



## Environmental Science & Assessment, LLC

### MEMORANDUM

DATE: April 2, 2013

TO: Matt Wellner Metropolitan Land Group, LLC

FROM: Jack Dalton

RE: Fox Hollow Wetland/Goal 5 Natural Resource Determination  
(18200 SW Horse Tale Drive Washington County, Oregon)

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Environmental Science & Assessment, LLC (ES&A) conducted a wetland and natural resource determination for the Fox Hollow site in Washington County. The 63-acre parcel (TL 1S1310001602) is located at 18200 SW Horse Tale Drive east of SW 175<sup>th</sup> Avenue (Figure 1). 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 parcel. The second involved an onsite wetland determination by ES&A staff including site data collection and boundary mapping.

Figures are provided in Appendix A. The wetland determination data and assessment summary is provided in Appendix B. Wildlife Assessment is provided in Appendix C.

### Wetlands

The wetland determination data collection and mapping was conducted on February 21, 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.

Six (6) representative data plots were collected for each wetland area to document the wetland boundary. The wetland boundary map and data plot locations were mapped using a GPS hand-held mapping unit with sub-meter accuracy (Figure 2). The wetland determination data meets requirements for completing a wetland delineation (Appendix B). However, additional hydrologic and mapping information would still need to be collected to complete a concurred wetland boundary delineation from state and federal agencies.

The wetland assessment follows the *Oregon Freshwater Assessment Methodology* (OFWAM) as required by Department of State Lands (DSL) under OAR 141-120-0020(8). OFWAM is recognized by the state as the methodology to determine wetland functions and assist state and local planning bodies in designating “significant wetland” on site.

## **Wildlife Habitat Assessment**

Potential wildlife habitats on site were evaluated using the Wildlife Habitat Assessment (WHA) developed by City of Portland Bureau of Planning. This methodology evaluates the level to which existing habitat provides food and cover habitat components and other components that may contribute to habitat value. This methodology is used by Washington County to evaluate wildlife habitat conditions for Section 422 – Significant Natural Resources - of the *Washington County Community Development Code*.

## **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 for the area does not indicate any wetland or open water features on the parcel. The topography of the site is a southwest facing slope with a wide drainage basin draining to the southwest (Figure 1).
- *National Wetland Inventory (NWI) Map*: Beaverton, Oregon 7.5-minute quadrangle (1981). The NWI map for the area does not indicate any wetlands on the parcel.
- *National Resource Conservation Service Washington County Soil Survey*. The soil survey indicates a small area of hydric soils (Delena Silt Loam (16C)) is present at the northeast and northwest portions of the site. The

mapped hydric soils are primarily offsite but extends onto the property along the northern boundary.

- *Metro Data Resource Center MetroMap (2013)*. The metro natural resource mapping indicates an historic drainage alignment paralleling the entrance driveway and across the horse pastures east of the main barn. This stream alignment does not reflect the site conditions, based on the aerial photos available and the recent site investigation. No wetlands are mapped on the MetroMap.
- *Aerial photography (Google Earth): 2002 – 2010*. The 2010 aerial photo indicate the site is currently actively managed as open pasture and cropland with a few isolated clusters of trees throughout the site (Figure 2). Past aeriels back to 2002 indicate the site has remained unchanged in the last decade.

### **Existing Conditions**

The topography throughout the site slopes to the south and southwest. On the western portion of the site it slopes south from a ridgeline. The eastern half of the site has a large, wide drainage basin that slopes from the northeast to the southwest portion of the site.

The site is used as a horse boarding and training/riding facility that has associated structures and a parking lot located in the south central portion of the site. A residential house is located centrally in the site and another structure northwest of the house. Access to the property is from the northeast corner off of NW Horse Tale Drive and the driveway turns south to access the boarding facility.

The entire site is open field with a mix of grasses and upland weedy species. The fields on the eastern half of the site are managed through mowing or grazing with a series of horse riding trails. The western half of the site is a mixture of cultivated fields and pasture for grazing.

Two wetlands and two remnant stream segments were identified on site (Figure 2). Both of the wetlands are located directly east of the entrance driveway at the point where the steeper slopes in the northeastern corner of the site transitions to a more gradual slope in the main open grass field in the interior of the site. The two remnant stream segments are associated with existing culverts and drain tile systems at the north end of the site and the southwest corner of the site.

#### *Remnant Stream Segments*

The short segment of stream at the north end of the site adjacent to the driveway is a rock-lined channel (290 square feet) approximately 3 feet deep. Water enters from the north via a culvert under the driveway from a channelized open water feature. The channel ends at a culvert just east of the driveway.

The southern-most stream segment (1,210 square feet) starts at the culvert outfall and extends approximately 90 feet to another short culvert, which then conveys the flow to a second open water channel that drains to the southern edge of the site (Figure 2). The stream drains off site to the south and a downstream confluence with a tributary to the Tualatin River approximately 2 miles south of the site.

The natural surface flow on site has been altered by the placement of culverts historically for the gravel entry road and the placement of the horse pastures west of the barn. Evidence of older clay drain tile pipe was observed on site and the culverts are currently maintained on site for existing farm practices. The only remaining open channels on site are in the northern and southern end of the site (Figure 2).

### *Wetlands*

The boundaries for both wetlands are determined on the western edge by the road fill. The eastern and southern boundaries are determined by topographic changes. The two wetlands have similar hydrologic conditions, dependent upon the groundwater discharge from the north and northeast portions of the site.

The northern most wetland (3,770 square feet) is located just east of the entrance driveway (Figure 2). Ground water discharging at the base of the road cut collects in a depression extending south and east of the driveway. The emergent wetland is dominated by meadow foxtail, lacking any shrub or forest cover.

The southern-most wetland (4,000 square feet) parallels the driveway just north of the existing boarding facilities (Figure 2). The wetland hydrologic source is ground water discharging at the base of the road cut. This emergent wetland is dominated by meadow foxtail, lacking any shrub or forest cover.

A large culvert located in the southwest corner of the southern wetland that conveys surface water southwest under the horse pastures, east of the barn. The culvert outfalls in the southern stream segment in the southwest corner of the site (Figure 2).

The wetland assessment indicates function is limited in the existing wetlands due to past site uses and altered hydrology conditions. Some wildlife functions still exist, but are extremely limited. The hydrologic functions are degraded. Sensitivity to impact and enhancement potential is present, but would be highly limited by current conditions. Education, Recreation and Aesthetic quality functions/potential are absent (Appendix C). This wetland is very limited functionally and would not warrant any special protections under future local planning overlays.

## *Wildlife Habitat Assessment*

The WHA assessment score totaled 27 for the twelve habitat components assessed. Most functions were rated low. No significant riparian functions are present on site currently due to the limited size of the wetland areas and the lack of a continuous stream channel through the site.

The lack of shrub and tree cover along and within the resource limited most of the functions. The adjacent disturbed pasture field lacks diverse plant community and multi-storied structure to provide cover, which lowers the score for cover and food sources (Appendix C).

## **Jurisdictional Status**

All site wetlands and streams are jurisdictional with the State of Oregon through the DSL. The northern wetland is isolated and without a downstream surface water connection. The southern wetland feature has a downstream connection through the culvert to the southern remnant stream channel and to offsite tributaries to the Tualatin River southwest of the site. The wetlands would likely be jurisdictional under the Section 404 of the Clean Water Act, however, the US Army Corps of Engineers (USACE) would have to 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.

## **Conclusion**

All resources meeting the definition of Oregon's Goal 5 (OAR 660-023-0030) and Metro Title 13 (Metro Code Section 3.07.1310 - 3.07.1370) have been identified. The only existing natural resources mapped are limited to the wetlands and two remnant stream segments on site (Figure 2, Appendix A). There is no longer a continuous stream channel through the site. Any waterways or other water resources that may have been present historically have been altered by past agricultural practices.

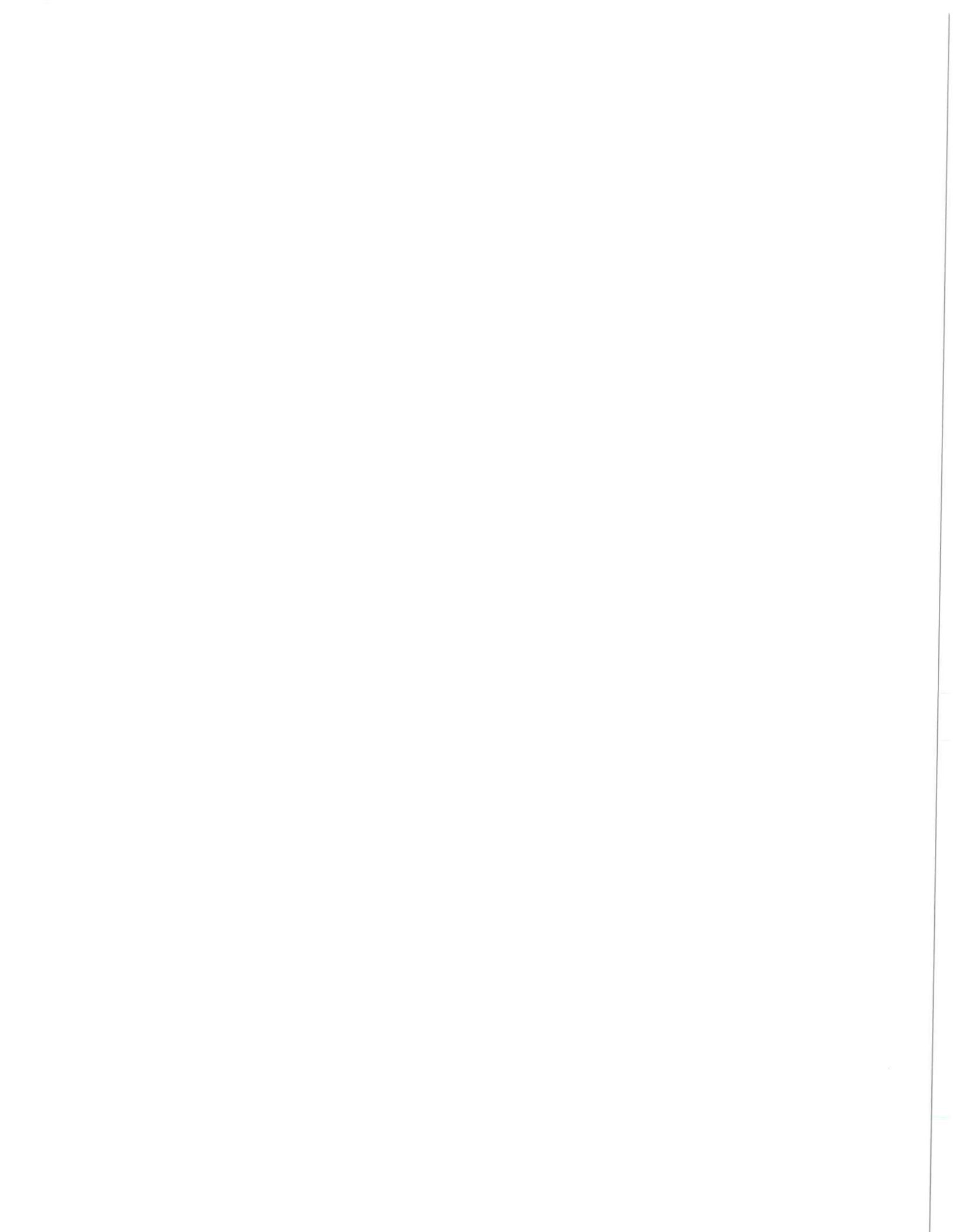
Both of the wetlands are located directly east of the entrance road in the northeastern end of the site. The two remnant stream segments are associated with existing culverts and drain tile systems at the north end of the site and the southwest corner of the site.

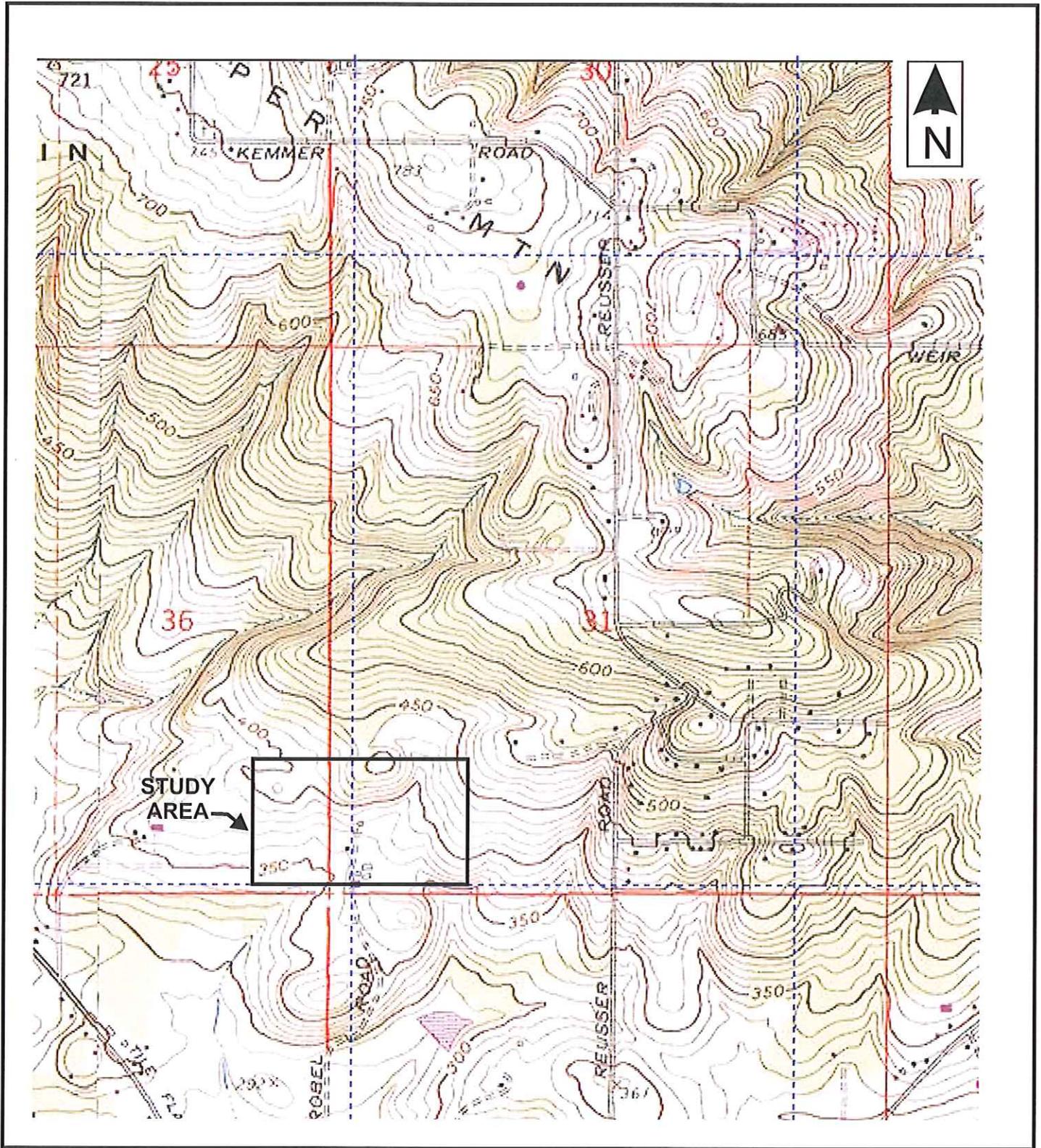
No other significant wildlife habitat is present on site. The wetland areas are limited in size and are isolated from any downstream open water connection. The open pasture areas provide some upland grassland habitat but has been altered

from agricultural uses, thus does not afford special protections. The site also lacks any intact upland or riparian forested communities. The existing habitat on site is not unique and similar plant communities are located in surrounding areas.

## **APPENDIX A – FIGURES**

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

Environmental  
Science &  
Assessment, LLC



Vicinity Map  
MLG - Fox Hollow  
Washington County, Oregon

Figure 1

Approx. Scale:  
1in. = 1200 ft.

Total Wetland/Waterway  
Area = 9,270 sf. (0.21 ac.)  
Total Vegetated Corridor  
Area = 62,255 sf. (1.43 ac.)



Beech Aerial, Google, 2010, Boundary Mapping, ES&A, LLC - March 2011

Approx. Scale:  
1 in = 270 ft

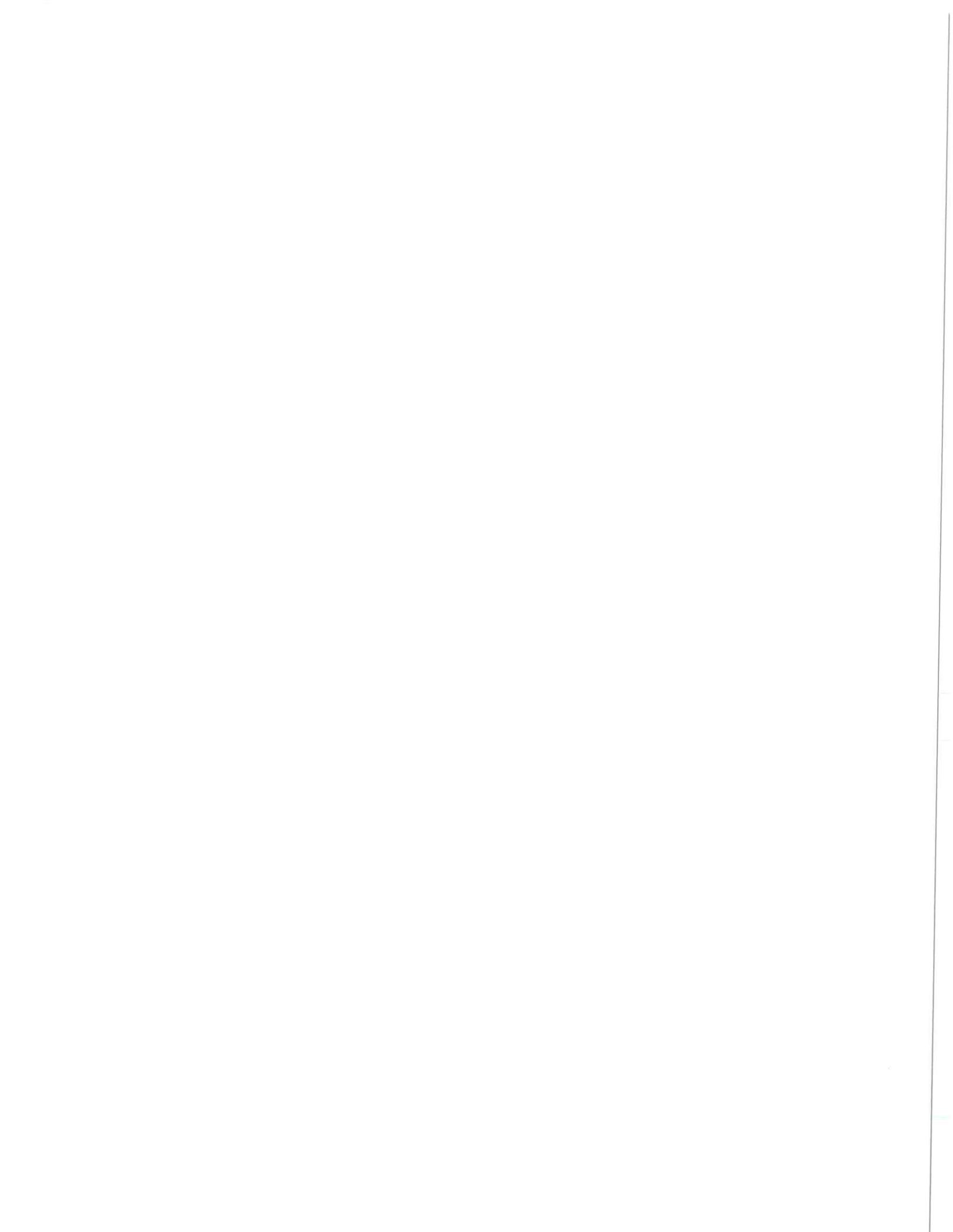
FIGURE 2

Wetland Determination  
MLG - Fox Hollow  
Washington County, Oregon



**APPENDIX B – WETLAND DATA AND ASSESSMENT SUMMARY**

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

Project/Site: 18218 SW Horse Tale Drive City/County: Beaverton / Washington Sampling Date: 2/21/13  
 Applicant/Owner: MLG, Inc. State: OR Sampling Point: DP-1  
 Investigator(s): Kim Reavis Section, Township, Range: S 31, T 1S, R 1W  
 Landform (hillslope, terrace, etc.): valley hillslope Local relief (concave, convex, none): convex Slope (%): <5%  
 Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.4352 deg Long: -122.8651 deg Datum: NAD 83  
 Soil Map Unit Name: Cornelius and Kinton silt loams, 7 to 12 percent slopes (11C) NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

### VEGETATION – Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
<b>Tree Stratum</b> (Plot size: <u>30' diameter</u> )				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
1. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
2. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
3. _____				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>105</u> (A) <u>335</u> (B)  Prevalence Index = B/A = <u>3.2</u>
4. _____				
	<u>0</u>	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>30' diameter</u> )				
1. _____				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants <sup>1</sup> ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
3. _____				
4. _____				
5. _____				
	<u>0</u>	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>5' diameter</u> )				
1. <u>Agrostis stolonifera</u>	<u>55</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Alopecurus pratensis</u>	<u>35</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Leontodon taraxacoides</u>	<u>5</u>		<u>UPL</u>	
4. <u>Hypochaeris radicata</u>	<u>10</u>		<u>FACU</u>	
5. <u>Dactylis glomerata</u>	<u>trace</u>		<u>FACU</u>	
6. <u>Galium aparine</u>	<u>trace</u>		<u>FACU</u>	
7. <u>Cirsium vulgare</u>	<u>trace</u>		<u>FACU</u>	
8. _____				
9. _____				
10. _____				
11. _____				
	<u>100</u>	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. _____				
2. _____				
<b>% Bare Ground in Herb Stratum</b> _____				
Remarks: Marginal weedy grass community with facultative grasses. Prevalence Index is >3.0				

**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10"	10YR 3/2	100	N/A				silt loam	
10"-14"	10YR 3/2	95	5YR 3/4	5	C	M	silt loam	
14"-18"	2.5Y 4/2	85	5YR 4/6	15	C	M	silty clay loam	

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

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

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

<sup>3</sup>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 \_\_\_\_\_ No X

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

**Field Observations:**

Surface Water Present?	Yes _____ No <u>✓</u>	Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
Water Table Present?	Yes _____ No <u>✓</u>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <u>✓</u>	Depth (inches): _____	

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

Remarks:

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

Project/Site: 18218 SW Horse Tale Drive City/County: Beaverton / Washington Sampling Date: 2/21/13  
 Applicant/Owner: MLG, Inc. State: OR Sampling Point: DP-2  
 Investigator(s): Kim Reavis Section, Township, Range: S 31, T 1S, R 1W  
 Landform (hillslope, terrace, etc.): valley hillslope Local relief (concave, convex, none): concave Slope (%): <5%  
 Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.4352 deg Long: -122.8651 deg Datum: NAD 83  
 Soil Map Unit Name: Cornelius and Kinton silt loams, 7 to 12 percent slopes (11C) NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30' diameter</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>100</u> x 3 = <u>300</u> FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>100</u> (A) <u>300</u> (B) Prevalence Index = B/A = _____
0 = Total Cover				
<b>Sapling/Shrub Stratum (Plot size: <u>30' diameter</u>)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
0 = Total Cover				
<b>Herb Stratum (Plot size: <u>5' diameter</u>)</b>				
1. <u>Alopecurus pratensis</u>	<u>65</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Holcus lanatus</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Festuca arundinacea</u>	<u>10</u>	_____	<u>FAC</u>	
4. <u>Cardamine oligosperma</u>	<u>trace</u>	_____	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
100 = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8"	10YR 2/2	100	N/A				silty clay loam	
8"-17"	10YR 2/2	95	5YR 3/2	5	C	M	silty clay loam	redox increasing with depth

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

**Field Observations:**

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

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

Remarks: low precipitation levels during the past 2 months has most likely affected the lack of hydrology at this time.

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

Project/Site: 18218 SW Horse Tale Drive City/County: Beaverton / Washington Sampling Date: 2/21/13  
 Applicant/Owner: MLG, Inc. State: OR Sampling Point: DP-3  
 Investigator(s): Kim Reavis Section, Township, Range: S 31, T 1S, R 1W  
 Landform (hillslope, terrace, etc.): valley hillslope Local relief (concave, convex, none): convex Slope (%): <5%  
 Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.4352 deg Long: -122.8651 deg Datum: NAD 83  
 Soil Map Unit Name: Cornelius and Kinton silt loams, 7 to 12 percent slopes (11C) NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30' diameter</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	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 = _____
0 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>30' diameter</u> )				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
0 = Total Cover				
Herb Stratum (Plot size: <u>5' diameter</u> )				
1. <u>Festuca arundinacea</u>	<u>75</u>	<u>yes</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. <u>Holcus lanatus</u>	<u>10</u>	_____	<u>FAC</u>	
3. <u>Cirsium arvense</u>	<u>15</u>	_____	<u>FAC</u>	
4. <u>Galium aparine</u>	<u>trace</u>	_____	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
100 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

**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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8"	10YR 3/2	100	N/A				silty clay loam	
8"-15"	10YR 2/2	100	N/A				silty clay loam	
15"-19"	2.5Y 4/2 & 10YR 2/2	60 / 35	7.5YR 3/3	5	C	M	silty clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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<sup>3</sup>:**

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

<sup>3</sup>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 \_\_\_\_\_ No X

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)

Secondary Indicators (2 or more required)

- 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)
- 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? Yes \_\_\_\_\_ No ✓ Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

Wetland Hydrology Present? Yes \_\_\_\_\_ No X

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

Remarks:

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

Project/Site: 18218 SW Horse Tale Drive City/County: Beaverton / Washington Sampling Date: 2/21/13  
 Applicant/Owner: MLG, Inc. State: OR Sampling Point: DP-4  
 Investigator(s): Kim Reavis Section, Township, Range: S 31, T 1S, R 1W  
 Landform (hillslope, terrace, etc.): valley hillslope Local relief (concave, convex, none): concave Slope (%): <5%  
 Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.4352 deg Long: -122.8651 deg Datum: NAD 83  
 Soil Map Unit Name: Cornelius and Kinton silt loams, 7 to 12 percent slopes (11C) NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

### VEGETATION – Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Worksheet
<b>Tree Stratum</b> (Plot size: <u>30' diameter</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
	<u>0</u>	= Total Cover		<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum</b> (Plot size: <u>30' diameter</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
	<u>0</u>	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>5' diameter</u> )				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants <sup>1</sup> ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	<u>100</u>	<u>yes</u>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	<u>100</u>	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: _____)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. _____				
2. _____				
				= Total Cover
% Bare Ground in Herb Stratum _____				
Remarks:				

**SOIL**

Sampling Point: DP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6"	10YR 3/2	80	10YR 4/3 & 5/8	15 / 5	C	M	silty clay loam	
6"-10"	10YR 3/2	85	10YR 3/3 & 3/6	13 / 2	C	M	silty clay loam	
10"-18"	10YR 3/2	80	10YR 3/3 & 7.5YR 4/6	15 / 5	C	M	silty clay loam	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils <sup>3</sup> :		
___ Histosol (A1)		___ Sandy Redox (S5)		___ 2 cm Muck (A10)				
___ Histic Epipedon (A2)		___ Stripped Matrix (S6)		___ Red Parent Material (TF2)				
___ Black Histic (A3)		___ Loamy Mucky Mineral (F1) (except MLRA 1)		___ Very Shallow Dark Surface (TF12)				
___ Hydrogen Sulfide (A4)		___ Loamy Gleyed Matrix (F2)		___ Other (Explain in Remarks)				
___ Depleted Below Dark Surface (A11)		___ Depleted Matrix (F3)						
___ Thick Dark Surface (A12)		✓ Redox Dark Surface (F6)						
___ Sandy Mucky Mineral (S1)		___ Depleted Dark Surface (F7)						
___ Sandy Gleyed Matrix (S4)		___ Redox Depressions (F8)						
Restrictive Layer (if present):								
Type: _____								
Depth (inches): _____								
						Hydric Soil Present? Yes <u>X</u> No _____		
Remarks: strongest redox occurs below 10", the upper 6" is possibly disturbed								

**HYDROLOGY**

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

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

Project/Site: 18218 SW Horse Tale Drive City/County: Beaverton / Washington Sampling Date: 2/21/13  
 Applicant/Owner: MLG, Inc. State: OR Sampling Point: DP-5  
 Investigator(s): Kim Reavis Section, Township, Range: S 31, T 1S, R 1W  
 Landform (hillslope, terrace, etc.): valley hillslope Local relief (concave, convex, none): convex Slope (%): <5%  
 Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.4352 deg Long: -122.8651 deg Datum: NAD 83  
 Soil Map Unit Name: Cornelius and Kinton silt loams, 7 to 12 percent slopes (11C) NWI classification: N/A

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks:			

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30' diameter</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:
<u>0</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>30' diameter</u> )				Total % Cover of: _____ Multiply by: _____
1. _____	_____	_____	_____	OBL species _____ x 1 = _____
2. _____	_____	_____	_____	FACW species _____ x 2 = _____
3. _____	_____	_____	_____	FAC species _____ x 3 = _____
4. _____	_____	_____	_____	FACU species _____ x 4 = _____
5. _____	_____	_____	_____	UPL species _____ x 5 = _____
<u>0</u> = Total Cover				Column Totals: _____ (A) _____ (B)
Herb Stratum (Plot size: <u>5' diameter</u> )				Prevalence Index = B/A = _____
1. <u>Alopecurus pratensis</u>	<u>50</u>	<u>yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Festuca arundinacea</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Holcus lanatus</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>100</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	_____ = Total Cover
% Bare Ground in Herb Stratum _____				
Remarks:				



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

Project/Site: 18218 SW Horse Tale Drive City/County: Beaverton / Washington Sampling Date: 2/21/13  
 Applicant/Owner: MLG, Inc. State: OR Sampling Point: DP-6  
 Investigator(s): Kim Reavis Section, Township, Range: S 31, T 1S, R 1W  
 Landform (hillslope, terrace, etc.): valley hillslope Local relief (concave, convex, none): concave Slope (%): <5%  
 Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.4352 deg Long: -122.8651 deg Datum: NAD 83  
 Soil Map Unit Name: Cornelius and Kinton silt loams, 7 to 12 percent slopes (11C) NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diameter )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
4. _____	_____	_____	_____	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 = _____	
0 = Total Cover					
<b>Sapling/Shrub Stratum (Plot size: 30' diameter )</b>					
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ✓ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants <sup>1</sup> ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
0 = Total Cover					
<b>Herb Stratum (Plot size: 5' diameter )</b>					
1. <u>Alopecurus pratensis</u>	<u>100</u>	<u>yes</u>	<u>FAC</u>		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
100 = Total Cover					
<b>Woody Vine Stratum (Plot size: _____)</b>					
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum _____ Remarks:					

**SOIL**

Sampling Point: DP-6

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5"	10YR 3/2	100	N/A				silty clay loam	
5"-13"	10YR 3/2	95	10YR 5/8	5	C	M	silty clay loam	
13"-14"	10YR 3/2	90	10YR 5/3 & 5/6	5 / 5	C	M	silty clay loam	
14"-18"	10YR 3/2	85	10YR 5/3 & 7.5YR 4/6	10 / 5	C	M	silty clay loam	

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

<b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

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

Remarks:

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
<u>Primary Indicators (minimum of one required; check all that apply)</u>	<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

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

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

Remarks: standing water is present upslope approximately 5 feet away

Wetland Assessment Questions: Answer Sheet				
Wetland identifier	Fox Hollow			
<b>Wildlife habitat</b>				
Question 1	C			
Question 2	C			
Question 3	C			
Question 4	C			
Question 5	b			
Question 6	b			
Question 7	a			
Question 8	b			
Question 9	C			
Assessment descriptor	SOME WILDLIFE			
<b>Fish habitat</b>				
<i>Streams and rivers</i>				
Question 1	C			
Question 2	C			
Question 3	C			
Question 4	a			
Question 5	b			
Question 6	C			
<i>Lakes and ponds</i>				
Question 1	/			
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Assessment descriptor	DEGRADED			
<b>Water quality</b>				
Question 1	b			
Question 2	a			
Question 3	b			
Question 4	C			
Question 5	b			
Question 6	a			
Assessment descriptor	DEGRADED			

Wetland Assessment Questions: Answer Sheet			
Wetland identifier	Fox Hollow		
<b>Hydrologic control</b>			
Question 1	b		
Question 2	a		
Question 3	c		
Question 4	a		
Question 5	c		
Question 6	b		
Question 7	b		
Assessment descriptor	DEGRADED		
<b>Sensitivity to future impacts</b>			
Question 1	a		
Question 2	<del>a</del>		
Question 3	c		
Question 4	b		
Question 5	b		
Question 6	c		
Assessment descriptor	POTENTIAL		
<b>Enhancement potential</b>			
Question 1	a		
Question 2	c		
Question 3	c		
Question 4	c		
Question 5	c		
Question 6	b		
Assessment descriptor	POTENTIAL		
<b>Education</b>			
Question 1	c		
Question 2	a		
Question 3	b		
Question 4	c		
Question 5	c		
Question 6	b		
Assessment descriptor	NOT APPROPRIATE		

Wetland Assessment Questions: Answer Sheet				
Wetland identifier				
<b>Recreation</b>				
Question 1	C			
Question 2	C			
Question 3	C			
Question 4	b			
Question 5	b			
Question 6	b			
Assessment descriptor	DO NOT PROVIDE			
<b>Aesthetic quality</b>				
Question 1	C			
Question 2	C			
Question 3	C			
Question 4	b			
Question 5	a			
Question 6	a			
Assessment descriptor	NOT PLEASING			

### Function & condition summary sheet for the Oregon Method

Wetland identification: *FOX HOLLOW*

Function	Assessment Descriptor	Rationale
Wildlife habitat	<i>SOME WILDLIFE</i>	<i>SOME ADJACENT HABITAT WITHIN 1-MILE OF SITE</i>
Fish habitat	<i>DEGRADED</i>	<i>STREAM - PIPED; ISOLATED WETLAND</i>
Water quality	<i>DEGRADED</i>	<i>LOW VEG DIVERSITY/STRUCTURE; SMALL ISOLATED WETLAND</i>
Hydrologic control	<i>DEGRADED</i>	<i>SOME SURFACE PONDING, BUT MINIMAL CONNECTION TO SURFACE FLOW; PIPED ADJ STREAM</i>
Sensitivity to future impacts	<i>POTENTIAL</i>	<i>HIGH MODIFICATION/PIPING; AG USES ADJACENT TO WETLAND</i>
Enhancement potential	<i>POTENTIAL</i>	<i>SOME HYDROLOGIC FUNCTION, BUT LACKS NEARBY WILDLIFE HABITAT</i>
Education	<i>NOT APPROPRIATE</i>	<i>- NO PUBLIC ACCESS; DEGRADED FUNCTIONS</i>
Recreation	<i>NOT APPROPRIATE</i>	<i>NO PUBLIC ACCESS; LOW FISH WILDLIFE FUNCTION</i>
Aesthetic quality	<i>NOT PLEASING</i>	<i>LOW VISIBILITY; LOW CONTRAST HIGH DTRACTORS</i>
Narrative description of overall wetland functions and conditions		
<p><i>LOW QUALITY, ISOLATED WETLAND; HIGHLY MANIPULATED FOR AG PURPOSES; LOW INTERSPERSION WITH WETLAND/ UPLAND HABITATS; ADJACENT WILDLIFE HABITAT &gt; 1 MILE AWAY; LIMITED HYDROLOGIC FUNCTIONS.</i></p>		

## Watershed summary sheet for the Oregon Method

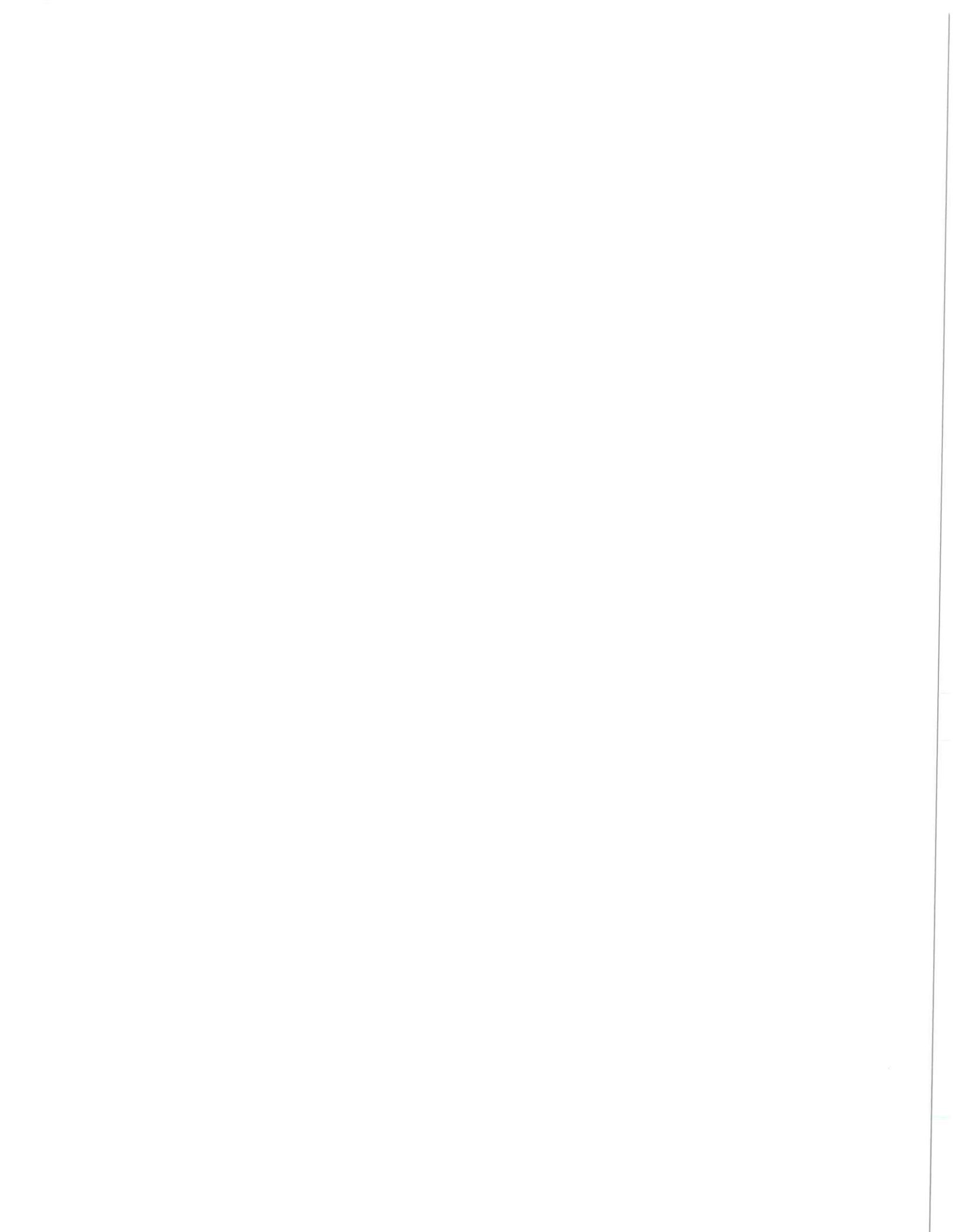
Watershed or community identification:

Characteristic	Description
Physical characteristics of the watershed	ROLLING HILLS ; GRADUAL SLOPE TO SOUTH TOWARDS TUAL RIVER TRIBS LARGE CLEARED AREAS FOR AG
Land uses within the watershed	AGRICULTURE, FORESTRY, FARMING
Water quality	SHEET FLOW ; LOW INTER SPERSION OF STREAM / WETLANDS ; SMALL POND UPSTREAM OF SITE
Biological characteristics of the watershed	ISOLATED UPLAND MIX FOREST HABITAT BTW LARGE CLEARED AG TRACTS CONTRIBUTES HYDROLOGICALLY TO ROCK CK / TUAL RIVER
<b>Narrative summary of watershed description</b>	
SEE REPORT.	



**APPENDIX C – WILDLIFE HABITAT ASSESSMENT**

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# Upland Wildlife Habitat Assessment

<u>2/2/13</u>	<u>Fox Hollow</u>		
UNIT NO.	LOCATION	SQ. FT.	SCORE
COMMENTS: <u>Upland Edge along isolated wetland</u>			
<u>Open Pasture Edge Driveway; Stable/barn - south</u>			

COMPONENT		DEGREE			SCORE	COMMENTS
FOOD	Variety	LOW 0	MEDIUM 5	HIGH 11	3	Pasture
	Quantity & Seasonality	NONE 0	LIMITED 5	YEAR AROUND 11	3	
	Proximity to Forest	NEAR 0	NEARBY 5	IMMEDIATELY ADJACENT 11	3	Decid trees along driveway
COVER	Structural Diversity	LOW 0	MEDIUM 5	HIGH 11	2	Pasture; few tree/shrub
	Variety	LOW 0	MEDIUM 5	HIGH 11	2	
	Nesting	LOW 0	MEDIUM 4	HIGH 8	3	
	Escape	LOW 0	MEDIUM 4	HIGH 8	3	
	Seasonality	NONE 0	LIMITED 4	YEAR AROUND 8	2	Pasture "monocult" of non native grass sp

\* Existing    \*\* Enhancement Potential

ADDITIONAL VALUE						
DISTURBANCE	PHYSICAL	PERMANENT 0	TEMPORARY 7	UNDISTURBED 4	1	drain tile/flowing
	HUMAN	HIGH 0	MEDIUM 7	LOW 4	1	Active horse/stable
INTERSPERSION		LOW 0	MEDIUM 4	HIGH 9	2	Cleared - pasture
UNIQUE FEATURES 0 - 4		WILDLIFE FLORA SCENIC	RARIETY OF HABITAT TYPE EDUCATIONAL POTENTIAL		1	- open field winter forage migration



CITY OF  
**PORTLAND, OREGON**  
BUREAU OF PLANNING

Developed with the Assistance of  
 Mike Houch-Audubon Society  
 Ralph Rogers-U.S. Army Corps of Engineers  
 Dennis Peters-U.S. Fish & Wildlife Service  
 Diana Hwang-U.S. Fish & Wildlife Service  
 Gene Herb-Oregon Dept. of Fish & Game  
 Jack Bennett-Wetlands Conservancy

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City Of Portland

Goal 5 Study

Natural Areas Inventory Field Notes

LOCATION: Fox Hollow

OBSERVER: JD/KR

DATE: 2/21/13

WEATHER:

Precipitation (yes, no, type) - Yes - lt. rain (<0.001)

Wind - 14 - SW

Percent Cloud Cover - 100%

Temperature - 45°

PHYSICAL PARAMETERS:

General Topography - gradual slope Pasture, rolling hills N/E of site

Degree and orientation of slope - 180° S →

Water Features (pond, lake, stream stagnant, etc...) - remnant wetland (PEM)

Percent Of Site Inundated By Water - 1-2%

Major Structures, Roads - Driveway gravel NE → S

Born/stables in south end

VEGETATION:

Description of vegetation types including species list, communities, percent canopy closure (tree, shrub, herb), number and size of snags, seral stage, general health and vitality; percent open water/percent emergent vegetation at inundated areas.

- 0% Canopy in most of site
- Pasture w/ 3-5% Hard trees / Poplar / ASDO - south end
- Open water - altered cul drain tile / old pond filled

## WILDLIFE:

Species Observed (herps, fish, birds, mammals) -

④ AMRO	GBHE - Hyower	EUST
RTHA	AMCR - "	
SLSA	NOFL	
SOSP	AMKE	
	GCSP	
	DESU	

④ Dom spp seen.

Species not observed but known to be present, and source of information. -

WEBL - boxes on adj prop to E

General description of habitat function (food sources, roosting, perching, nesting, etc...). -

Seasonal w/SP forage - geese/ducks

NO DW

w/No/No/No/No - food sources for raptors

## HUMAN USE:

List human uses, and use by domestic animals; proximity to residential area. Discuss compatibility and conflicts with natural resources. Interspersion with other natural areas.

Stable/Barn - Active use

Obstade Boursz - main Pasture

Horse pasture - highly grazed/muddy

Land use map:

- Pasture W + S of site
- Forest N
- Vinyard E

MANAGEMENT/POTENTIAL:

A brief statement on enhancement, maintenance or compatible uses and development

ADDITIONAL COMMENTS:

Unique Features, Rare, Threatened Species -

SKETCH OF SITE:

Observation points, different vegetation types, and water. -

