CATEGORY III
60' BUFFER
132 SF (.003 AC)

WETLAND BB
CATEGORY II
75' BUFFER
1,186 SF (.03 AC)

WETLAND KK
CATEGORY II
75' BUFFER
965 SF (.02 AC)

WETLAND GG
CATEGORY II
110' BUFFER
(ON-SITE PORTION)
12,911 SF (.3 AC)
104,410 SF (2.4 AC)-TOTAL

WETLAND S14
CATEGORY III
60' BUFFER
(ON-SITE PORTION)
6,687 SF (.15 AC)
16,818 SF (.38 AC)-TOTAL

F1

WETLAND S9
CATEGORY III
60' BUFFER
10,381 SF (.24 AC)

F2

WETLAND S11
CATEGORY III
60' BUFFER
2,870 SF (.07 AC)

WETLAND S12
CATEGORY III
60' BUFFER
5,672 SF (.13 AC)

WETLAND J
CATEGORY III
110' BUFFER
(ON-SITE PORTION)
11,803 (.27 AC)
156,080 (3.6 AC)-TOTAL

WETLAND U
CATEGORY III
110' BUFFER
35,251 SF (.81 AC)

WETLAND AA
CATEGORY III
110' BUFFER
126 SF (.003 AC)

WETLAND Q
CATEGORY I
110' BUFFER
(ON-SITE PORTION)
7,474 SF (.18 AC)
1,701,003 SF (39 AC)-TOTAL

WETLAND JJ
CATEGORY III
110' BUFFER
5,496 SF (.12 AC)

CITY OF BLACK DIAMOND UGA BOUNDARY

PARCEL F
PARCEL BDA

PARCEL BDA

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SENSITIVE AREA STUDY MAP
THE VILLAGES - PARCEL F
CITY OF BLACK DIAMOND, WA

BD Villages Partners, LP
Attn: Colin Lund
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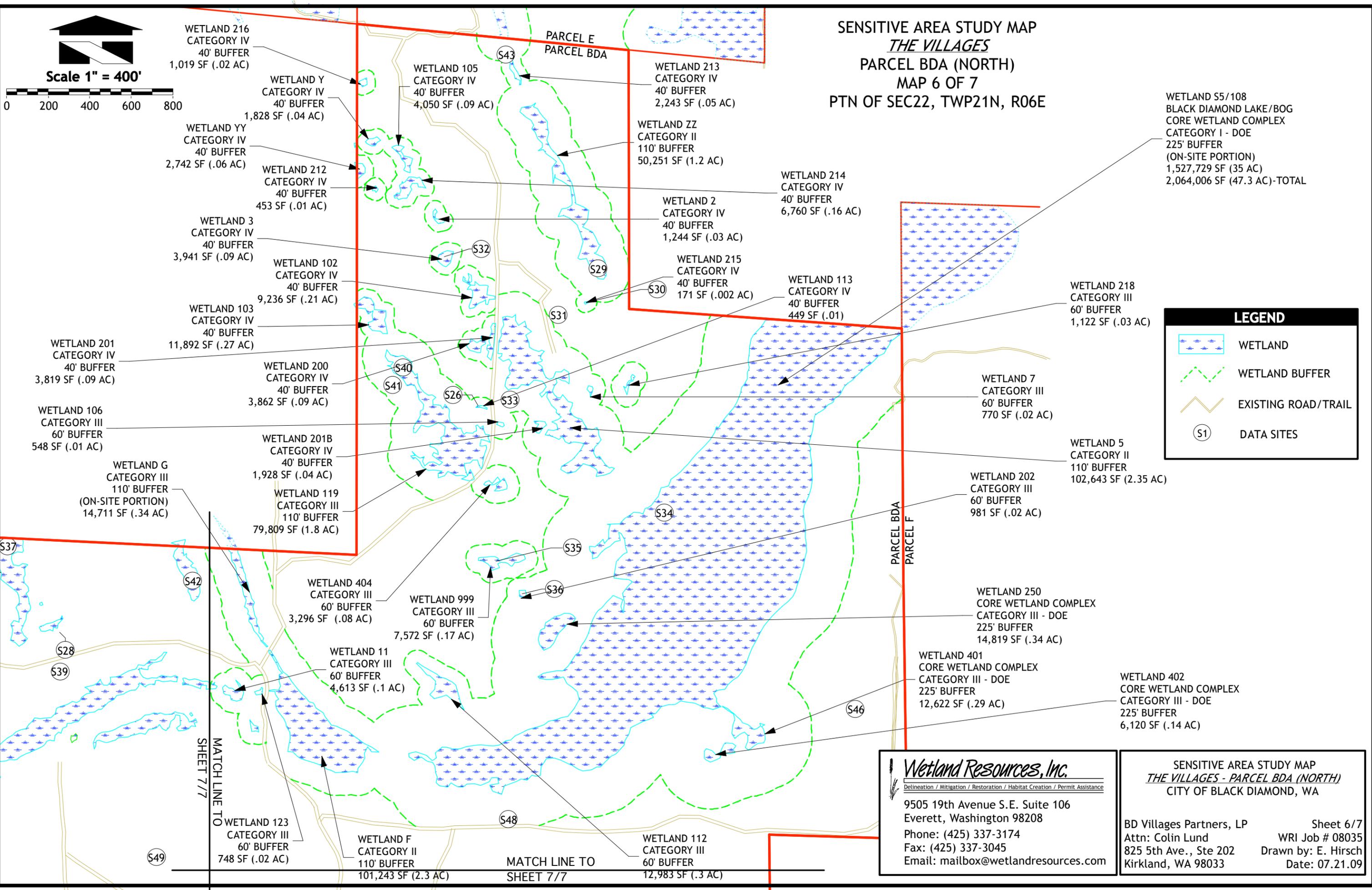
Sheet 5/7
WRI Job # 08035
Drawn by: E. Hirsch
Date: 07.21.09



Scale 1" = 400'



SENSITIVE AREA STUDY MAP THE VILLAGES PARCEL BDA (NORTH) MAP 6 OF 7 PTN OF SEC22, TWP21N, R06E



WETLAND S5/108
BLACK DIAMOND LAKE/BOG
CORE WETLAND COMPLEX
CATEGORY I - DOE
225' BUFFER
(ON-SITE PORTION)
1,527,729 SF (35 AC)
2,064,006 SF (47.3 AC)-TOTAL

LEGEND

- WETLAND
- WETLAND BUFFER
- EXISTING ROAD/TRAIL
- DATA SITES

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SENSITIVE AREA STUDY MAP
 THE VILLAGES - PARCEL BDA (NORTH)
 CITY OF BLACK DIAMOND, WA

BD Villages Partners, LP
 Attn: Colin Lund
 825 5th Ave., Ste 202
 Kirkland, WA 98033

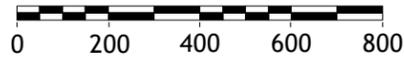
Sheet 6/7
 WRI Job # 08035
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 Date: 07.21.09

MATCH LINE TO
SHEET 7/7

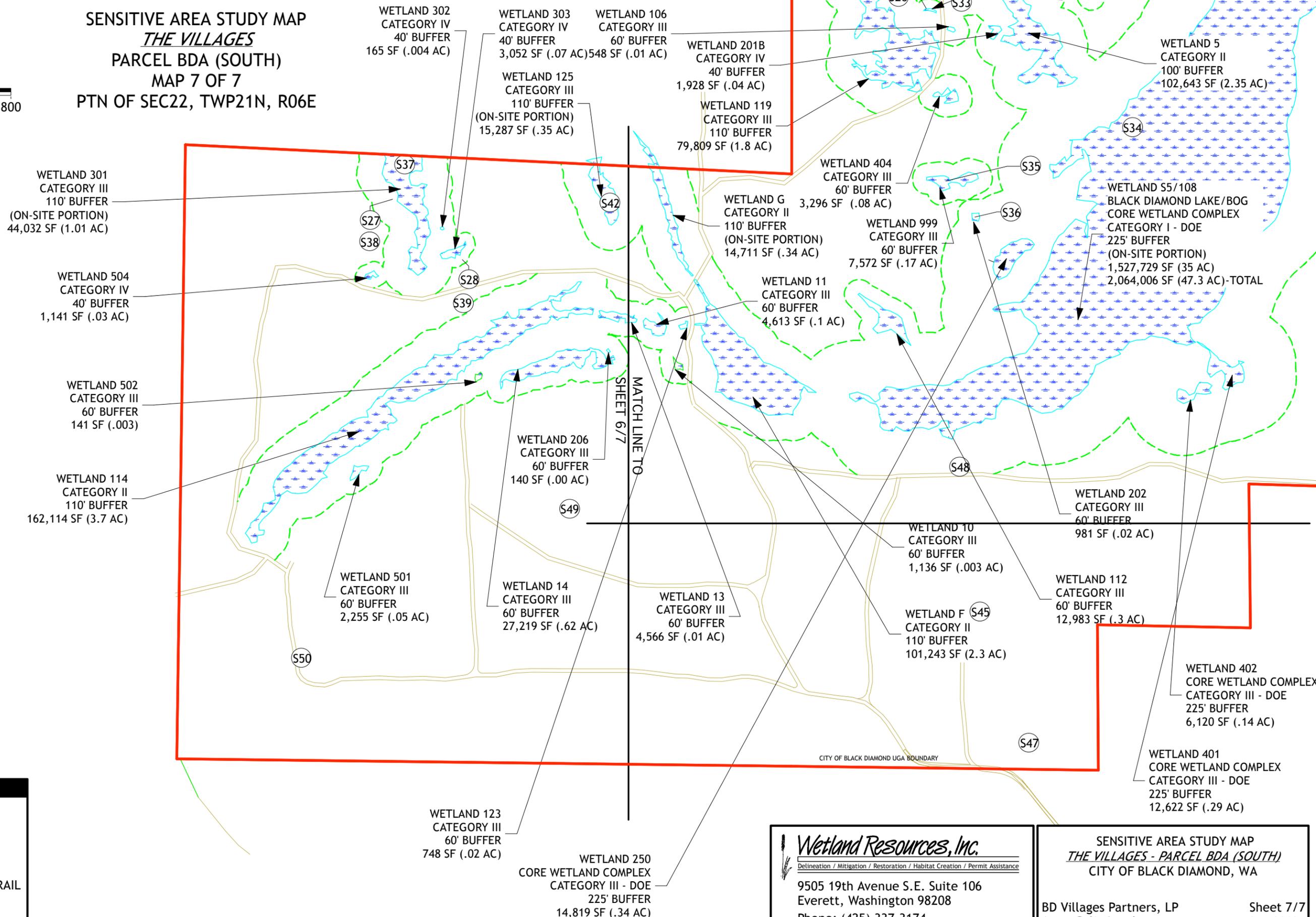
MATCH LINE TO
SHEET 7/7



Scale 1" = 400'



SENSITIVE AREA STUDY MAP
THE VILLAGES
PARCEL BDA (SOUTH)
MAP 7 OF 7
PTN OF SEC22, TWP21N, R06E



WETLAND 301
CATEGORY III
110' BUFFER
(ON-SITE PORTION)
44,032 SF (1.01 AC)

WETLAND 504
CATEGORY IV
40' BUFFER
1,141 SF (.03 AC)

WETLAND 502
CATEGORY III
60' BUFFER
141 SF (.003)

WETLAND 114
CATEGORY II
110' BUFFER
162,114 SF (3.7 AC)

WETLAND 501
CATEGORY III
60' BUFFER
2,255 SF (.05 AC)

WETLAND 14
CATEGORY III
60' BUFFER
27,219 SF (.62 AC)

WETLAND 13
CATEGORY III
60' BUFFER
4,566 SF (.01 AC)

WETLAND 123
CATEGORY III
60' BUFFER
748 SF (.02 AC)

WETLAND 250
CORE WETLAND COMPLEX
CATEGORY III - DOE
225' BUFFER
14,819 SF (.34 AC)

WETLAND 302
CATEGORY IV
40' BUFFER
165 SF (.004 AC)

WETLAND 303
CATEGORY IV
40' BUFFER
3,052 SF (.07 AC)

WETLAND 106
CATEGORY III
60' BUFFER
548 SF (.01 AC)

WETLAND 125
CATEGORY III
110' BUFFER
(ON-SITE PORTION)
15,287 SF (.35 AC)

WETLAND 201B
CATEGORY IV
40' BUFFER
1,928 SF (.04 AC)

WETLAND 119
CATEGORY III
110' BUFFER
79,809 SF (1.8 AC)

WETLAND G
CATEGORY II
110' BUFFER
(ON-SITE PORTION)
14,711 SF (.34 AC)

WETLAND 11
CATEGORY III
60' BUFFER
4,613 SF (.1 AC)

WETLAND 404
CATEGORY III
60' BUFFER
3,296 SF (.08 AC)

WETLAND 999
CATEGORY III
60' BUFFER
7,572 SF (.17 AC)

WETLAND 10
CATEGORY III
60' BUFFER
1,136 SF (.003 AC)

WETLAND F
CATEGORY II
110' BUFFER
101,243 SF (2.3 AC)

WETLAND 202
CATEGORY III
60' BUFFER
981 SF (.02 AC)

WETLAND 112
CATEGORY III
60' BUFFER
12,983 SF (.3 AC)

WETLAND 402
CORE WETLAND COMPLEX
CATEGORY III - DOE
225' BUFFER
6,120 SF (.14 AC)

WETLAND 401
CORE WETLAND COMPLEX
CATEGORY III - DOE
225' BUFFER
12,622 SF (.29 AC)

WETLAND 5
CATEGORY II
100' BUFFER
102,643 SF (2.35 AC)

WETLAND S5/108
BLACK DIAMOND LAKE/BOG
CORE WETLAND COMPLEX
CATEGORY I - DOE
225' BUFFER
(ON-SITE PORTION)
1,527,729 SF (35 AC)
2,064,006 SF (47.3 AC)-TOTAL

LEGEND

- WETLAND
- WETLAND BUFFER
- EXISTING ROAD/TRAIL
- DATA SITES

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