Environmental Science & Assessment, LLC

MEMORANDUM

DATE: September 30, 2013

TO: Valerie Sutton City of Beaverton

CC: Ed Bartholemy

FROM: Jack Dalton

RE: Oregon Goal 5 and Metro Title 13 Natural Resource Determination - Scholls Ferry Road Properties

Environmental Science & Assessment, LLC (ES&A) conducted a wetland and natural resource determination for two sites along Scholls Ferry Road in Washington County (Figure 1). One site is comprised of two taxlots (Tax Map 2S10600, lots 301 and 302) is located at 18485 SW Scholls Ferry Road and the other site is a single tax lot (Tax Map 2S10600, lot 700) located at 17811 SW Scholls Ferry Road (Figure 2). The site investigation was prepared to assist the landowner and the City of Beaverton in determining the presence of all potentially jurisdictional wetland or waterways and any other significant wildlife habitat resources.

Under the state of Oregon's Goal 5 (OAR 660-023-0030) and Metro Title 13 (Metro Code Section 3.07.1310 - 3.07.1370), local jurisdictions are required to inventory and evaluate natural resources defined under Goal 5. Title 13 specifically seeks to conserve, protect and restore "continuously ecologically viable streamside corridor systems" (Metro 2013). Site data collection and mapping provided in this report identifies any Goal 5 resources and evaluates whether any on site resources are significant enough to warrant special protection measures.

METHODOLOGY

ES&A performed two levels of investigation for the site. The first involved a review of existing natural resource mapping for the site. The second involved an onsite wetland determination by ES&A staff including site data collection and boundary mapping.

Figures are provided in Appendix A. Reviewed on-line natural resource mapping is provided in Appendix B. The wetland determination data and assessment summary is provided in Appendix C. Photos are provided in Appendix D.

Wetlands

The wetland determination data collection and mapping was conducted on March 29 and July 24, 2013. The wetland areas on the site were identified using methods consistent U.S. Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*, (US Army Corps of Engineers 2010). This methodology defines criteria for hydrology, soils, and vegetation that determine the jurisdictional status of wetlands for the Pacific Northwest.

Representative wetland determination data plots were collected for the northern property at 18485 SW Scholls Ferry Road and the southern property at 17811 SW Scholls Ferry Road. Two (2) data plots were collected at the northern property and one (1) at the southern property to document the presence or absence of wetland conditions. The wetland boundary and data plot locations were mapped using a GPS hand-held mapping unit with sub-meter accuracy (Figure 3). The wetland determination data provides relavent information on the vegetative cover, soil conditions and hydrology, if present (Appendix C).

Wildlife Habitat Assessment

Potential wildlife habitats on site were evaluated by a pedestrian survey of on-site wetland and upland habitats. All potential habitats on-site were investigated and connections to off-site wildlife habitats were noted. This on-site investigation evaluates the level to which existing habitat provides food and cover habitat components and other components may contribute to habitat value.

RESULTS

Existing Resource Mapping

ES&A reviewed available public mapping and data to assist in the identification and assessment of natural resources on site. Reviewed data included:

- *US Geological Survey (USGS) Topographic Map*: Beaverton, Oregon 7.5-minute quadrangle (USGS1985). The USGS map does not indicate any wetland or open water features on the two sites. A main drainage flows south, east of the northern site and the impounded drainage is shown to the southeast. The topography of the area is primarily a south facing slope with drainage off-site to the south (Figure 1).
- *National Wetland Inventory (NWI) Map*: Beaverton, Oregon 7.5-minute quadrangle (2012). The NWI map for the area does not indicate any wetlands on the site. It does show the impoundment and emergent wetland southeast of the northern site.

- *City of Beaverton Local Wetland Inventory (LWI) Map*: Beaverton, Oregon 7.5-minute quadrangle (2001). The LWI map for the area does not indicate any wetlands on the site.
- *National Resource Conservation Service Washington County Soil Survey.* The soil survey indicates most of the north and south sites are non-hydric soils, with moderately to well drained soils. The Delena silt loam, 3-12% slopes (16C) is poorly drained and rated hydric. It is located south of the northern site and on the south end of the southern site along Scholls Ferry Road. Cascade silt loam, 3-7% slopes (7B) and 7-12% slopes (7C) is somewhat poorly drained and located on both sites uphill of the mapped Delena soils. Portions of the mapped Cascade soils are within the mapped wetland on the north site.
- *Metro Data Resource Center MetroMap (2012).* The metro natural resource mapping indicates drainages east and west of the northern site and maps wetlands within both areas. No significant water quality natural resources are mapped on either site. The small remnant oak forest habitat is mapped on the southern edge of the northern site.
- *WACO SNR Mapping (2013).* Drainages and the impoundment are shown on the SNR mapping for the area.
- *Aerial photography (Google Earth):* Aerial photos from 2012 back through 2000 and in 1994 indicate the northern site has been actively managed as open pasture. The southern site has been in various crop rotations back through at least 1994. The riparian area southeast of the northern site has been forested throughout the recent past and the impounded drainage to the south is evident. Evidence of open ditches are observable in some years in the northeast corner of the northern site, just north of the off-site riparian area. However, most recent aerials available show these areas absent, presumably due to maintaining the existing drain tiles (Figure 3).

EXISTING CONDITIONS

Northern Site

The 36.5-acre northern site is primarily used as a pasture for buffalo ranching. A residential house is located in the southwest corner of the site and another structure used for livestock is located along the northwest boundary. Access to the property is from the southwest corner off of SW Scholls Ferry Road.

The topography throughout the site slopes to the south and southeast with more gradual to steeper slopes moving west to east. The western end of the site is the high point and topography slopes off steeply south of the residence at the southwest corner. The eastern half of the site has a drainage basin that slopes from the northeast through the site to the south. The low point of the site is located along the broad riparian drainage basin on the southeastern boundary.

The entire site is open pasture with a mix of grasses and upland weedy species. The fields on the site are managed for grazing. The sloped area south of the residential house historically was a mixed Oak and Douglas fir forest habitat, but had recently been logged at the time of the site visit. The coniferous tree grove in the middle of the site, just south of center, planted in fir trese had been harvested by the end of the summer of this year.

Two wetlands and one remnant stream swale were identified on site (Figure 3). Both the wetlands and the stream segment border the southeastern side of the site. The two wetland areas on site are contiguous with the undisturbed forested wetlands along the southeastern boundary. The two forested wetland areas on site measure 20,908 square feet (0.48 acres) and 7,405 (0.17 acres) and follow the flatter topography along the edge of the off-site riparian corridor east of the site (Figure 3).

The swale area in the northeastern corner of the site has historically been drain tiled, but some segments of the tiles were damaged by the grazing buffalo early in 2013. The landowner repaired the drain tiles and replaced the culvert at the southeastern edge of the site (Figure 3).

Southern Site

The 9-acre southern site is roughly square in shape with one residential home, a pump house and large-animal shelter located in the central east portion of the site landscaped with mature trees. A dirt driveway from the southeast provides access to the site. The topography of the study area slopes down towards the south from an elevation of 330 feet above sea level to approximately 280 feet. The northern and western portions of the site are planted with hazelnut trees with a low growing herbaceous cover with primarily bare soils and some weeds. The area immediately west and south of the house is currently planted in wheat production (Figure 4).

A data plot was collected just west of the driveway in the low point of the site in the southeast corner (Figure 4). No wetland hydrology or vegetation was present, but remnant soils were observed (Appendix B). The site is effectively de-watered by the presence of drain tiles and the roadside ditch along the north edge of SW Scholls Ferry Road. The ditch is three feet below the field elevation and several drain tile outfalls were observed in the ditch.

Wildlife Habitat Assessment

The only significant wildlife habitat on either site is associated with the riparian corridor and forested wetlands along the southeastern edge of the north site. The fir tree grove in the center of the site was densely planted and lacked any significant native understory cover. Habitat functions were limited to perching and cover for avian species and small mammals, possibly. Food sources were highly limited due to the lack of understory native vegetation in the fir

monoculture. Additionally, the grove was actively being cleared, so the limited cover functions were being impacted further at the time of the site visit.

The only other area of potential significant wildlife habitat was the mixed Douglas fir/Oregon White Oak south of the residence, but most of this area had recently been cleared, limiting the existing habitat functions. The Oak forest habitat was already impacted by the presence of the Douglas fir, so the higher value habitat components associated with Oak savannah or woodland were likely already lacking prior to the clearing.

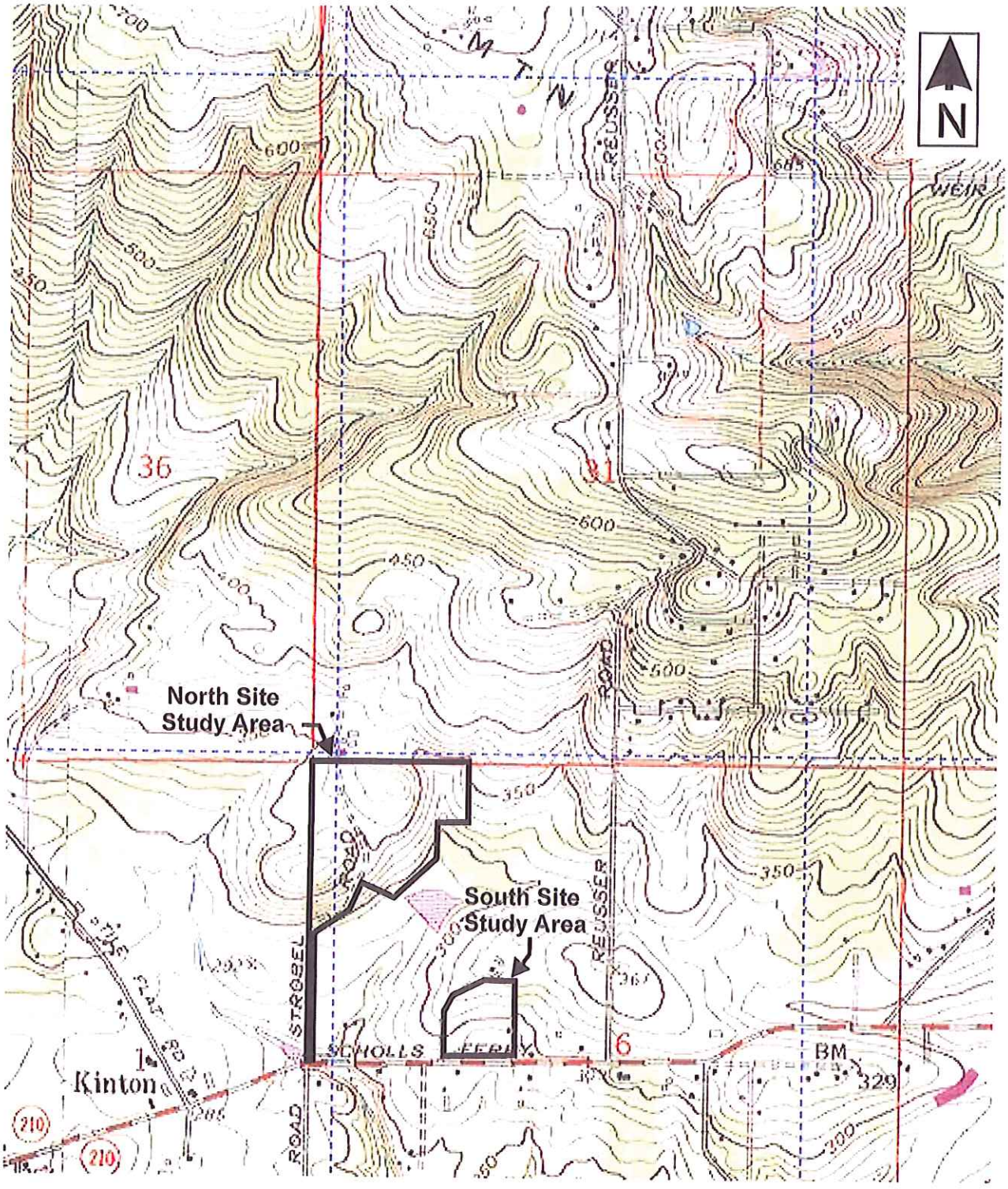
Jurisdictional Status

The forested wetlands, being adjacent to the off-site drainages to the southeast are linked to downstream tributaries to the Tualatin River southwest of the site. Due to this downstream connection, all wetlands are jurisdictional with the State of Oregon and regulated through the Department of State Lands (DSL). These resources are also subject to Section 404 of the Clean Water Act as administered by the US Army Corps of Engineers (USACE).

Additional hydrologic and mapping information would still need to be collected to complete a concurred wetland boundary delineation from state and federal agencies. USACE and DSL make the final jurisdictional determination.

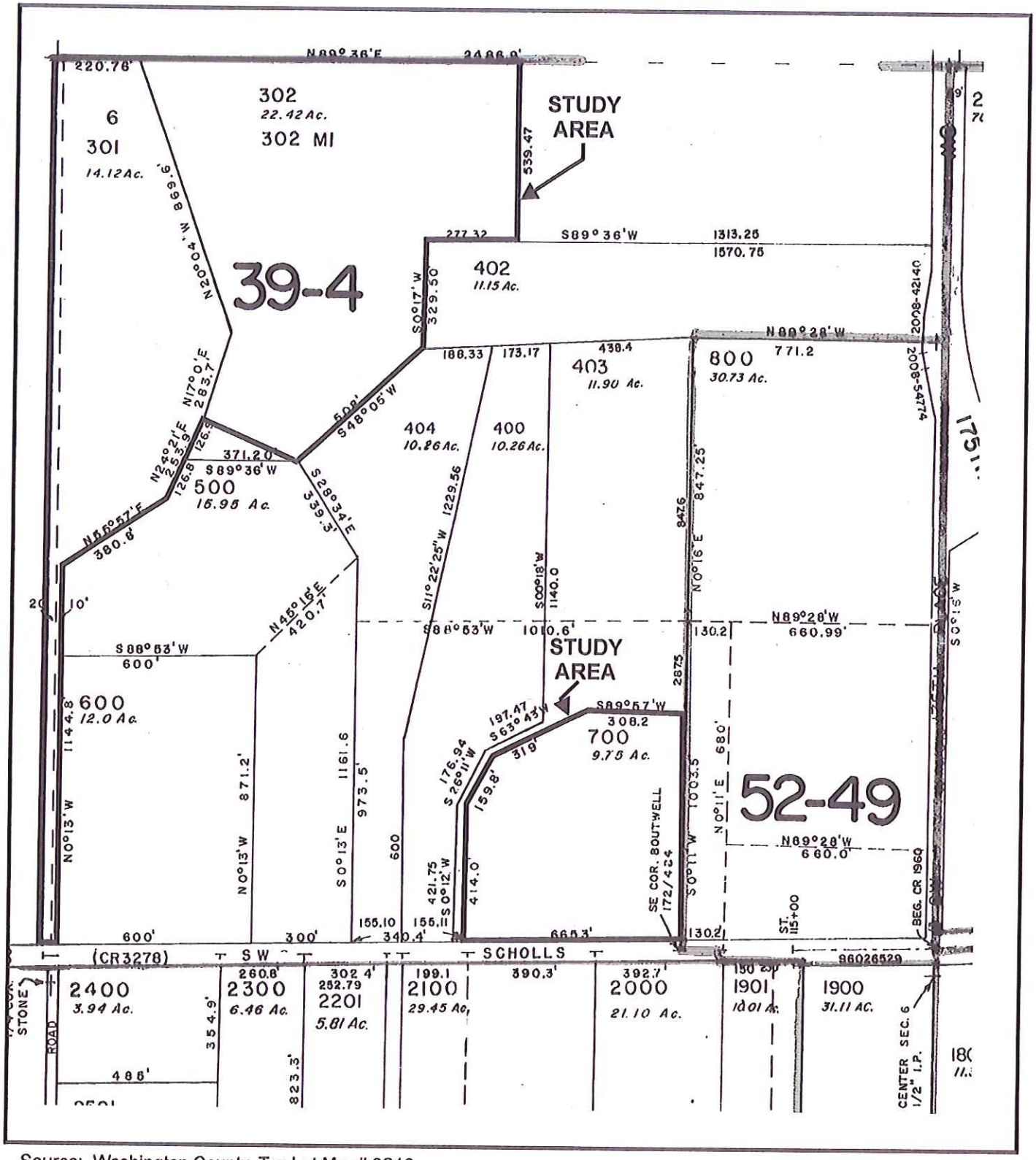
Once the site is brought into the City of Beaverton city limits, all wetland and water resources on site will be subject to Clean Water Services (CWS) under the Design and Construction Standards (R&O 07-20). The site will be added to the CWS storm and sewer service area and will require vegetated corridors (buffers) for any wetland or waterway on site. Both stream and wetland features will require a 50 foot corridor under current CWS rules.

APPENDIX A – FIGURES



Source: USGS 7.5-Minute Beaverton, OR Quadrangle, 1985. Printed from TOPO! 2000 National Geographic Holdings

Environmental Science & Assessment, LLC e s a	Vicinity Map Bartholemy - Scholls Ferry Road Washington County, Oregon	Figure 1 Approx. Scale: 1in. = 1200 ft.



Source: Washington County, Tax Lot Map# 2S16.

Environmental Science & Assessment, LLC esa	Tax Lot Map Bartholemy - Scholls Ferry Road Washington County, Oregon	Figure 2 Scale: 1in. = 100 ft.

Roadside Ditch

Photo Point Orientation

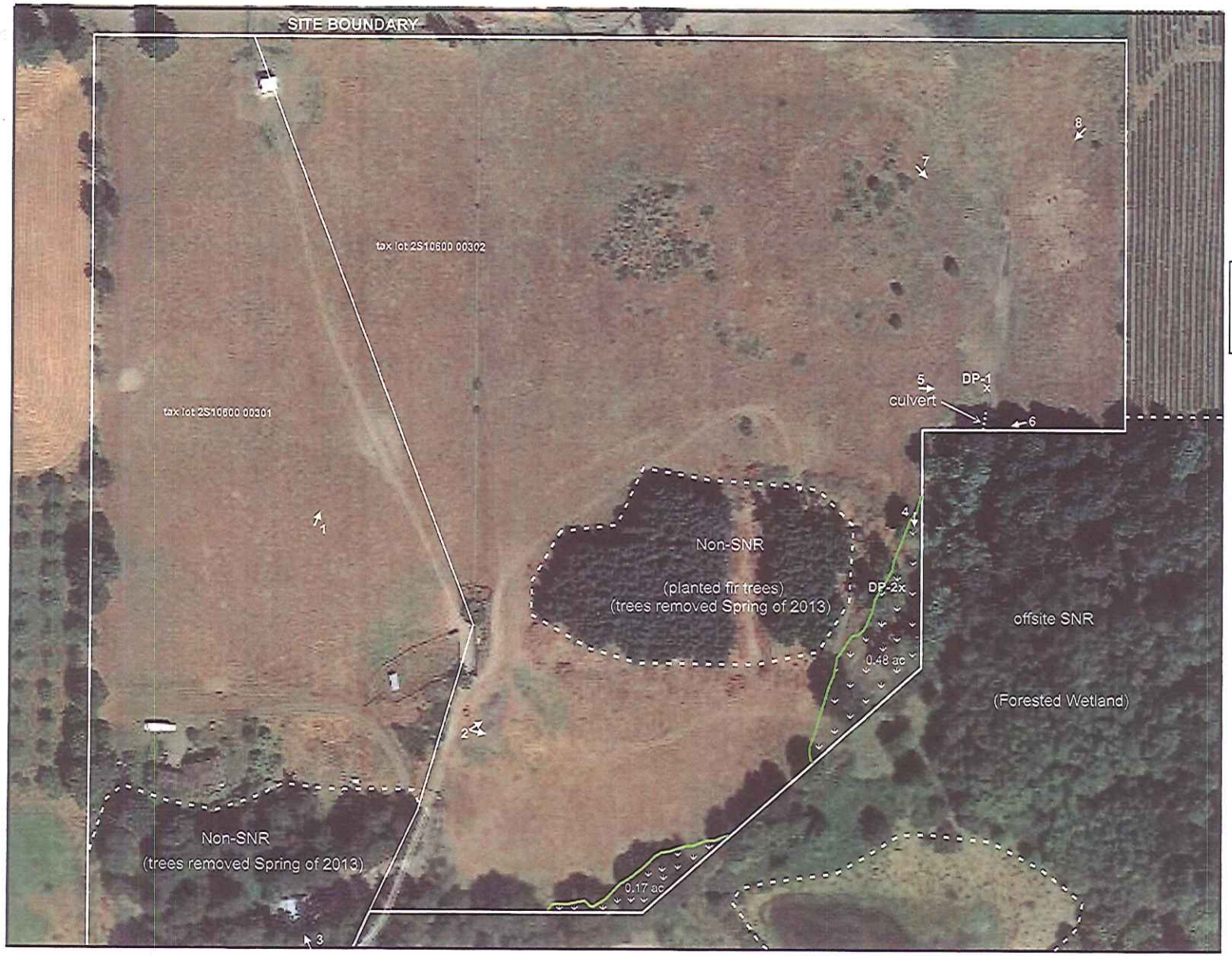
DP-2 Data Plot

Source: www.earth.google.com. Imagery Date June 19, 2008

N

0 65 130 260

Environmental Science & Assessment, LLC e s & a	Goal 5 Resource Map 17811 SW Scholls Ferry Road Beaverton, Oregon	Figure 4 Approx. Scale: 1in. = 130 ft.



Total Wetland Area: 0.65 acres

N

2 Photo Point Orientation

DP-2 x Wetland Data Plot

Imagery Date: 8/15/2012.

Source: Google. http://www.google.org.

Environmental Science & Assessment, LLC

esa

Goal 5 Resource Map
Bartholemy Property
Beaverton, Oregon

Figure 3

Approx. Scale: 1in. = 130 ft.

Valerie Sutton

From: Jack Dalton <jack@esapdx.com>
Sent: Monday, September 30, 2013 11:35 AM
To: Valerie Sutton
Cc: Joe Dills (jdills@angeloplanning.com); Becky Hewitt (rhewitt@angeloplanning.com)
Subject: RE: Resource mapping on Bartholemy property
Attachments: Goal 5 SNR Assessment_002.pdf; App A.pdf

Valerie,
See attached scan copy of report for Bartholemy properties. Two (2) hard copies will be sent out today. If you need additional copies from us, please let me know.

I will include the remaining attachments into two additional emails to keep the email size down.

Thanks,

Jack

Environmental Science & Assessment, LLC
C: 503.703.1229
O: 503.478.0424

From: Valerie Sutton [mailto:vsutton@beavertonoregon.gov]
Sent: Tuesday, September 10, 2013 3:51 PM
To: Jack Dalton
Cc: 'Ed Bartholemy'; Joe Dills (jdills@angeloplanning.com); Becky Hewitt (rhewitt@angeloplanning.com)
Subject: RE: Resource mapping on Bartholemy property

Hi Jack,

We will need documentation confirming that your wetland/SNR determination map is consistent with the other mapping in the project area. Specifically, a LWI was conducted pursuant to OAR 141-086 for the SCMAA (South Cooper Mountain Annexation Area) in which the Bartholemy property is located. Please refer to the Natural Resources report at the link provided below for additional detail on methodology for wetlands and for determination and classification of upland habitat pursuant to Metro Code Title 13.

http://www.beavertonoregon.gov/DocumentCenter/View/5687

Thanks,

Valerie Sutton, AICP
Senior Planner | Community & Economic Development
City of Beaverton | PO Box 4755 | Beaverton OR 97076-4755
p: 503.526.2496 | f: 503.526.3720 | www.beavertonoregon.gov

Beaverton
OREGON

From: Jack Dalton [mailto:jack@esapdx.com]
Sent: Monday, September 09, 2013 1:25 PM
To: Valerie Sutton
Subject: Resource mapping on Bartholemy property

Valerie,
Ed Bartholemy asked me to send our wetland/SNR determination map to you. We conducted a couple of site visits to Ed's property between the spring and summer of this year. We went out to the site after the city did their regional resource mapping and mapped the wetland based on existing conditions on site. The area of the city mapping that may be different than what we found is in the northeastern end of the site. Ed has repaired some broken tile in this area as part of his ranching operations.

An area of forested wetland is contiguous with off-site forested wetland and drainage east of the site. The extent of the hydrology out in the northeast corner is a culvert just north of the adjacent forested wetland.
We planned to prepare a brief technical memo and some photographs of the site conditions to support this map. Let me know if the attached map is sufficient for your purposes or if the memo would also be needed to change the city resource mapping.

Needless to say, this documentation is all preliminary and we would assume additional on-site data and mapping would be required prior to future site development.

Thank you,

Jack Dalton

Environmental Science and Assessment, LLC

107 SE Washington St., Suite 249
Portland, OR 97214
o. 503.478.0424 | f. 503.478.0422
c. 503.703.1229

APPENDIX D – SITE PHOTOS

Photo 1: View north across the western portion of the northern parcel.

↑ Photo 2 : Looking in the northeast direction. The stand of conifers have been removed Spring of 2013.

Photo 3: Mixed Oregon oak/ Douglas fir forest area at the southwest end of the site. The trees were removed Spring of 2013.

Photo 4: Looking south at the onsite portion of the Oregon ash forested wetland area.

Photo 5: Looking east across the bottom portion of the swale. Culvert is located just upslope of tree line.

Photo 6: The culvert located at the tree line along the property boundary.

Photo 7: Looking southeast across the swale.

Photo 8: View southwest from the northeast corner of the property.

Photo 9: Looking north from the southeast corner of the southern parcel.

APPENDIX B – BASELINE RESOURCE MAPPING

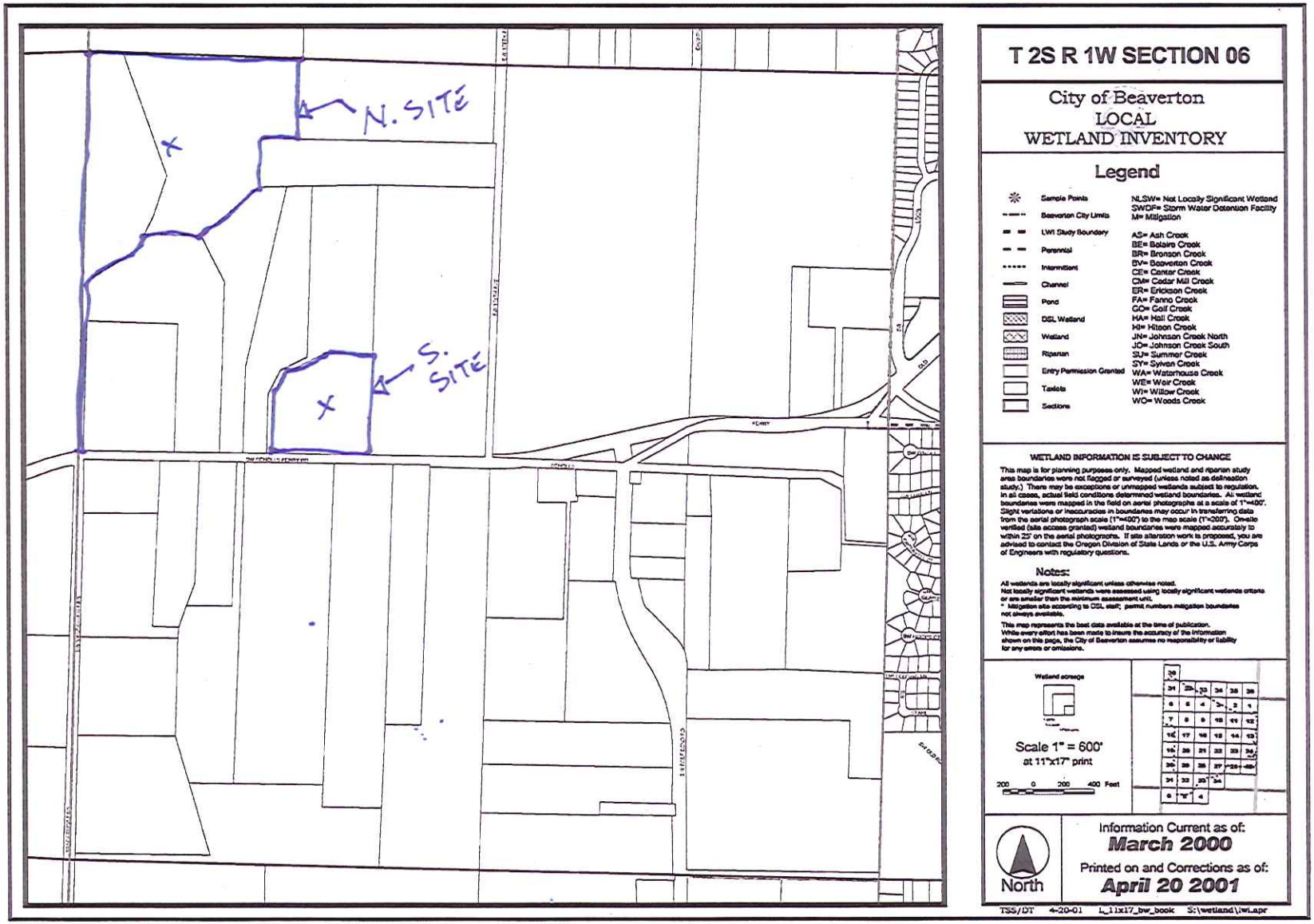
U.S. Fish and Wildlife Service
National Wetlands Inventory

Mar 13, 2013

Wetlands

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

User Remarks:



T 2S R 1W SECTION 06

City of Beaverton LOCAL WETLAND INVENTORY

Legend

- Sample Points
- Beaverton City Limits
- LWI Study Boundary
- Perennial
- Intermittent
- Channel
- Pond
- DSL Wetland
- Wetland
- Riparian
- Entry Permission Granted
- Taxlots
- Sections

NLSW= Not Locally Significant Wetland
SWDF= Storm Water Detention Facility
M= Mitigation

AS= Ash Creek
BE= Bolaire Creek
BR= Bronson Creek
BV= Beaverton Creek
CE= Center Creek
CM= Cedar Mill Creek
ER= Erickson Creek
FA= Fanno Creek
GO= Golf Creek
HA= Hall Creek
HI= Hiteon Creek
JN= Johnson Creek North
JO= Johnson Creek South
SU= Summer Creek
SY= Sylvan Creek
WA= Waterhouse Creek
WE= Weir Creek
WI= Willow Creek
WO= Woods Creek

WETLAND INFORMATION IS SUBJECT TO CHANGE

This map is for planning purposes only. Mapped wetland and riparian study area boundaries were not flagged or surveyed (unless noted as delineation study.) There may be exceptions or unmapped wetlands subject to regulation. In all cases, actual field conditions determined wetland boundaries. All wetland boundaries were mapped in the field on aerial photographs at a scale of 1"=400'. Slight variations or inaccuracies in boundaries may occur in transferring data from the aerial photograph scale (1"=400') to the map scale (1"=200'). On-site verified (site access granted) wetland boundaries were mapped accurately to within 25' on the aerial photographs. If site alteration work is proposed, you are advised to contact the Oregon Division of State Lands or the U.S. Army Corps of Engineers with regulatory questions.

Notes:

All wetlands are locally significant unless otherwise noted.
Not locally significant wetlands were assessed using locally significant wetlands criteria or are smaller than the minimum assessment unit.
* Mitigation site according to DSL staff; permit numbers mitigation boundaries not always available.

This map represents the best data available at the time of publication. While every effort has been made to insure the accuracy of the information shown on this page, the City of Beaverton assumes no responsibility or liability for any errors or omissions.

Wetland acreage

Scale 1" = 600'
at 11"x17" print

200 0 200 400 Feet

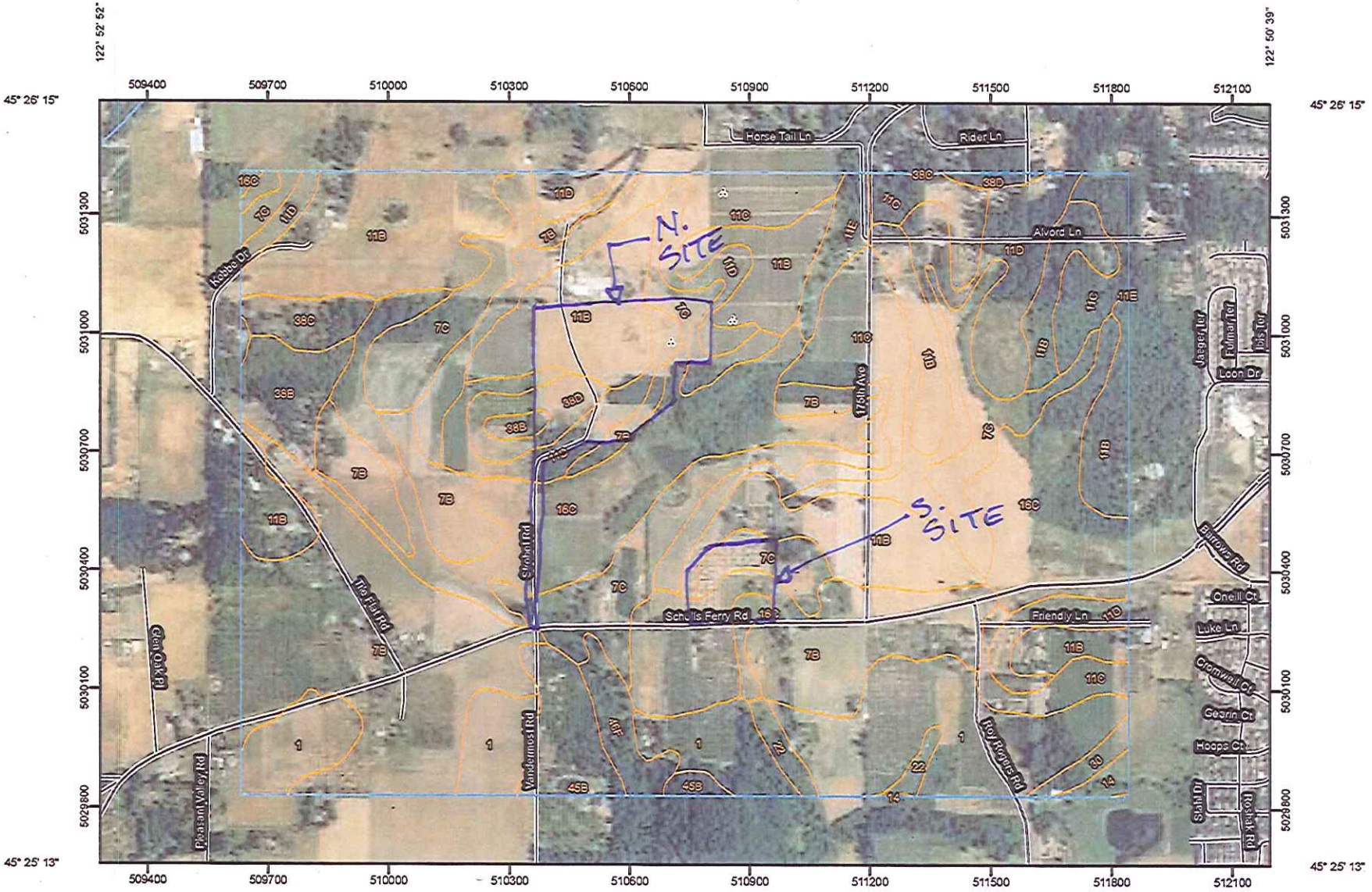
North

Information Current as of:
March 2000

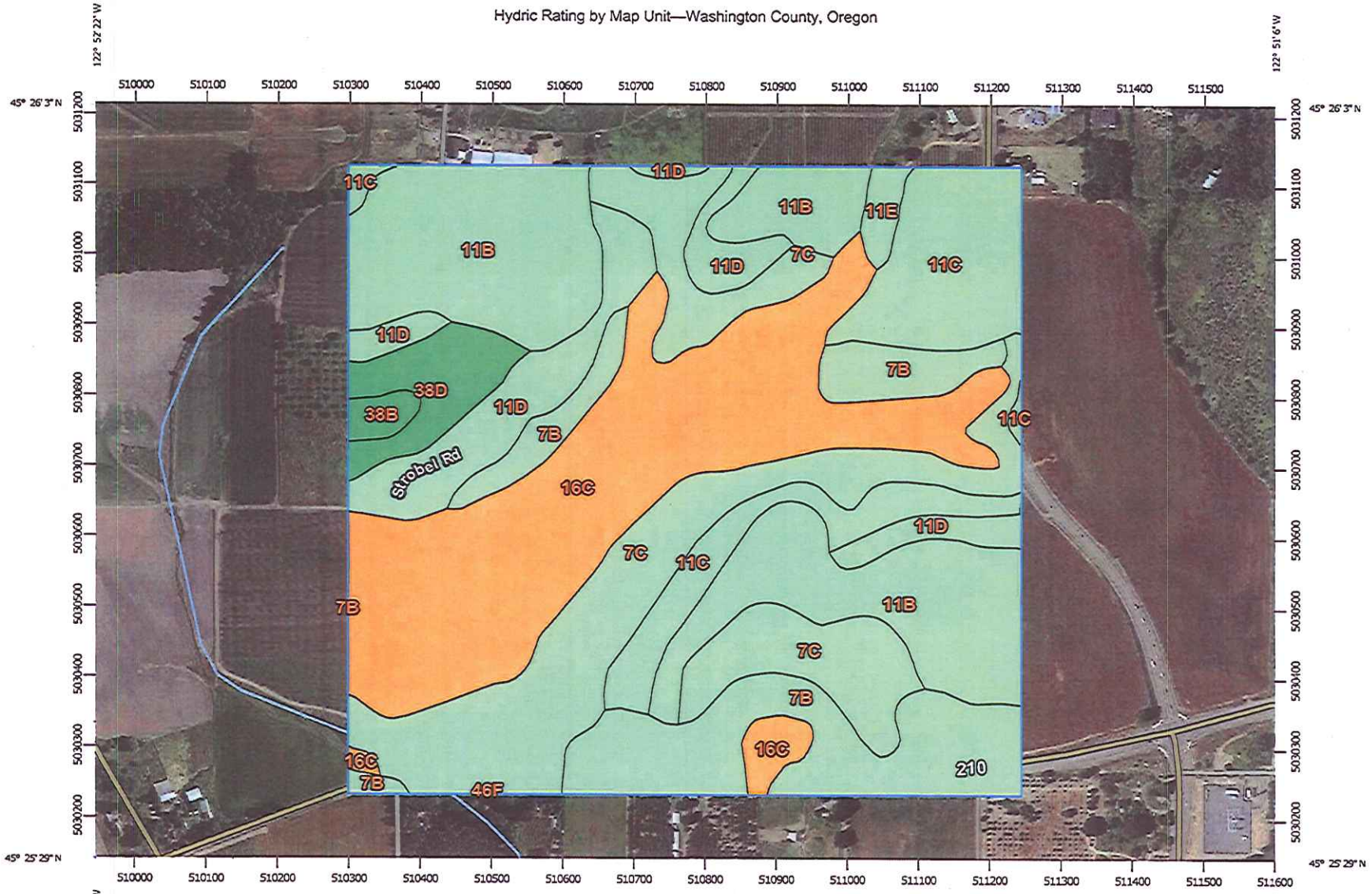
Printed on and Corrections as of:
April 20 2001

TSS/DT 4-20-01 L_11x17_bw_book S:\wetland\lwi.apr

Soil Map—Washington County, Oregon



Hydric Rating by Map Unit—Washington County, Oregon



Map Scale: 1:7,570 if printed on A landscape (11" x 8.5") sheet.

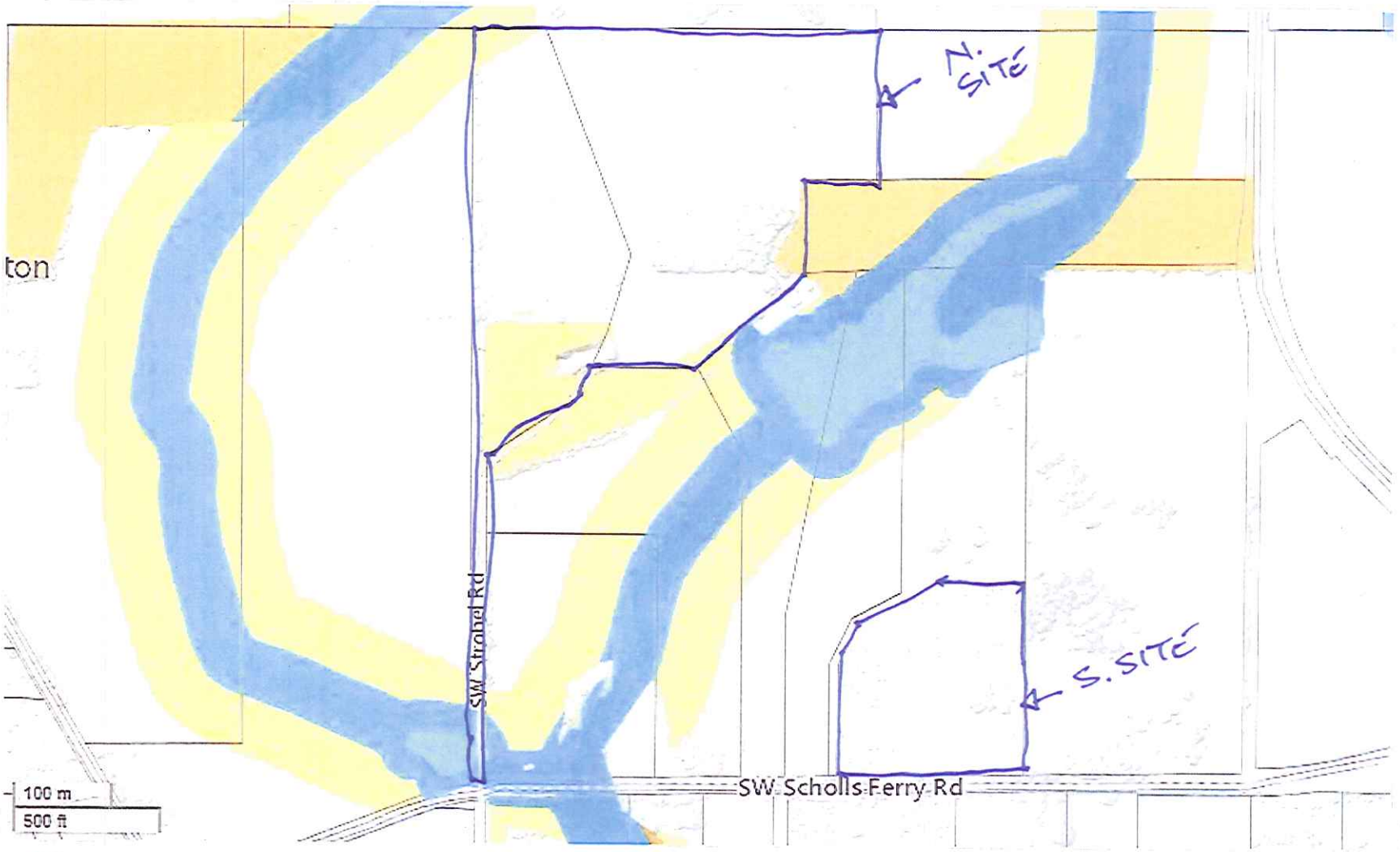
N

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

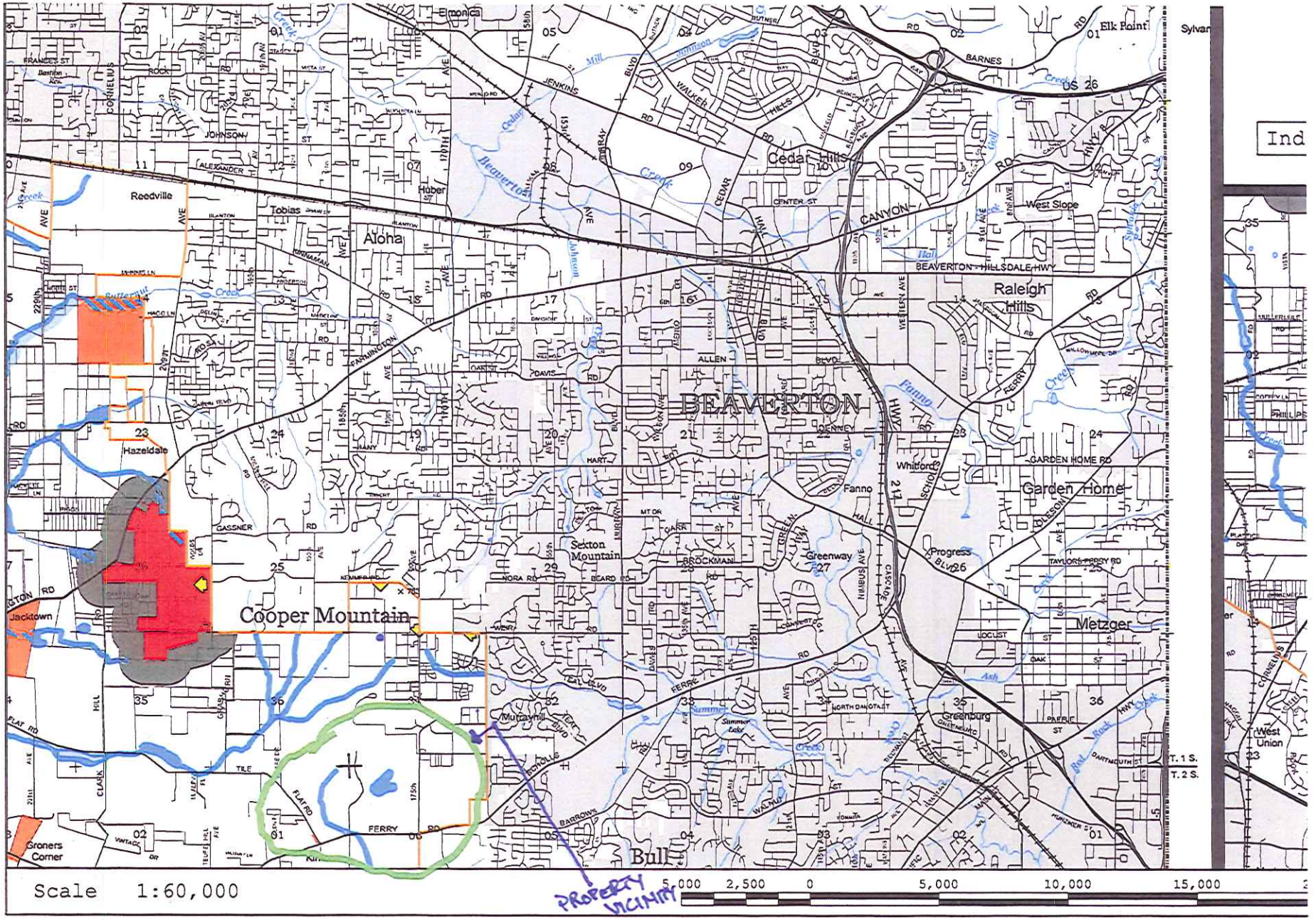
HYDRIC SOILS (NRCS RATING)



Metro

Data Resource Center
600 NE Grand Ave, Portland, OR 97232
503.797.1742 – drc@oregonmetro.gov

2008 AERIAL PHOTO – METRO MAPPING



WASHINGTON COUNTY SNR MAPS (Map # 56)

APPENDIX C – WETLAND DATA

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

Project/Site: Bartholemy Property City/County: Beaverton/Washington Sampling Date: 7/24/13

Applicant/Owner: Ed Bartholemy State: OR Sampling Point: DP-1

Investigator(s): Kim Reavis Section, Township, Range: S06, T2S, R1W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): ≤10%

Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.4258 Long: -122.8674 Datum: N/A

Soil Map Unit Name: Cascade silt loam, 7-12% slopes (7C) or Delena silt loam, 3-12% slopes (16C) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No _____	Is the Sampled Area within a Wetland? Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: plot located 30 feet north of culvert

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30' diameter)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5' diameter)			
1. Agrostis sp.	90	yes	FAC
2. Lolium perenne	5		FAC
3. Alopecurus pratensis	trace		FAC
4. Festuca arundinacea	trace		FAC
5. Cirsium arvense	trace		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: marginal plant community

SOIL

Sampling Point: DP-1

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4"	10YR 4/2	100	N/A				silt loam	
4"-13"	10YR 3/2	80	10YR 4/6	20	C	M	silt loam	
13"-19"	10YR 3/2	85	10YR 2/2	15	C	M	silt loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks: Data plot located in swale-like topography located on a slope with no channel present. The area has been drain tiled that connects to a culvert that continues offsite.

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

Project/Site: Bartholemy Property City/County: Beaverton/Washington Sampling Date: 7/24/13

Applicant/Owner: Ed Bartholemy State: OR Sampling Point: DP-2

Investigator(s): Jack Dalton Section, Township, Range: S06, T2S, R1W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): <10%

Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.4258 Long: -122.8674 Datum: N/A

Soil Map Unit Name: Cascade silt loam, 7-12% slopes (7C) or Delena silt loam, 3-12% slopes (16C) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks: plot located approx. 40 feet west of property line

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus latifolia	25	yes	FACW
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30' diameter)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5' diameter)			
1. Agrostis sp.	35	yes	FAC
2. Lollium perenne	25	yes	FAC
3. Alopecurus pratensis	15		FAC
4. Juncus effusus	25	yes	FACW
5. Phalaris arundinacea	10		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: herbaceous strata disturbed from grazing - plant community likely would be closer to off-site conditions if not grazed

SOIL

Sampling Point: DP-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4"	10YR 4/2	100	N/A				silt loam	
4"-13"	10YR 3/2	90	10YR 4/6	10	C	M	silt loam	
13"-18"	10YR 3/2	85	10YR 2/1	15	C	M	silt clay loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks: hydric soil conditions along eastern boundary adjacent to off-site PFO

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

Water Table Present? Yes ✓ No _____ Depth (inches): 2 in

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

Wetland Hydrology Present? Yes X No _____

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

Remarks: Data plot located along flat topography bordering the off-site riparian/PFO corridor. Pockets of surface ponding in PFO off-site, likely typical conditions for on-site wetland in early spring

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

Project/Site: Bartholemy Property City/County: Beaverton/Washington Sampling Date: 7/24/13

Applicant/Owner: Ed Bartholemy State: OR Sampling Point: DP-3

Investigator(s): Jack Dalton Section, Township, Range: S06, T2S, R1W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): <5%

Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.4258 Long: -122.8674 Datum: N/A

Soil Map Unit Name: Cascade silt loam, 7-12% slopes (7C) or Delena silt loam, 3-12% slopes (16C) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____ No X	Is the Sampled Area within a Wetland? Yes _____ No X
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes _____ No X	

Remarks: plot located approx. 30 feet west of driveway

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30' diameter)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5' diameter)			
1. Triticum sp.	85	yes	FAC
2. Lollium perenne	15		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: planted in wheat crop

SOIL

Sampling Point: DP-3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 3/2	98	10YR 3/6				silt loam	plowed/organics and ox. rhiz
6"-13"	10YR 3/2	95	10YR 3/6	5	C	M	silt loam	Ox rhiz and mottles
13"-18"	10YR 3/2	95	10YR 2/2	5	C	M	silt clay loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks: hydric soil conditions along eastern boundary adjacent to off-site PFO

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): >18 in

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): >18 in

Wetland Hydrology Present? Yes ___ No X

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

Remarks: Data plot located at low point of field. the roadside ditch is 3 feet below elevation of field and effectively drains surface saturation and shallow groundwater. Several draintile outfalls observed in ditch.