

EXHIBIT 12
NATURAL RESOURCES ASSESSMENT

NATURAL RESOURCE ASSESSMENT
WEST HILLS DEVELOPMENT: ARBOR VILLAGE NO. 9 PROPERTY

Prepared for

West Hills Development
735 Southwest 158th Avenue
Beaverton, Oregon 97006

Prepared by

Anchor QEA, LLC
6650 Southwest Redwood Lane, Suite 333
Portland, Oregon 97224

November 2015

CLEAN WATER SERVICES
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LIST OF ACRONYMS AND ABBREVIATIONS

CWS	Clean Water Services
DSL	Oregon Department of State Lands
HGM	hydrogeomorphic
NGVD29	National Geodetic Vertical Datum of 1929
NRA	natural resource assessment
PEM	palustrine emergent
PFO	palustrine forested
PSS	palustrine scrub-shrub
R&O 07-20	<i>Design and Construction Standards for Sanitary Sewer and Surface Water Management</i> , June 2007
SPL	Service Provider Letter
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

1 INTRODUCTION

Anchor QEA, LLC, was retained by West Hills Development to perform a natural resource assessment (NRA) for the Arbor Village No. 9 property (study area) in preparation for future residential housing developments. The study area is located in Banks, Washington County, Oregon (Figures 1 and 2).

City/County/State:	Banks, Washington County, Oregon
General Location:	On the north side of Oregon State Highway 6 (NW Wilson River Highway) and south of NW Buckshire Street
PLSS:	SW quarter of Section 31, Township 2 North, Range 3 West
Tax Lot:	2N331CD11400 (project site)
Latitude/Longitude:	45.6093528 / -123.105061
Street Address:	No address/residence
Approximate Area:	8.36 acres
Zoning:	Industrial (I) – proposing to rezone Single Family Residential, 5 units per acre (R-5)

This NRA is prepared in accordance with the requirements of Chapter 3 of Clean Water Services' (CWS') June 2007 *Design and Construction Standards for Sanitary Sewer and Surface Water Management* (CWS 2007), which is hereafter referred to as R&O 07-20. As required by Section 3.02.2(c) of R&O 07-20, this report includes a Standard Site Assessment. In accordance with Section 3.013.3 of R&O 07-20, the following information is provided:

- A Sensitive Areas Certification form
- A description of the proposed project, existing study area, and surrounding land use
- A wetland delineation report of water quality sensitive areas (Sensitive Areas) both on and within 200 feet of the project site prepared in accordance with the Oregon Department of State Lands (DSL) and U.S. Army Corps of Engineers (USACE) and Section 3.14 of R&O 07-20 (Appendix A)
- Vegetated corridor sample points (Appendix B)
- A determination, mapping, and description of each vegetated corridor condition around these Sensitive Areas (in accordance with R&O 07-20)
- Photographs of the study area and vegetated corridors (Appendix C)

- A determination of potential project encroachments into sensitive areas and associated vegetated corridors both on and within 200 feet of the project site
- A project figure set with the following maps:
 - Site location map (Figure 1) and tax lot map (Figure 2)
 - Existing conditions map (Figures 3a and 3b)
 - Proposed development and impacts map (Figures 4a and 4b)
 - Site overview map (Figure 5)

In accordance with Section 3.07.4 of R&O 07-20 and as required for submission of a Tier 2 assessment, the following additional information is provided:

- A description of why the encroachment is needed, including a description of rejected alternatives that would result in less encroachment
- A functional assessment report (Appendix D), as described in Section 3.14.7 of R&O 07-20, using methodology outlined in DSL's hydrogeomorphic (HGM) approach of assessment for wetland and riparian functions (Adamus 2001)

This report documents the investigation, best professional judgment, and conclusions of Anchor QEA. It should be used for planning purposes only until verified in writing by CWS through the issuance of a Service Provider Letter (SPL).

2 PROJECT DESCRIPTION

The project would add 38 housing units to the existing Arbor Village residential subdivision within the City of Banks, Washington County, Oregon, to meet projected housing demand in this area at a density consistent with zoning designations. The proposed development (Arbor Village No. 9) would include 38 lots for detached single-family homes, an extension of an existing neighborhood street (NW Ashton Drive), an addition of a new neighborhood street, an area of public open space, and the infrastructure required to support the development.

3 GENERAL SITE DESCRIPTION

The study area is situated in the Prairie Terraces sub-region of the Willamette Valley ecoregion (Thorson et al. 2003) and lies within the western portion of the Tualatin River

Valley. The topography of the study area is generally level to gently sloping from north to south, with a 4- to 5-foot fill slope running through the southeastern quarter of the project site. Elevations range from approximately 205 feet National Geodetic Vertical Datum of 1929 (NGVD29) along the northern perimeter of the project site to 191 feet NGVD29 at the south-central property boundary (Figures 3a and 3b). Hydrologically, the study area is located within the Lower East Fork Dairy Creek watershed (HUC12 170900100305) in the Tualatin sub-basin (USGS 2015).

3.1 Existing Site Conditions

3.1.1 Site Location

The project site comprises one tax lot (2N331CD11400) located north of Oregon State Highway 6, south of NW Buckshire Street, and west of the Spokane, Portland & Seattle/Port of Tillamook Bay Railroad line in Banks, Washington County, Oregon (Figures 1 and 2). The study area includes the project site plus a 200-foot-wide corridor around its perimeter.

3.1.2 Current Site Description

No buildings or paved roadways are present on the project site. Land use is a mixture of stormwater treatment and undeveloped areas (Figures 3a and 3b). About three-quarters of the site is covered by weedy herbaceous vegetation that is periodically mowed and crossed by multiple dirt and gravel access roads. A CWS water quality pond surrounded by a 4-foot chain-link fence lies in the center of the project site. This pond receives piped stormwater from the existing Arbor Village Development both from a pipe at its north end and from a CWS water quality swale located along the southwest portion of the project site. Water discharges from the pond through two concrete culverts that drain into an emergent/scrub-shrub wetland located immediately to the east of the pond. A narrow corridor of mixed conifer and deciduous forest lies along the southern property boundary in association with the Oregon State Highway 6 road embankment. A narrow band of deciduous forest also lies along the outer eastern property boundary adjacent to the railroad tracks.

3.1.3 Surrounding Land Use

Land use to the north and west of the project site is medium-density residential housing (Arbor Village Development). The Spokane, Portland & Seattle/Port of Tillamook Bay Railroad line borders the eastern boundary of the project site, and a steep road embankment and Oregon State Highway 6 border the southern boundary. Agricultural and rural residential housing extends to the south and east of the project site.

4 NATURAL RESOURCE ASSESSMENT

This NRA is prepared in compliance with Chapter 3 of the R&O 07-20. Vegetated corridor conditions and corridor widths were determined in accordance with Chapter 3 guidance. Corridor conditions were determined by assessing plant communities as good, marginal, or degraded using CWS standards (Section 3.14.2 of the R&O 07-20).

4.1 Delineation of Water Quality Sensitive Areas

Field visits to delineate water quality sensitive areas both on and adjacent to the project site were performed on July 24 and September 11, 2013; February 13 and 16, 2015; and April 13 and 17, 2015. The delineation was conducted in accordance with DSL and USACE procedures for wetland delineations. Two non-wetland other waters (CWS Water Quality Swale and CWS Water Quality Pond) and six potentially jurisdictional wetlands (Wetlands A through F) totaling 71,177 square feet or 1.634 acres were delineated on the study area (Figures 3a and 3b). Boundaries and data plot locations were staked in the field and professionally land surveyed by Otak, Inc., to an accuracy of 0.1 foot and then plotted on a base map using AutoCAD (Appendix A). Table 1 summarizes water quality sensitive areas and classifications, and the wetland delineation report and DSL concurrence letter are provided in Appendix A. According to DSL concurrence, Wetland A, Wetland F, and the CWS water quality pond (totaling 63,510 square feet or 1.458 acres) are subject to the permit requirements of the state Removal-Fill Law. Wetlands B through E and the CWS water quality swale were determined by the state to be non-jurisdictional. At the time of this report, USACE had not yet issued their jurisdictional determination for the project site.

Table 1
Water Quality Sensitive Areas Delineated on Project Site

Water Quality Sensitive Areas	Description	Classification		On-site Area	
		Cowardin 1979	HGM (Adamus 2001)	Acres	Square Feet
CWS water quality swale ¹	Constructed Wetland; Vegetated Open Channel	N/A	N/A	0.082	3,572
CWS water quality pond ¹	Constructed Wetland; Stormwater Treatment Pond	N/A	N/A	0.749	32,626
Wetland A	PEM/PSS wetland	PEM/PSS	Slope/flats	0.708	30,840
Wetland B	PEM wetland	PEM	Slope/flats	0.030	1,307
Wetland C	PEM wetland	PEM	Slope/flats	0.007	305
Wetland D	PEM wetland	PEM	Slope/flats	0.005	218
Wetland E	PEM wetland	PEM	Slope/flats	0.052	2,265
Wetland F ²	Culvert and Drainage Ditch	PFO	Slope/flats	0.001	44
Total area of wetlands				1.634	71,177
Total area of state jurisdictional wetlands				1.458	63,510
Total area of CWS water quality sensitive areas³				0.803	34,979

Notes:

1. Not classified as CWS water quality sensitive areas per CWS File #08-002985.
 2. The majority of this wetland is located off the project site in the railroad corridor; calculations shown are for the on-site portion.
 3. CWS water quality sensitive areas includes Wetlands A through F.
- CWS = Clean Water Services
HGM = hydrogeomorphic
N/A = not applicable
PEM = palustrine emergent
PFO = palustrine forested
PSS = palustrine scrub-shrub

4.1.1 Description of Water Quality Swale

The 3,572-square-foot (0.082-acre) CWS water quality swale runs west to east across the southwestern portion of the project site (Figure 3a). It consists of an excavated grassy channel that carries stormwater flow from two culverts located in the southwestern corner of the project site to the CWS water quality pond in the south-central portion of the site. The water quality swale is classified as a palustrine emergent (PEM) wetland under the U.S.

Fish and Wildlife Service (USFWS) *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) and as a slope/flats wetland under the Oregon HGM classification system (Adamus 2001).

Based upon R&O 07-20 standards, the CWS water quality swale is not classified as CWS water quality sensitive area per CWS File #08-002985.

4.1.2 Description of Water Quality Pond

The CWS water quality pond is located in the south-central portion of the study area and surrounded by a 4-foot chain-link fence (Figures 3a and 3b). The area inside the fence is 32,626 square feet (0.749 acre). The pond consists of a partially excavated area impounded by an elevated earthen berm constructed on its eastern and southern boundaries. The water quality pond is classified as a PEM wetland under the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) and as a slope/flats wetland under the Oregon HGM classification system (Adamus 2001).

Based upon R&O 07-20 standards, the CWS water quality pond is not classified as a CWS water quality sensitive area per CWS File #08-002985.

4.1.3 Description of Water Quality Sensitive Area: Wetland A

Wetland A is a 30,840-square foot (0.708-acre) wetland that lies adjacent to the CWS water quality pond in the southeastern portion of the project site (Figure 3b). It receives treated water and overflows from the water quality pond through two culverts located in the southeastern portion of the pond. Wetland A drains into a 36-inch culvert under Oregon State Highway 6 located just offsite to the south. This culvert discharges to an offsite wetland on the south side of the highway that eventually drains to East Fork Dairy Creek. Wetland A is classified as a PEM/palustrine scrub-shrub (PSS) wetland under the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) and a slope/flats wetland under the Oregon HGM classification system (Adamus 2001).

Based upon R&O 07-20 standards, Wetland A is classified as a CWS water quality sensitive area.

4.1.4 Description of Water Quality Sensitive Areas: Wetlands B through E

Wetlands B through E are all located in the eastern and western portions of the project site in scraped or rutted areas on fill material that was placed on the site sometime between 1997 and 2000 (Figures 3a and 3b). These wetlands are aggregately described due to similarities in HGM position, vegetation, soil, and hydrological characteristics. All four of these wetlands are classified as PEM wetlands under the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) and as slope/flats wetlands under the Oregon HGM classification system (Adamus 2001). Each wetland is smaller than 2,300 square feet (0.053 acres) in size (Table 1), and they appear to have been created by soil compaction from vehicles during site maintenance activities and by recreational vehicle (e.g., ATV) usage (i.e., tire ruts). Wetlands B through D were determined to be hydrologically isolated from other wetlands and waterbodies. According to the DSL, Wetlands B through E are exempt per Oregon Administrative Rule 141-085-0515 and therefore not subject to state permit requirements (DSL Concurrence Letter dated August 3, 2015; Appendix A). At the writing of this report, USACE had yet to make a decision on the jurisdictional status of Wetlands B through E under Section 404 of the Clean Water Act.

Although Wetlands B through E were considered non-jurisdictional by DSL, for this NRA they are considered to be waters of the United States by USACE. As such, in accordance with R&O 07-20 standards, Wetlands B through E are classified as CWS water quality sensitive areas.

4.1.5 Description of Water Quality Sensitive Area: Wetland F

Wetland F is located near the southeastern corner of the project site and consists of a short section of open ditch adjacent to the railroad corridor (Figure 3b). Erosion has created a shallow basin around the ditch channel that supports a small created wetland that contains a dense thicket of Oregon ash trees. Most of this feature lies outside of the project site boundary, with only 44 square feet (0.001 acre) located on the project site. Wetland F is classified as PFO wetland under the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). Under the Oregon HGM classification system (Adamus 2001), this wetland is classified as slope/flats.

Based upon R&O 07-20 standards, Wetland F is classified as a CWS water quality sensitive area.

4.2 Vegetated Corridor Width Determinations

Using Table 3-1 from Chapter 3 of the R&O 07-20, the vegetated corridor widths from the edge of the water quality sensitive area boundaries were determined to be 50 feet for Wetlands A and F and 25 feet for Wetlands B through E. The CWS water quality pond and CWS water quality swale are not considered water quality sensitive areas per Chapter 3 of the R&O 07-20 and do not require vegetated corridors. Table 2 summarizes criteria used to determine vegetated corridor widths and subsequent area calculations.

Table 2
Existing On-site Vegetated Corridor Calculations by Water Quality Sensitive Area

Water Quality Sensitive Area	Sensitive Area Type	Slope	Vegetated Corridor Width (feet)	Total On-site Vegetated Corridor Area	
				Acres	Square Feet
Wetland A	≥0.5 acre; not isolated	<25%	50	0.606	26,415
Wetland B	<0.5 acre; isolated	<25%	25	0.135	5,890
Wetland C	<0.5 acre; isolated	<25%	25	0.088	3,824
Wetland D	<0.5 acre; isolated	<25%	25	0.090	3,919
Wetland E	<0.5 acre; isolated	<25%	25	0.160	6,991
Wetland F ¹	<0.5 acre; not isolated	<25%	50	0.094	4,109
Total on-site vegetated corridor area				1.174	51,148

Note:

1. The majority of Wetland F is located off the project site in the railroad corridor; calculations shown are for the on-site portion of the wetland.

4.3 Determination of Water Quality Sensitive Areas within 200 Feet of the Project Site

Due to access restrictions of the remaining adjacent properties, other water quality sensitive areas (wetlands, springs, streams, or ponds) within 200 feet of the project site were assessed based on aerial imagery and by using other available resources (National Wetland Inventory, Washington County Significant Natural Resources Inventory Map, and Google Earth

Imagery). Aside from Wetland F, which straddles the eastern site boundary, off-site sensitive areas were not delineated, or surveyed in the field.

Two water quality sensitive areas were found within 200 feet of the project site: Wetland F, and a wetland associated with an unnamed tributary to East Fork Dairy Creek. Wetland F is a small PFO wetland that is located off site along the southeast boundary of the project site, as previously discussed in Section 4.1.5. The potential wetland and an unnamed tributary to East Fork Dairy Creek are located to the south of the project site on the other side of Oregon State Highway 6. In accordance with the requirements of R&O 07-20, both of these areas would require a 50-foot vegetated corridor. Of these two areas, only the vegetated corridor of Wetland F would extend onto the project site.

4.4 Vegetated Corridor Conditions

On-site vegetated corridors were classified as either degraded (40,191 square feet/0.923 acre) or marginal (10,957 square feet/0.252 acre) in accordance with the guidance provided in Section 3.03.3 of R&O 07-20 (Figures 3a and 3b). Vegetated corridor field data sheets are contained in Appendix B. Table 3 shows the locations and areas of the two vegetated corridor conditions associated with the on-site water quality sensitive areas and the applied CWS vegetated corridor standards in accordance with Table 3-3 of R&O 07-20. Photographs are included in Appendix C.

Table 3
Existing On-Site Vegetated Corridor Conditions by CWS Standards

Vegetative Corridor Location	CWS Vegetated Corridor Condition	Vegetated Corridor Area	
		Acres	Square Feet
Northwest corridor of Wetland A and Wetlands B, C, D, and E corridors	Degraded	0.923	40,191
Northeast corridor of Wetland A and Wetland F corridor	Marginal	0.252	10,957
Total on-site vegetated corridor area		1.174	51,148

Note:
CWS = Clean Water Services

4.4.1 Degraded Vegetated Corridors

Degraded vegetated corridors border Wetlands B, C, D, and E and the northwest boundary of Wetland A. The vegetated corridor plant community bordering the northwest corner of Wetland A consists almost entirely of meadow foxtail (*Alopecurus pratensis*) along with white clover (*Trifolium repens*) and trace amounts of shiny geranium (*Geranium lucidum*) and hairy cat's ear (*Hypochaeris radicata*). The vegetated corridors around Wetlands B, C, and E predominantly contain colonial bentgrass (*Agrostis tenuis*), with meadow foxtail, common velvet grass (*Holcus lanatus*), white clover, hairy cat's ear, and shiny geranium interspersed. Trace amounts of fescue (*Festuca* sp.), Queen Anne's lace (*Daucus carota*), common chicory (*Cichorium intybus*), and vetch (*Vicia* sp.) were also found around these wetlands. Fescue grasses dominate the corridor around Wetland D, along with English plantain (*Plantago lanceolata*), bluegrasses (*Poa* sp.), and small amounts of the same graminoids and forbs found in the corridors around Wetlands B, C, and E. Himalayan blackberry (*Rubus armeniacus*) dominates the vegetated corridor surrounding the portions of the northwest boundary of Wetland A and the southwest boundary of Wetland D, with small amounts of Douglas' spiraea (*Spiraea douglasii*) intermingled. The vegetated corridors surrounding these wetlands are determined to be in degraded condition due to the lack of tree canopy and native plant species and, in some areas, near exclusion of native plants by a listed invasive species.

4.4.2 Marginal Vegetated Corridors

The marginal vegetated corridors border the northeast portion of Wetland A and comprise the entire vegetated corridor of Wetland F. The plant community consists of scrub-shrub vegetation that includes cascara buckthorn (*Rhamnus purshiana*), black cottonwood (*Populus trichocarpa*), Nootka rose (*Rosa nutkana*), Douglas' spiraea, and plum (*Prunus* spp.). This corridor also contains a few Pacific serviceberry (*Amelanchier alnifolia*) and Oregon ash (*Fraxinus latifolia*) trees. Meadow foxtail dominates the herbaceous layer, with small quantities of Queen Anne's lace, English plantain, shiny geranium, bluegrasses, and Himalayan blackberry interspersed. These vegetated corridors are determined to be in marginal condition due to sufficient (between 26 to 50%) tree canopy and native shrub cover that provide some diversity and vertical stratification within the plant community.

5 PROPOSED ENCROACHMENTS AND IMPACTS TO VEGETATED CORRIDORS

Under the proposed development plan, Wetlands B through E and their associated vegetated corridors would be completely eliminated to construct residential streets and residential building lots (Figures 4a and 4b). According to DSL concurrence, Wetlands B through E and the CWS water quality swale were determined to be non-jurisdictional and therefore not subject to the permit requirements of the state Removal-Fill Law. At the time of this writing, a jurisdictional determination from USACE had not yet been issued. If Wetlands B through E are determined to be jurisdictional by USACE, the applicant will obtain a Clean Water Act Section 404 Permit to fill these areas, with wetland mitigation achieved through the purchase of credits from an approved mitigation bank in the Tualatin Watershed. Under such circumstances, mitigation for the vegetated corridors associated with these wetlands would also be satisfied by this mitigation credit purchase.

For the remaining wetlands, a total of 2,300 square feet (0.053 acre) of vegetated corridor would be permanently impacted during site development. Temporary impacts are not proposed for the current development and the standard 5-foot temporary construction setbacks are not required because the retaining walls would be constructed from the lot side and not in the vegetated corridors. The permanent impacts would be to a portion of the degraded vegetated corridor along the northwest boundary of Wetland A and would be associated with activities related to construction of a neighborhood access road and associated grading and open space configuration. Permanent impacts would be mitigated for at a slightly greater than 1:1 ratio using replacement mitigation in accordance with Section 3.08 of the R&O 07-20. On-site mitigation would be used to compensate for proposed permanent impacts to the degraded vegetated corridor of Wetland A.

A summary of the vegetated corridor impacts is contained in Table 4. Proposed impacts are shown in Figures 4a and 4b and site overview Figure 5, and enhancements for encroachments and impacts are discussed in Section 7.

Table 4
On-site Vegetated Corridor Impact Area Calculations

Water Quality Sensitive Area	Vegetated Corridor Condition	Temporary Impact to Vegetated Corridor Area		Permanent Impact to Vegetated Corridor Area ¹		Total Impacts on Vegetated Corridor Area	
		Acres	Square Feet	Acres	Square Feet	Acres	Square Feet
Wetland A	Degraded	0.0	0.0	0.053	2,300	0.053	2,300
Total area		0.0	0.0	0.053	2,300	0.053	2,300

Notes:

1. Permanent impacts would be mitigated at on-site locations.

6 ALTERNATIVES ANALYSIS

The following section cites the CWS R&O 07-20 guidelines specific to Alternatives Analysis requirements.

3.07.4. b.1. Description of why the encroachment is needed including rejected alternatives that would result in less encroachment

Encroachment into on-site water quality sensitive areas and degraded vegetated corridors is needed to provide a well-designed and economically viable residential development and the required associated infrastructure (e.g., local streets, sidewalks, utilities, open space).

Encroachment is required to meet density criteria while also providing services to the residential development. Permanent impacts to water quality sensitive areas would occur only to the Wetlands B through E that were determined to be non-jurisdictional under the Oregon Removal-Fill Law by DSL but considered to be jurisdictional under Section 404 of the Clean Water Act by USACE. Required services and considerations are discussed in the following paragraphs.

Siting and design criteria for the proposed alternative include the following:

- *Create a housing development that meets density requirements*
 - The proposed development would require the complete removal of Wetlands B through E and their associated vegetated corridors. These wetlands were

determined to be non-jurisdictional by DSL but considered to be jurisdictional by USACE. The results of a functional assessment (Appendix D) performed for the wetlands show these wetlands have a moderately low functionality. They were created after the site was filled and leveled and are also highly disturbed by current activities related to maintenance and recreational vehicle use. Because these wetlands and associated vegetated corridors are being removed, with wetland mitigation achieved through the purchase of credits from an approved mitigation bank in the Tualatin Watershed should USACE consider them jurisdictional, they are not considered further in the alternatives analysis.

- *Create streets to provide neighborhood access*
 - The vegetated corridor impacts that are proposed are associated with construction of neighborhood access roads. Two neighborhood roads are planned through the site to provide two travel lanes, planter strips, and sidewalks. The existing street NW Ashton Drive would continue from the current development located to the north to provide neighborhood access to the Arbor Village No. 9 residential housing. A new connector street would run westward off NW Ashton Drive to provide access to houses in the west side of the proposed development. No other impacts to vegetated corridors are proposed. The new access road would be placed in such a manner as to reduce impacts to the large water quality sensitive area (Wetland A) and associated vegetated corridor as much as possible.
- *Create neighborhood open space*
 - Construction of a neighborhood open space promotes a higher quality living environment for the proposed residential development. The open space would be in a central location and at a reasonable distance from all residential units.

The following alternative was considered to minimize impacts to vegetated corridors. Appendix E includes a sketch of the alternative considered in completing this analysis. It was rejected in favor of the currently submitted proposal.

Alternative 1: No Impact Development Alternative – Rejected

The No Impact Development Alternative was evaluated for feasibility and balancing with West Hills Development's (the applicant's) purpose and need, and the City of Banks and

Washington County master plan development. In this alternative, Street B is moved to the north to completely avoid impacts to the vegetated corridor around Wetland A; however, this makes the lots on the north side of the roadway too shallow for housing development standards and 5 lots are lost. Therefore, this space becomes the open space in place of the open space planned in the current development. To avoid impacts to the vegetated corridor for the existing pond access, the access road would have to be relocated to the west side of the pond off of Street B, resulting in further lot reduction. Relocating the access road also makes it more difficult to reach the pond storm structures located on the west side of the pond. Total avoidance of the vegetated corridor would result in a loss of 8 lots which does not meet density housing requirements, and would create a less ideal access road to the water quality pond. Therefore, this alternative was rejected in favor of the current proposed development.

3.07.4. c.1. The proposed encroachment area is mitigated in accordance with Section 3.08.

On-site mitigation would replace the loss of existing degraded vegetated corridor around Wetland A through enhancement of areas that are rated in degraded condition so that they are on a trajectory to a good rating under CWS R&O 07-20 criteria. The mitigation would expand the overall vegetative corridor and create a wider and more effective protective zone for the water quality sensitive areas. Further, replacement of the vegetated corridor would exceed the 1:1 ratio of replacement to impacted vegetated corridors required under Section 3.08.2.

3.07.4. c.2. The replacement mitigation protects the functions and values of the Vegetated Corridor and Sensitive Area.

As noted in the previous section, enhancement of degraded areas toward good condition protects the function of the water quality sensitive areas and preserves their value. Additionally, mitigation through enhancement as a replacement of the lost vegetated corridor associated with road construction and designated neighborhood open space would exchange degraded corridor for good corridor.

3.07.4. c.3. Enhancement of the replacement area, if not already in Good condition, and either the remaining Vegetated Corridor on the site or the first 50 feet of width closest to the resource, whichever is less, to a Good corridor condition.

For the remaining existing on-site vegetated corridors, approximately 37,891 square feet (0.867 acre) of degraded vegetated corridor and approximately 10,957 square feet (0.252 acre) of marginal vegetated corridor would be enhanced to good condition. For the created mitigation areas for replacement vegetated corridors, approximately 3,300 square feet (0.076 acre) of area would be enhanced to good condition.

3.07.4. c.5. Location of the development and site planning minimizes incursion into the Vegetated Corridor.

Lot configuration and siting were designed to minimize impacts to vegetated corridors around water quality sensitive areas. The siting of the neighborhood open space, street, and associated grading impacts only degraded on-site vegetated corridors. Alternatives with less impacts would not meet housing density requirements or provide practical access to the CWS water quality pond structures. In total, site planning impacts minimally disrupt the integrity of the vegetated corridor around Wetland A.

3.07.4. c.6. No practicable alternative to the location of the development exists that will not disturb the Sensitive Area or Vegetated Corridor.

All feasible efforts to minimize impacts to the on-site vegetated corridors were made. A summary of efforts is included as follows:

- One new road would encroach on the vegetated corridor; however, this was sited to impact degraded corridors only and avoid water quality sensitive areas as much as possible, as the road is required for neighborhood access.
- The following impacts to vegetated corridors are allowable uses under CWS Chapter 3 regulations (access roads, stormwater ponds, and stormwater conveyance improvements):
 - The new road and associated grading is needed in order to access the western end of the future development and would be located in an area where the vegetated corridor is degraded.

- The open space would improve the neighborhood environment and is located in a central area for neighborhood access.

The encroachments due to the road and associated grading and neighborhood open space are necessitated by the need for neighborhood access and to create a higher quality of living. The locations were chosen to have as little impact as possible while maintaining zoning requirements.

3.07.4. c.7. The proposed encroachment provides public benefits.

The public would benefit from the improvement of overall water quality through the enhancement of degraded condition vegetated corridors to good condition and the enhancement of additional (net positive acreage) riparian vegetated corridor beyond the minimum requirements. If required by USACE, impacts to water quality sensitive areas would be mitigated at an approved mitigation bank in the Tualatin River basin in accordance with Section 404/Removal-Fill Permit process. The purchased mitigation credits would provide public benefit to water quality in the Tualatin River Basin.

7 PROPOSED ON-SITE MITIGATION OF VEGETATED CORRIDORS

On-site mitigation through creation of vegetated corridors is proposed for permanent impacts to on-site vegetated corridors and exceeds a 1:1 ratio, resulting in a net gain of 1,100 square feet or 0.023 acre of vegetated corridor. Mitigation areas are shown in Figure 4b. Table 5 shows the mitigation area acreages and strategies for implementation.

Table 5
Mitigation Area Calculations for Permanent Impacts (Created Vegetated Corridor)

Vegetated Corridor Mitigation Location	CWS Rating	Mitigation Strategy ¹	On-site Mitigation Area	
			Acres	Square Feet
Northwest portion of Wetland A	Degraded	Replacement through enhancement of created vegetated corridor area	0.035	1,511
Northeast portion of Wetland A	Degraded	Replacement through enhancement of created vegetated corridor area	0.041	1,789
Total vegetated corridor creation			0.076	3,300
Total vegetated corridor permanent impacts requiring mitigation			0.053	2,300
Net gain in mitigation credits			0.023	1,100

Note:

1. Mitigation is for permanent loss as a result of corridor impacts.

8 VEGETATED CORRIDOR ENHANCEMENT

Existing degraded vegetated corridors, along with created mitigation areas, would be enhanced through planting to provide a vegetated corridor with sufficient vegetation diversity and density to place these areas on a trajectory to a good rating under CWS R&O 07-20 criteria. On-site vegetated corridors that are rated as degraded would be planted at full CWS planting densities of 0.01 tree per square foot and 0.05 shrub per square foot; marginal areas would be infill planted at a discounted planting rate of 0.005 tree per square foot and 0.025 shrub per square foot. Enhancement planting acreages are summarized in Table 6.

Table 6
Enhancement Planting Area Calculations

Description	Planting Requirement	Area	
		Acres	Square Feet
Existing Unimpacted Vegetated Corridors Rated as Degraded	Enhancement	0.867	37,891
Existing Unimpacted Vegetated Corridors Rated as Marginal	Enhancement	0.252	10,957
Created On-site Mitigation Areas	Enhancement	0.076	3,300
Total enhancement planting area		1.195	52,148

8.1 Site Preparation

Invasive and non-native species would be mowed, cut, and pulled, and follow-up mechanical removal and herbicide would be applied as needed to eradicate any surviving invasive plants. Herbicide spraying would occur only under windless conditions by licensed applicators, and shields would be used to protect adjacent woody plants from overspray or drift.

Site preparation for the planting of native species would include initial mowing and scalping to reduce vegetative competition and improve planting effectiveness and herbicide application. Any bare ground exposed during site preparation would be seeded with native lawn seed at a composition similar to Table 7 or standard seed mix composition to promote re-establishment of the herbaceous layer and minimize the potential for erosion. The seeding, along with natural volunteers, would provide additional species diversity and density and provide competition to help exclude re-colonization by invasive species.

Table 7
Species Proposed for Seeding in the Prepared Vegetated Corridors

Common Name	Scientific Name	Seed Mix (%)	Type of Planted Material
Blue wild rye	<i>Elymus glaucus</i>	30	Seed
Red native fescue	<i>Festuca rubra</i>	40	Seed
California brome	<i>Bromus carinatus</i>	15	Seed
Large leaf lupine	<i>Lupinus polyphyllus</i>	15	Seed

8.2 Proposed Enhancement Planting Plan

This planting plan is developed in accordance with CWS R&O 07-20. Plantings are designed to increase vegetation density and diversity and improve the vegetated corridors as the plantings grow and mature, placing the degraded vegetated corridor on a trajectory to a good rating in accordance with CWS criteria.

The planting plan serves as a guide to mimic natural conditions, and the mix of species to be planted is tailored to the moisture and light conditions of the site. Final species selection would depend on plant availability at the time of installation. A breakdown of the proposed planting effort by cover type and associated plant totals for the vegetated corridor is

presented in Table 8. The planting total for all enhancement areas is calculated to be 841 trees and 4,203 shrubs.

Table 8
Proposed Planting Treatments for Vegetated Corridor Enhancement
Arbor Village No. 9

Scientific Name	Common Name	On Center Spacing (feet)	Plant Numbers ¹
Trees			
CWS Standards			0.005 to 0.01 tree/sf
<i>Alnus rubra</i>	Red alder	7	210
<i>Acer macrophyllum</i>	Big leaf maple	7	168
<i>Pseudotsuga menziesii</i>	Douglas fir	7	210
<i>Prunus emarginata</i>	Bitter Cherry	7	42
<i>Rhamnus purshiana</i>	Cascara	7	42
<i>Thuja plicata</i>	Western red cedar	7	168
Tree subtotal			841
Shrubs			
CWS Standards			0.025 to 0.05 shrub/sf
<i>Amelanchier alnifolia</i>	Serviceberry	4	630
<i>Holodiscus discolor</i>	Oceanspray	4	315
<i>Mahonia nervosa</i>	Cascade Oregon-grape	4	210
<i>Sambucus racemosa</i>	Red elderberry	4	630
<i>Lonicera involucrata</i>	Twinberry	4	420
<i>Oemleria cerasiformis</i>	Indian plum	4	630
<i>Symphoricarpos albus</i>	Snowberry	4	630
<i>Ribes sanguineum</i>	Red flowering currant	4	315
<i>Rosa nutkana</i>	Nootka Rose	4	210
<i>Rosa pisocarpa</i>	Clustered Rose	4	210
Shrub subtotal			4,203
Total Plants			5,043

Notes:

1. On-site vegetated corridors that are rated as degraded would be planted at full CWS planting densities of 0.01 tree per square foot and 0.05 shrub per square foot; marginal areas would be infill planted at a discounted planting rate of 0.005 tree per square foot and 0.025 shrub per square foot. Plants (especially shrubs) should be clumped to mimic natural conditions. Final species quantities dependent upon availability.

sf = square foot

8.3 Planting Guidelines

General guidelines for plant material and their installation are as follows:

- Qualified staff would supervise the planting process. Modifications to the planting plan may occur based on field conditions and the availability of plant material.
- Woody planting would occur in the fall or winter after plant dormancy has commenced (December 1 to March 31).
- Plantings would be bare-root, live stake, and containerized (1-gallon) native plant seedlings, as appropriate, from regional genetic stock. Plastic nursery identification tags would be attached to the stem of each woody planting.
- Tree and shrub seedlings would be a minimum height of 18 inches. Seedlings are typically 1 to 3 years old.
- Local nursery stock would be used to ensure that material has acclimated to local conditions (reducing planting stress) and is genetically compatible with the local area.
- Final plant lists would be contingent upon plant availability. If selected species are unavailable from local nurseries, other genus or species with similar hydrological requirements may be substituted.
- Plantings would be distributed in a random pattern to mimic natural conditions. Grouping or clustering of individual species is appropriate, particularly for shrub species.
- Proposed locations of woody trees and shrubs would be field staked and identified with an approved coding system or by placement of the actual plant material.
- Plant stock would be handled in a manner that would not break, scrape, or twist any portion of the plant. Protect plants at all times from conditions that can damage the plant (e.g., sun, wind, or freezing conditions).
- Excavate plant pits for trees and shrubs would be container stock, width of two times the ball diameter and depth equal to the ball depth, and bare root stock, width of two times the widest diameter of the roots and depth equal to the root system.
- Plants would be placed plumb in the pit, backfill with native soil to the original plant soil line, and tapped solidly around the ball and roots. Water all plants immediately after planting if soil is not saturated to the surface.
- Woody plantings would only be staked if the plant cannot stand alone in a moderate wind. Remove stakes as soon as their support becomes unnecessary.

- Woody plantings would be fertilized with a slow release (8 months), high nitrogen granular fertilizer (21-3-7), with application rates as specified by the manufacturer. Fertilizer would be applied at the base of the plant after the plant pit is backfilled, prior to the application of mulch.
- Woody plantings would be mulched with a minimum of 3 inches of organic matter (e.g., weed-free straw, compost, or bark mulch) to 18 inches in diameter to discourage weed growth, minimize soil erosion, and retain moisture. The mulch must not make contact with the plant stem.
- An appropriate material or treatment to deter wildlife depredation and damage would be considered for woody plants.
- A temporary irrigation system would be installed to water plantings during the late spring/summer/early fall dry season to increase plant survival.

8.4 Site Maintenance

A 2-year maintenance program would be initiated to help ensure enhancement goals are achieved. Maintenance of the planting areas would take place in the summer months following initial planting and would be most aggressive in the first year of native plant establishment. Invasive, non-native vegetation would be controlled by combining methods, including cutting, pulling, and herbicide application to control their re-establishment. Herbicide spraying would occur only under windless conditions, and shields would be used to protect adjacent woody plants from overspray and drift. Aggressive vegetation management would be pursued for the 2-year maintenance period, while native plantings become established. Plants would be replaced if R&O 07-20 success standards for survival (80% of the planting specifications) are not met during the maintenance period. The plant survival rate for the planting areas would most likely be as follows:

- Vegetated corridor mitigation and enhancement: 672 trees (80% of 841 trees planted) and 3,362 shrubs (80% of 4,203 shrubs planted)

Bare ground would be reseeded as needed.

9 SUMMARY

Anchor QEA was retained by West Hills Development to prepare a CWS NRA for the proposed Arbor Village No. 9 property development in Banks, Washington County, Oregon. Eight water quality sensitive areas were identified on-site, totaling 1.634 acres. The CWS Water Quality Swale and CWS Water Quality Pond are man-made stormwater treatment facilities constructed to meet the stormwater requirements of the existing Arbor Village Development and are not CWS water quality sensitive areas per CWS File #08-002985. As such, no vegetated corridors are required around these features. For Wetlands A and F, the vegetated corridor widths were determined to be 50 feet (CWS R&O 07-20 Table 3-1) from the edge of the water quality sensitive areas, and the vegetated corridors for Wetlands B through E were determined to be 25 feet (CWS R&O 07-20 Table 3-1). Wetlands B through E would be eliminated under the proposed development. If the USACE determines these areas to be jurisdictional, they would be mitigated by purchasing credits from an approved mitigation bank in the Tualatin River basin in accordance with Section 404/Removal-Fill Permit process. For the remaining wetlands (Wetlands A and F), there are a total of 51,148 square feet (1.174 acres) of vegetated corridors on-site.

The proposed permanent impacts to degraded vegetated corridors as a result of development were determined to be 2,300 square feet (0.053 acre). On-site mitigation areas totaling 3,300 square feet (0.076 acre) were identified for vegetated corridor creation to replace the losses from the proposed permanent impacts. A net positive gain of 1,100 square feet (0.023 acre) of mitigation through creation of new vegetated corridor exceeds the 1:1 replacement ratio for mitigation of permanent impacts. Additionally, 37,891 square feet (0.867 acre) of on-site vegetated corridor rated as degraded and 10,957 square feet (0.252 acre) of on-site vegetated corridor rated as marginal would be planted on a trajectory to a good rating according to CWS requirements.

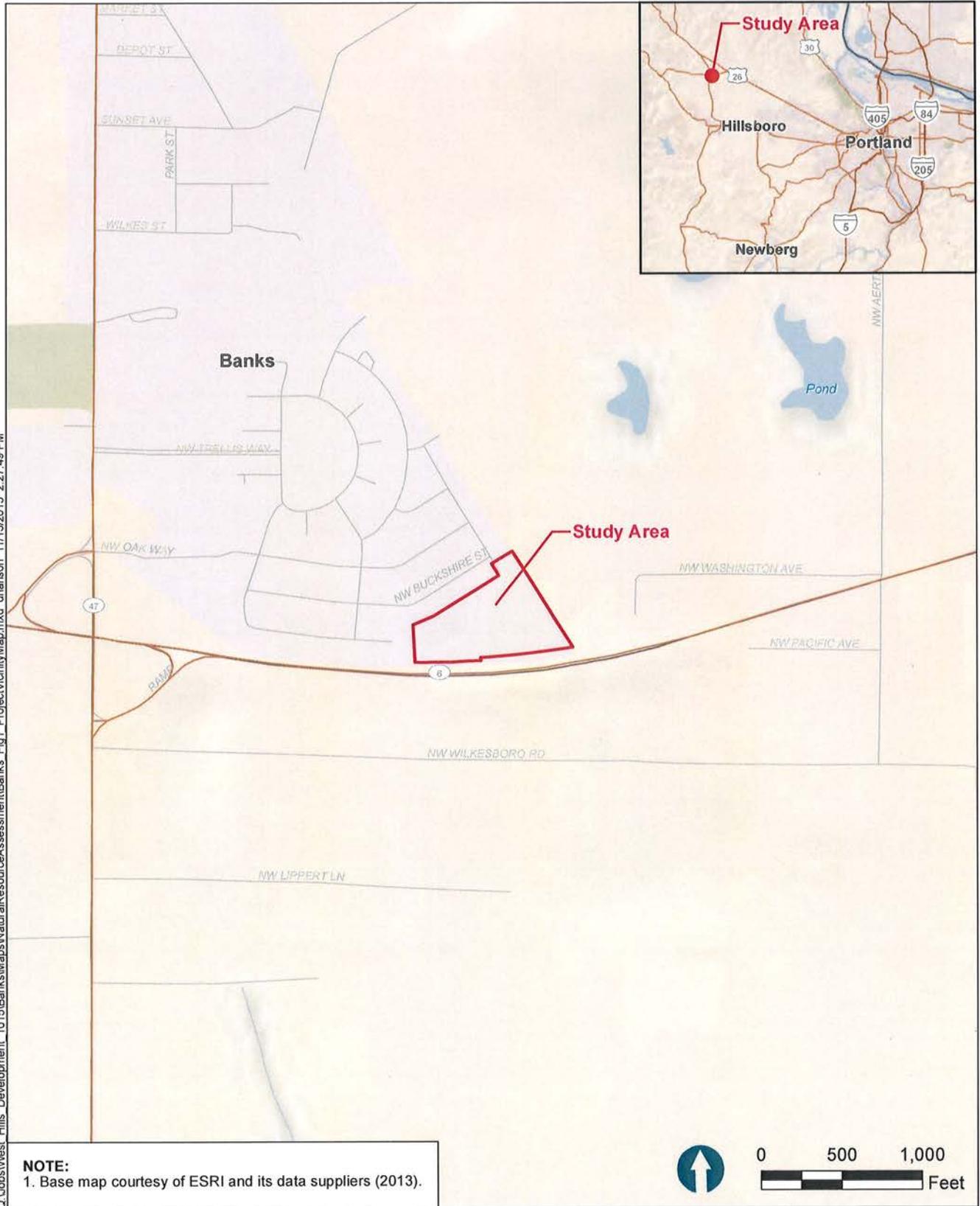
In total, 5,043 trees and shrubs would be planted to enhance and establish vegetated corridors around the two on-site water quality sensitive areas. With this submittal, West Hills Development is requesting the issuance of an SPL by CWS.

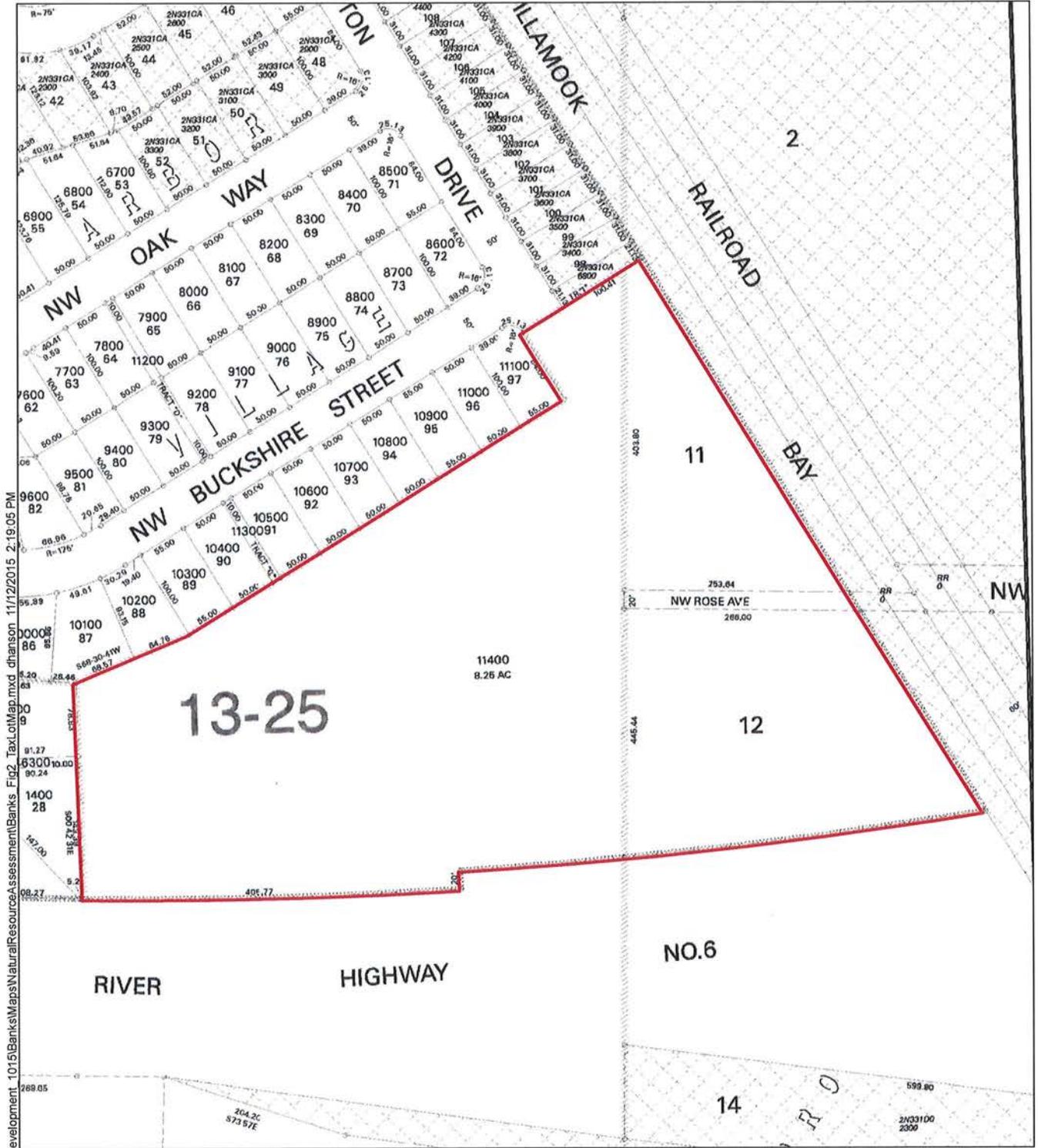
10 REFERENCES

- Adamus, P.R., 2001. *Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and Riparian Sites: Statewide Classification and Profiles*. Oregon Division of State Lands, Salem, Oregon. February 2001.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe, 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Government Printing Office, Washington D.C. December 1979.
- CWS (Clean Water Services), 2007. *Design and Construction Standards for Sanitary Sewer and Surface Water Management*. June 2007.
- Thorson, T.D., S.A. Bryce, D.A. Lammers, A.J. Woods, J.H. Omernik, J. Kagan, D.E. Pater, J.A. Comstock, 2003. *Ecoregions of Oregon* (color poster with map, descriptive text, summary tables and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,500,000).
- USGS, 2015. The National Hydrography Dataset (NHD). Available from: <http://nhd.usgs.gov/data.html>. Date accessed: September 17, 2015.

FIGURES

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Study Area Boundary

NOTE:
 1. Tax lot map acquired from Washington County.

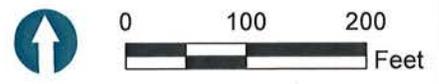
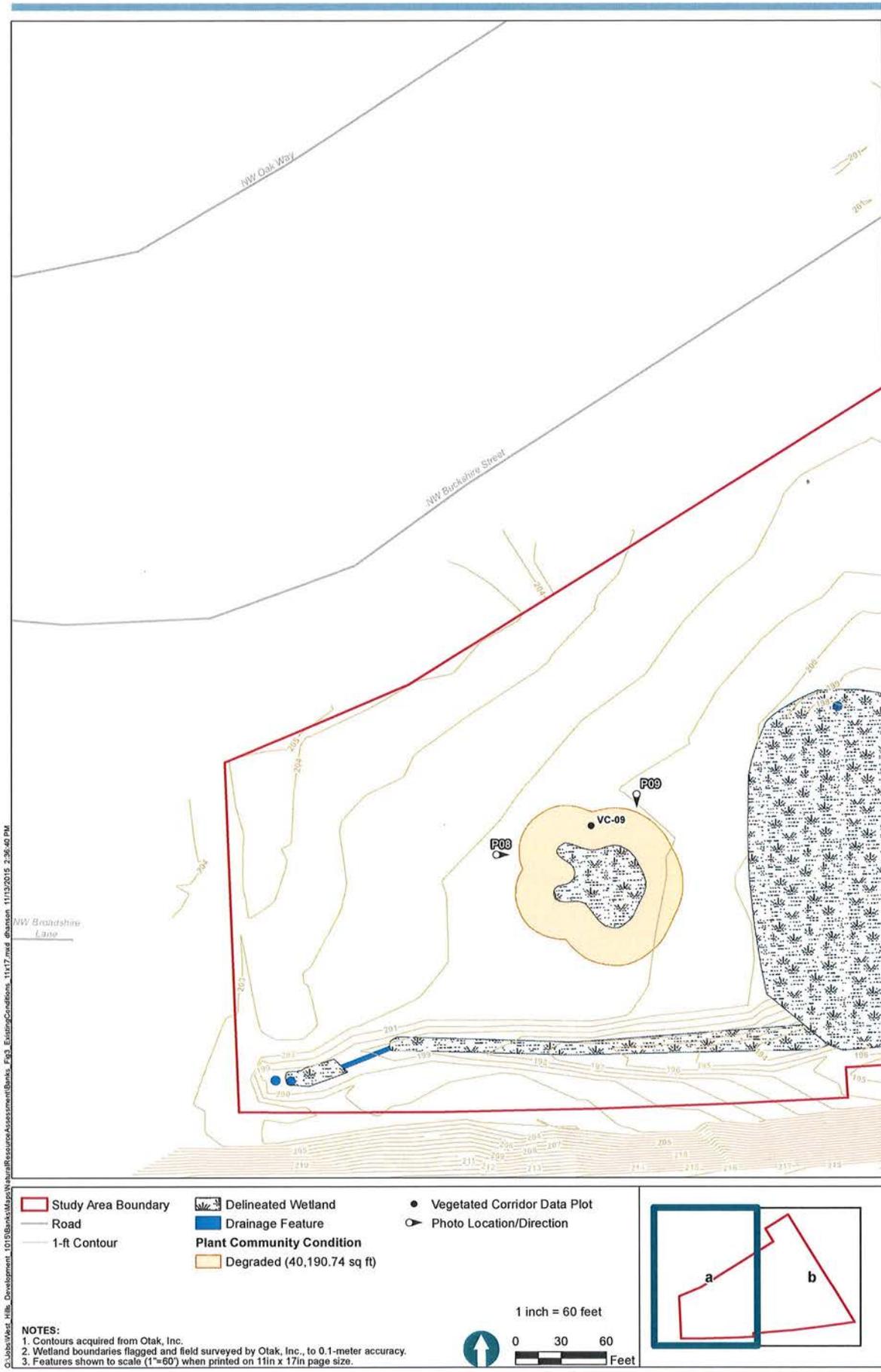
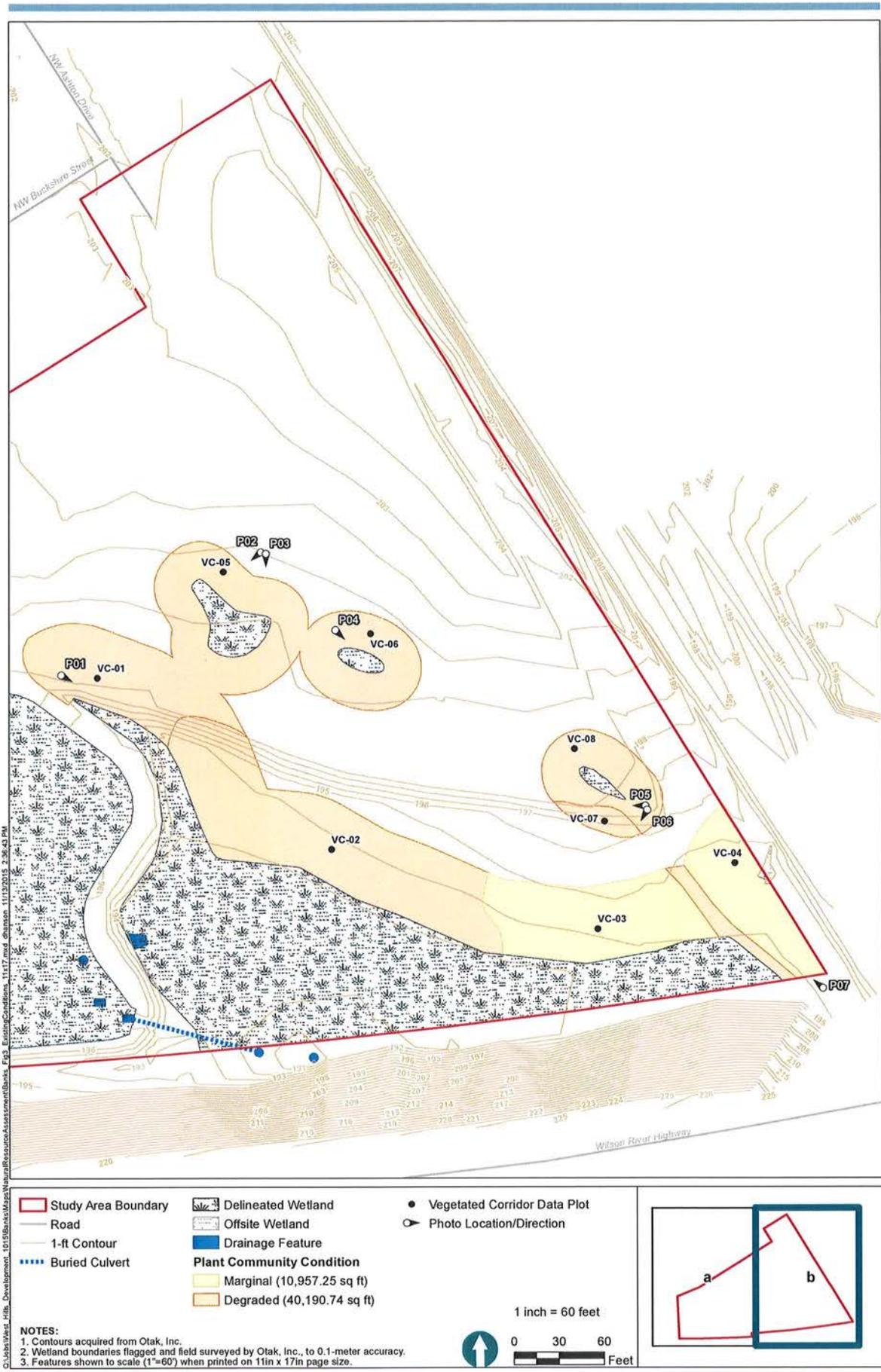


Figure 2
 Tax Lot Map
 Arbor Village No. 9 Natural Resource Assessment
 Washington County, OR
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 Fig. 3 Existing Conditions 1117.mxd @ 11:17 AM 11/13/2015 2:36:43 PM

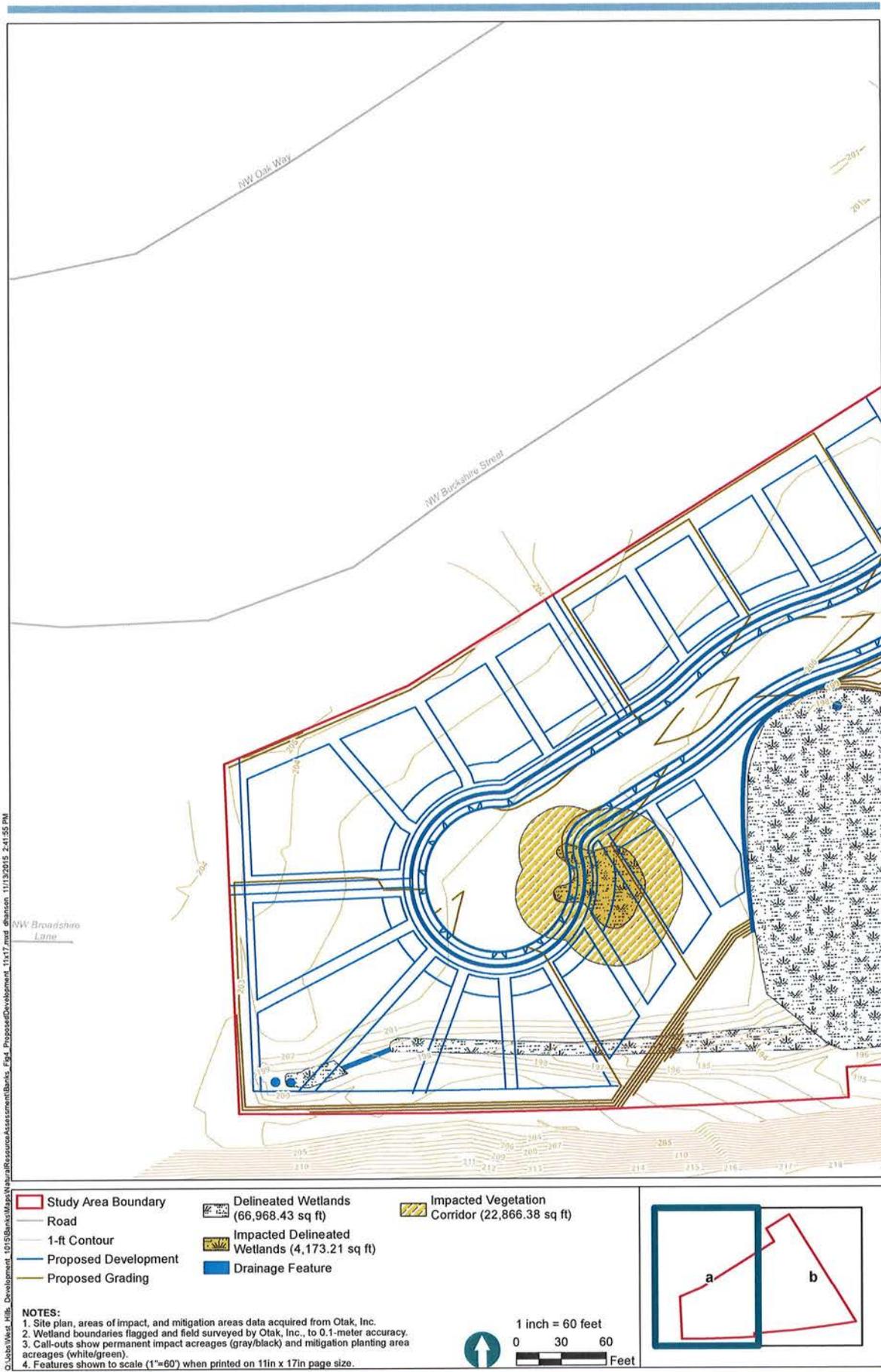
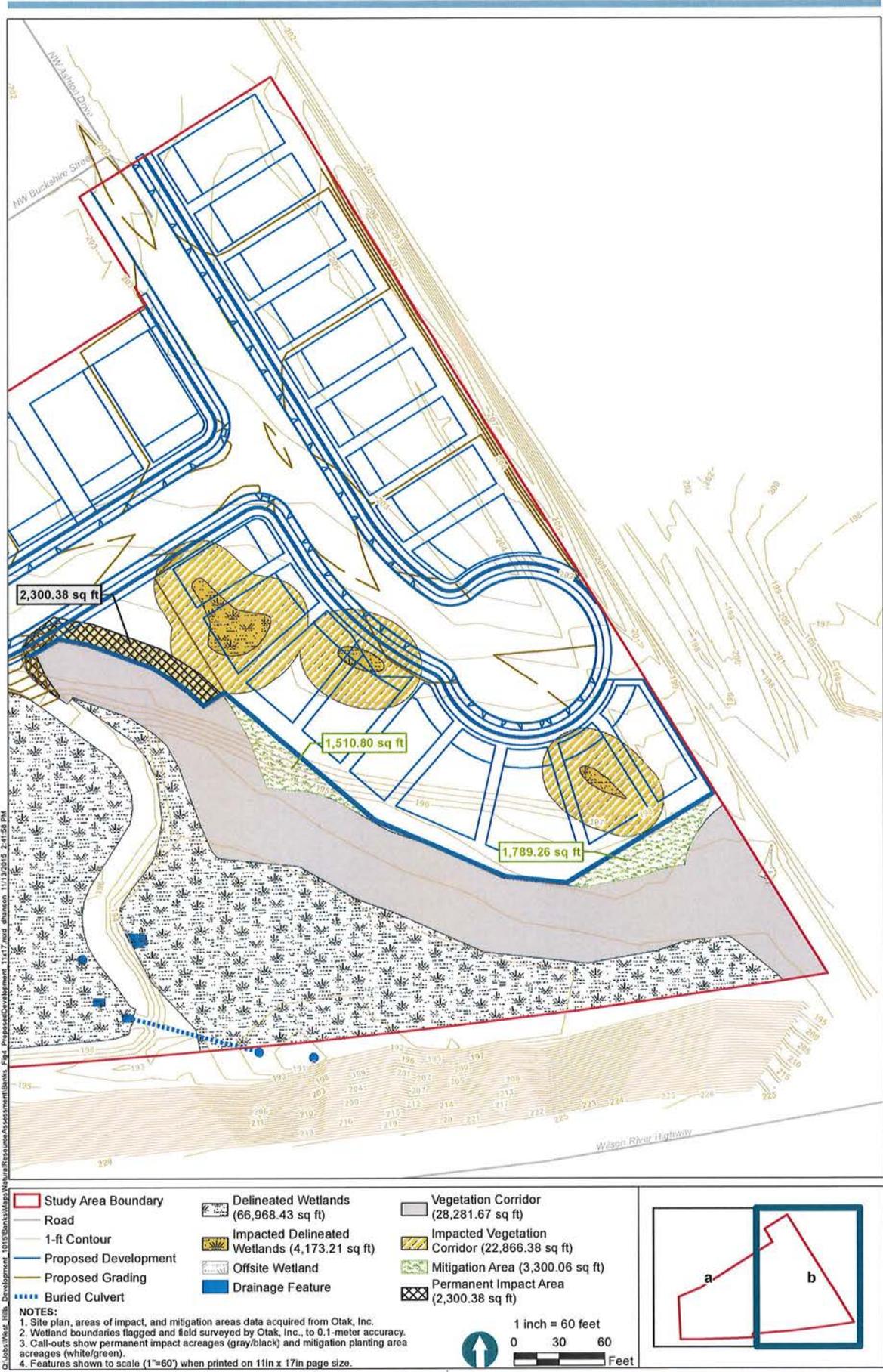


Figure 4a
 Proposed Development
 Arbor Village No. 9 Property Natural Resource Assessment
 Washington County, OR
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- Study Area Boundary
- Road
- Proposed Development
- Proposed Grading
- Buried Culvert
- Delineated Wetlands (66,968.43 sq ft)
- Impacted Delineated Wetlands (4,173.21 sq ft)

- Offsite Wetland
- Drainage Feature
- Vegetation Corridor (30,523.33 sq ft)
- Impacted Vegetation Corridor (22,866.38 sq ft)
- Plant Community Targeted for Enhancement

- Mitigation Area (3,300.06 sq ft)
 - Permanent Impact Area (2,300.38 sq ft)
- Plant Community Condition**
- Marginal (10,957.26 sq ft)
 - Degraded (19,566.07 sq ft)

NOTES:
 1. Site plan, areas of impact, and mitigation areas data acquired from Otak, Inc.
 2. Wetland boundaries flagged and field surveyed by Otak, Inc., to 0.1-meter accuracy.

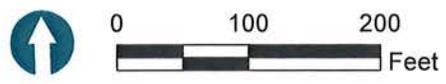


Figure 5
 Site Overview
 Arbor Village No. 9 Natural Resource Assessment
 Washington County, OR
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APPENDIX A
BANKS PROPERTY
WETLAND DELINEATION REPORT



Oregon

Kate Brown, Governor

Department of State Lands

775 Summer Street NE, Suite 100

Salem, OR 97301-1279

(503) 986-5200

FAX (503) 378-4844

www.oregon.gov/dsl

August 3, 2015

State Land Board

West Hills Development
Attn: Dan Grimberg
735 SW 158th Ave.
Beaverton, OR 97006

Kate Brown
Governor

Jeanne P. Atkins
Secretary of State

Re: WD #2015-0225 Wetland Delineation Report for a Proposed
Housing Subdivision at the Banks Property,
Washington County;
T 2N R 3W S 31CD TL 11400

Ted Wheeler
State Treasurer

Dear Mr. Grimberg:

The Department of State Lands has reviewed the wetland delineation report prepared by Anchor QEA for the site referenced above. Based upon the information presented in the report and additional information submitted upon request, we concur with the wetland boundaries as mapped in Figure 9 of the report. Within the study area, eight wetlands were identified.

The wetlands identified as Wetland A, F and the Water Quality Pond (totaling together approximately 1.458 acres) are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands. The remaining five wetlands, identified as Wetland B, C, D, E, and the Water Quality Swale are exempt per OAR 141-085-0515 (6) and (7); therefore, they are not subject to these state permit requirements

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination of jurisdiction for purposes of the Clean Water Act at the time that a permit application is submitted. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you

work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5232 if you have any questions.

Sincerely,



Peter Ryan, PWS
Jurisdiction Coordinator

Approved by 

Kathy Verble, CPSS
Aquatic Resource Specialist

Enclosures

- ec: Greg Summers, Anchor QEA
- City of Banks Planning Department (Map enclosed for updating LWI)
- Michael Ladouceur, Corps of Engineers
- Anita Huffman, DSL
- Amber Wierck, Clean Water Services

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

This form must be included with any wetland delineation report submitted to the Department of State Lands for review and approval. A wetland delineation report submittal is not "complete" unless the fully completed and signed report cover form and the required fee are submitted. Attach this form to the front of an unbound report or include a hard copy of the completed form with a CD/DVD that includes a single PDF file of the report cover form and report (minimum 300 dpi resolution) and submit to: Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279. A single PDF attachment of the completed cover form and report may be e-mailed to Wetland_Delineation@dsl.state.or.us. For submittal of PDF files larger than 10 MB, e-mail instructions on how to access the file from your ftp or other file sharing website. Fees can be paid by check or credit card. Make the check payable to the Oregon Department of State Lands. To pay the fee by credit card, call 503-986-5200.

<input checked="" type="checkbox"/> Applicant <input type="checkbox"/> Owner Name, Firm and Address: West Hills Development 735 SW 158 th Ave. Beaverton, OR 97006	Business phone # (503) 726-7030 Mobile phone # (optional) E-mail: dgrimberg@arborhomes.com
---	--

<input checked="" type="checkbox"/> Authorized Legal Agent, Name and Address: West Hills Development 735 SW 158 th Ave. Beaverton, OR 97006	Business phone # (503) 726-7030 Mobile phone # E-mail: dgrimberg@arborhomes.com
--	---

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.
 Typed/Printed Name: Dan Grimberg Signature: _____
 Date: 04/22/2015 Special instructions regarding site access: Call consultant prior to accessing.

Project and Site Information (using decimal degree format for lat/long, enter centroid of site or start & end points of linear project)			
\Project Name: Banks Property	Latitude: 45.6093528	Longitude: -123.105061	
Proposed Use: Housing Subdivision	Tax Map # 2N331		
Project Street Address (or other descriptive location): On the north side of NW Wilson River Highway (Oregon State Highway 6) and south of NW Buckshire Street	Township 2N Range 3W Section 31 QQ SW		
	Tax Lot(s) 2N331CD11400		
City: Banks County: Washington	Waterway: no mapped waterways	River Mile: n/a	
	NWI Quad(s): n/a		

Wetland Delineation Information	
Wetland Consultant Name, Firm and Address: Greg Summers, Anchor QEA 6650 SW Redwood Lane Ste. 333 Portland, OR 97224	Phone # (503) 924-6196 Mobile phone # E-mail: gsummers@anchorqea.com
The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge. Consultant Signature: xxxxxxxxxxxxxxxx _____ Date: <u>04/22/2015</u>	

Primary Contact for report review and site access is <input checked="" type="checkbox"/> Consultant <input type="checkbox"/> Applicant/Owner <input type="checkbox"/> Authorized Agent	
Wetland/Waters Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Study Area size: 8.36 ac. Total Wetland Acreage: 1.634 ac.

Check Box Below if Applicable:	Fees:
<input type="checkbox"/> R-F permit application submitted	<input checked="" type="checkbox"/> Fee payment submitted \$ 406.00
<input type="checkbox"/> Mitigation bank site	<input type="checkbox"/> Fee (\$100) for resubmittal of rejected report
<input type="checkbox"/> Wetland restoration/enhancement project (not mitigation)	<input type="checkbox"/> No fee for request for reissuance of an expired report
<input type="checkbox"/> Industrial Land Certification Program Site	
<input type="checkbox"/> Reissuance of a recently expired delineation	
Previous DSL # _____ Expiration date _____	

Other Information:	Y N
Has previous delineation/application been made on parcel?	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> If known, previous DSL # 97-0190
Does LWI, if any, show wetland or waters on parcel?	<input checked="" type="checkbox"/> <input type="checkbox"/> 2002 Draft LWI 96-0558

For Office Use Only			
DSL Reviewer: <u>PR</u>	Fee Paid Date: <u>5/11/15</u>	DSL WD # <u>2015-0457</u>	
Date Delineation Received: <u>5/11/15</u>	DSL Project # _____	DSL Site # _____	
Scanned: <input type="checkbox"/> Final Scan: <input type="checkbox"/>	DSL WN # _____	DSL App. # _____	

WD#2015-0225



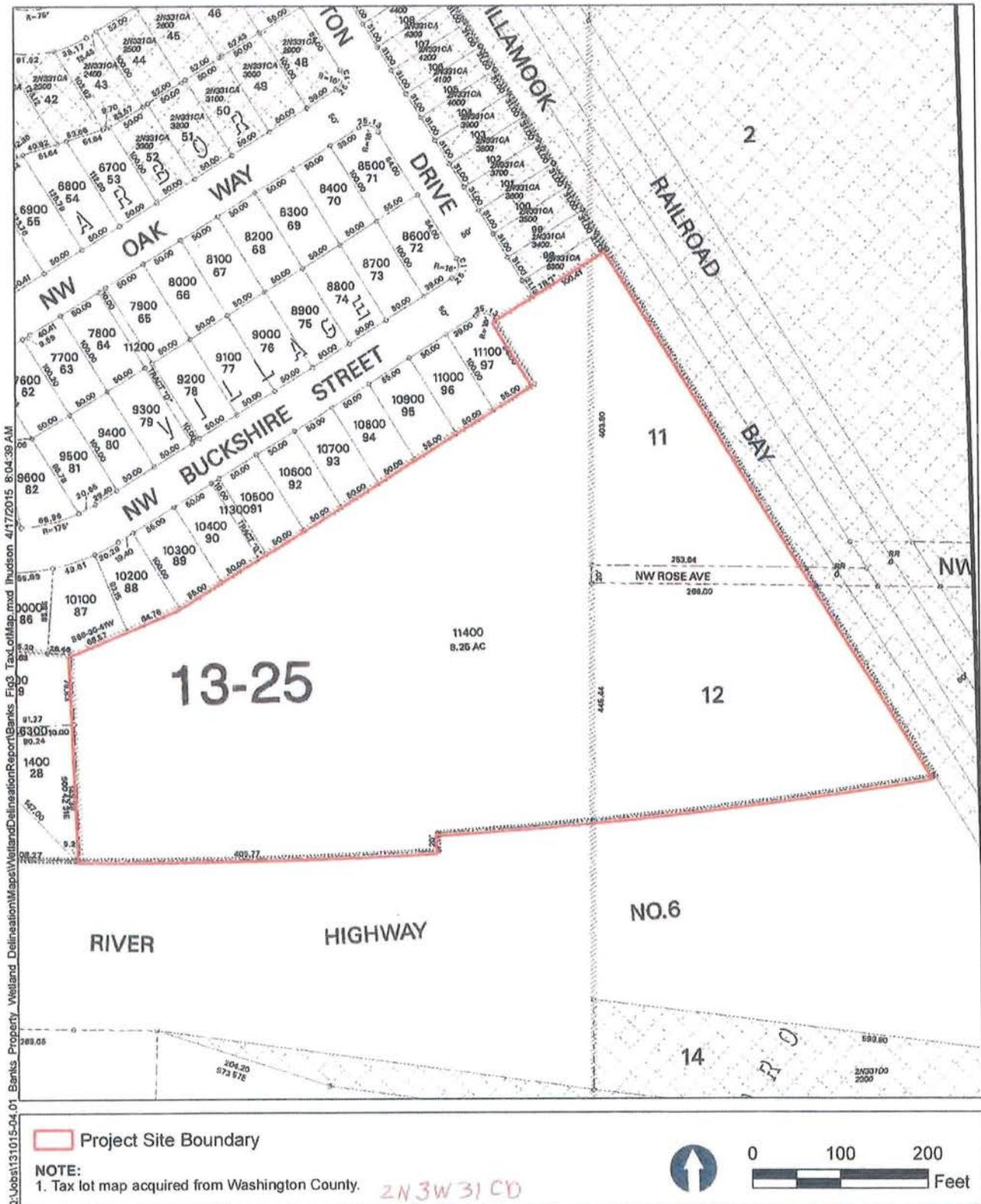
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NOTE:
1. Base map courtesy of ESRI and its data suppliers (2013).



Figure 1
Site Location Map
Banks Property Wetland Delineation
Washington County, OR
EXHIBIT 12
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WI#2015-0225



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Figure 3
Tax Lot Map
Banks Property Wetland Delineation
Washington County, OR
EXHIBIT 12
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WETLAND DELINEATION REPORT
WEST HILLS DEVELOPMENT: BANKS PROPERTY

Prepared for

West Hills Development
735 Southwest 158th Avenue
Beaverton, Oregon 97006

Prepared by

Anchor QEA, LLC
6650 Southwest Redwood Lane, Suite 333
Portland, Oregon 97224

May 2015

WETLAND DELINEATION REPORT WEST HILLS DEVELOPMENT: BANKS PROPERTY

Prepared for

West Hills Development
735 Southwest 158th Avenue
Beaverton, Oregon 97006

Prepared by

Anchor QEA, LLC
6650 Southwest Redwood Lane, Suite 333
Portland, Oregon 97224

May 2015

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LIST OF ACRONYMS AND ABBREVIATIONS

CWS	Clean Water Services
DSL	Oregon Department of State Lands
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
HGM	hydrogeomorphic
LWI	Local Wetland Inventory
NGVD	National Geodetic Vertical Datum
NWI	National Wetland Inventory
OAR	Oregon Administrative Rule
OBL	Obligate Wetland
PEM	palustrine emergent
PFO	palustrine forested
PSS	palustrine scrub-shrub
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WETS	Natural Resources Conservation Service Wetlands Determinations

1 INTRODUCTION

Anchor QEA, LLC, was retained by West Hills Development to perform a routine-level wetland delineation for a proposed residential housing development on the property referred to as the Banks Property (project site) in Banks, Oregon (Figures 1 through 3). Specific location information for the project site is as follows:

City/County/State:	Banks, Washington County, Oregon
General Location:	On the north side of NW Wilson River Highway (Oregon State Highway 6) and south of NW Buckshire Street
Tax Lot:	2N331CD11400
Latitude/Longitude:	45.6093528 / -123.105061
PLSS:	Southwest quarter of Section 31, Township 2 North, Range 3 West
Street Address:	No address/residence
Approximate Area:	8.36 acres
Zoning:	Industrial (I) – proposing to rezone Single Family Residential (R-5)
Waterways:	There are no mapped waterways within the project site.

This Wetland Delineation Report presents the results of the wetland delineation fieldwork performed for the project site on July 24 and September 11, 2013, February 13 and 16, and April 13 and 17, 2015; describes existing site conditions at the time of the site visits; and discusses results of the field investigations. Supporting information is provided in the following appendices:

- Appendix A: Site Photographs
- Appendix B: Historical Aerial Photographs
- Appendix C: Weather Data
- Appendix D: Wetland Delineation Data Sheets

2 LANDSCAPE SETTING AND LAND USE

The project site is situated in the Prairie Terraces sub-region of the Willamette Valley ecoregion (Thorson et al. 2003) and sits atop a broad, flat terrace below the western foothills of the Tualatin Mountains. The topography of the project site is generally level to gently sloping from north to south, with a 4- to 5-foot fill slope (i.e., up to 5 feet of material has been placed on the site to level the majority of it) running through the southeastern quarter of the project site. Elevations range from approximately 205 feet National Geodetic Vertical Datum (NGVD29) along the northern perimeter of the project site to 191 feet NGVD29 at the lowest elevation along the south-central property boundary (Figure 4). Hydrologically, the project site is located within the Lower East Fork Dairy Creek watershed (HUC12 [hydrologic unit code, 12-digit] 170900100305) in the Tualatin sub-basin (Oregon State University 2015).

2.1 Existing Conditions

2.1.1 Site Location

The project site comprises one tax lot north of Highway 6 and south of NW Buckshire Street in Banks, Washington County, Oregon. The general site vicinity is shown in Figure 1.

2.1.2 Current Site Description

No buildings or paved roadways are present on the project site. Land use is a mixture of stormwater treatment facilities and unmanaged areas (Figure 2). A weedy, grassy herbaceous cover that is periodically mowed occupies about three-quarters of the site and is also traversed by dirt and gravel access roads. This section has been filled and leveled. A Clean Water Services (CWS) Water Quality Pond lies in the center of the property, surrounded by a 4-foot chain-link fence, and receives piped stormwater at its north end. A CWS Water Quality Swale is located in the southwest portion of the project site and drains into the Water Quality Pond. Water discharges from the pond into a PEM/PSS wetland located immediately to the east through two culverts. A mixed conifer and deciduous forest lies along the south property boundary in association with the Highway 6 road embankment. A narrow band of deciduous forest also lies along the eastern property boundary, adjacent to the railroad tracks.

2.1.3 Surrounding Land Use

Land use to the north and west of the project site is low-density residential housing (Arbor Village Development). A railroad corridor borders the east boundary of the project site, while a steep road embankment and Highway 6 border the south boundary. Agriculture and rural residential housing extend to the south and east of the project site beyond the railroad tracks and Highway 6 (Figure 2).

2.2 Existing Data Review

Potential wetlands and other non-wetland waters were identified on the project site using the following sources:

- The 2015 online U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Wetland Mapper
- City of Banks Draft Local Wetland Inventory (LWI)
- The 1982 Soil Conservation Service's *Soil Survey of Washington County, Oregon* (Soil Conservation Service 1982)
- The SRI/Shapiro/AGCO, Inc. 1997 *Wetland Determination and Delineation for Arbor Village at South Banks in Banks, Oregon* Report
- Aerial photographs obtained from the U.S. Army Corps of Engineers (USACE; Appendix B)
- Google Earth satellite imagery (Timeline Function)
- Oregon Explorer Map Viewer (2015)
- StreamNet (2015)

2.2.1 National Wetland Inventory

No NWI wetlands are mapped on the project site. Located south of the site boundary and Highway 6, a wetland area (NWI wetlands—freshwater emergent and freshwater forested/shrub) is shown on the NWI (Figure 5).

2.2.2 Local Wetland Inventory

According to the draft LWI prepared in November of 2002 for the City of Banks (Figure 6), one Water Quality/Detention Facility and one Significant Wetland were identified on the project site.

2.2.3 Soil Survey Information

Soils on the majority of the project site contain low percentages of hydric inclusions, are poorly to moderately well drained, and exhibit slow rates of water infiltration. Verboort, a hydric soil, is present through a large portion of the middle of the site. Soil distribution across the project site is shown in Figure 7. The majority of the site has been scraped and graded for leveling purposes resulting in soil mixing and inconsistencies in the soil profiles as mapped in the soil survey.

Table 1
Soils Mapped on the Study Areas by the Washington County Soil Survey

Map Unit	Soil Unit Name	Drainage Class	Hydrologic Soil Group ¹	Hydric (Yes /No)	Total Hydric Component ²	Acres
1	Aloha silt loam	Somewhat poorly drained	C/D	No	1%	0.7
42	Verboort silty clay loam	Poorly drained	D	Yes	10%	3.5
45B	Woodburn silt loam, 3-7% slopes	Moderately well drained	C	No	1%	4.2

Notes:

Data was obtained from the online Web Soil Survey (NRCS 2014a) and confirmed using the Soil Survey of Washington County, Oregon.

1. Group C. Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted.
Group D. Soils in this group have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted (NRCS 2014b).
2. Total percentage of minor components that are rated as hydric.

2.2.4 SRI/Shapiro/AGCO Wetland Delineation

SRI/Shapiro/AGCO, Inc. (Shapiro) previously delineated the project site in October 1996 and prepared a May 2, 1997, wetland delineation report summarizing the results of the study

(SRI/Shapiro/AGCO 1997). This report documented the presence of one 0.19-acre wetland associated with a depression area located at the base of a constructed berm along its eastern boundary. The constructed berm was part of an existing water quality pond that was located near the center of the site. An excavated, grassy water quality swale that flowed into this pond was also identified during this study. The Oregon Department of State Lands (DSL) concurred with this delineation on August 21, 1997 (DSL Det. #97-0190), stating that only the 0.19-acre wetland was subject to the permit requirements of the Removal-Fill Law. This delineation approval has since expired.

2.2.5 Historical Aerial Photographs

Historic aerial photographs obtained from USACE (Appendix B) show that the project site was used extensively for agricultural purposes since before 1940. Land use adjacent to the site has historically included agriculture, road and rail transportation corridors, and rural residential housing. By the time of the 2004 photograph, agricultural activities ceased within the project site with the creation of a pond in the central portion of the site and the construction of the Arbor Village Development to the north and west of the site. At this time, the surrounding land use shows an increase in rural residential and commercial development.

2.3 Land Use

As indicated by current and historical aerial photographs and confirmed through site visits, the project site is used for stormwater management for the existing Arbor Village Development.

3 SITE ALTERATIONS

The project site remained agricultural until the mid-1990s when a CWS Water Quality Pond was constructed in the central portion of the site to serve the stormwater requirements of the existing Arbor Village Development immediately north of the project site (Figure 8). The pond area was partially excavated, and then fill material was brought in to create an elevated earthen berm along the pond's eastern and southern boundary. The elevated earthen berm also serves as an access road around the pond. During this time, a CWS Water Quality Swale was excavated in the southwest portion of the site to deliver additional stormwater from the development immediately west of the site to the pond.

Sometime after the late 1990s, fill was also placed and leveled in the northern half of the site to bring the elevation to grade, likely in preparation for future development. This created a broad, level terrace that ends at a 4- to 5-foot fill slope running west to east through the east-central portion of the project site. The only other discernable site alteration occurred in 1963 when a steep road embankment was constructed immediately south of the site for Highway 6 to bridge the railroad corridor.

Hydrology has been altered on the project site through the creation of the water quality swale and pond, and the pond discharges water to a large PEM/PSS wetland east of the pond. The emergent wetland drains off site to the south via a corrugated metal pipe under Highway 6.

4 PRECIPITATION DATA AND ANALYSIS

To provide additional information on the hydrologic conditions of the project site, precipitation data were acquired from the National Weather Service’s Hillsboro, Oregon, weather station (National Weather Service 2015; Appendix C) at the time of site visits and the rainfall during the 2 weeks prior to each site visit (Table 2). Table 3 shows the percent of normal rainfall received for the water year (October 1 to September 30) at the Portland weather station at the time of each site visit. Table 4 provides a determination of whether the precipitation recorded for each of the 3 months preceding site visits is within the 30th to 70th percentile normal range listed in the Natural Resources Conservation Service Wetlands Determinations (WETS) Table for the Beaverton SSW weather forecasting station (NRCS 2002; Appendix C).

Table 2
Precipitation Data for the Site Visits

Date of Site Visit	Precipitation (inches)¹	2-Week Date Range Prior to Site Visit	Total Precipitation 2-Weeks Prior to Site Visit (inches)¹
7/24/2013	0.00	7/10 to 7/23/2013	0.00
9/11/2013	0.00	8/28 to 9/10/2013	1.97
2/13/2015	0.00	1/30 to 2/12/2015	4.40
2/16/2015	0.00	2/2 to 2/15/2015	4.17
2/18/2015	0.00	2/4 to 2/17/2015	3.53
4/13/2015	0.30	3/30 to 4/12/2015	1.31
4/17/2015	0.00	4/3 to 4/16/2015	1.68

Note:

1. National Weather Service’s Hillsboro, Oregon, weather station (2015; Appendix C)

Table 3
Percent of Normal Rainfall for the Water Year for Each Site Visit

Date of Site Visit	Current Water Year (inches) ¹	Normal Value for Water Year (inches) ^{1,2}	Departure from Normal (inches)	Percent of Normal (%)
7/24/2013	33.31	33.78	-0.47	99
9/11/2013	35.65	35.00	0.65	102
2/13/2015	22.24	24.84	-2.60	90
2/16/2015	22.24	25.25	-3.01	87
2/18/2015	22.24	25.50	-3.26	87
4/13/2015	28.27	32.03	-3.76	88
4/17/2015	28.34	32.40	-4.06	88

Notes:

1. National Weather Service's Hillsboro, Oregon, weather station (2015; Appendix C)
2. (2013 site visits only) National Weather Service's Portland, Oregon, airport weather station (2015; Appendix C)

Table 4
Monthly Percent of Normal Precipitation for the 3 Months Prior to Site Visits

Month	Actual Monthly Precipitation (inches) ¹	30th to 70th Percentile Normal Range (inches) ²	30th to 70th Percentile Normal Range Comparison
April 2013	2.33	1.90 to 3.32	Normal
May 2013	3.98	1.40 to 2.72	Above
June 2013	1.31	1.02 to 1.95	Normal
July 2013	Trace	0.27 to 0.84	Below
August 2013	0.85	0.22 to 0.98	Normal
November 2014	2.83	4.08 to 7.25	Below
December 2014	5.88	4.42 to 7.64	Normal
January 2015	3.01	3.53 to 7.07	Below
February 2015	4.57	3.06 to 5.84	Normal
March 2015	4.68	3.03 to 4.74	Normal

Notes:

1. National Weather Service's Hillsboro, Oregon, weather station monthly reports (2014; Appendix C)
 Available from: <http://www.nws.noaa.gov/climate/index.php?wfo=pqr>
2. Natural Resources Conservation Service Wetlands Determinations Table; WETS Station Beaverton 2 SSW, OR0595 (NRCS 2015; Appendix C).
 WETS = National Weather Service precipitation tables

5 DELINEATION METHODS

Anchor QEA wetland scientists performed wetland delineation fieldwork on July 24 and September 11, 2013, February 13 and 16, and April 13 and 17, 2015, in accordance with the following standards: the methods presented in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Regional Supplement, Version 2.0; USACE 2010); the *U.S. Army Corps of Engineers Wetland Delineation Manual* (USACE 1987); and the Oregon Administrative Rules (OAR) 141-090-0005 to 141-090-0055.

6 WETLANDS AND NON-WETLAND OTHER WATERS

Eight wetlands/non-wetland other waters (CWS Water Quality Swale, CWS Water Quality Pond, and Wetlands A through F; Figure 9) totaling 1.634 acres were delineated on the Banks project site.

The individual characteristics and acreages are summarized in Table 5 and described in this section. Wetland delineation field data sheets are included in Appendix D.

Table 5
Potential Wetlands and Non-wetland Other Waters Delineated on the Project Site

Wetlands and Non-wetland Other Waters	Description	Classification		On-site Area (acres)
		Cowardin 1979	HGM (Adamus 2001)	
CWS Water Quality Swale ¹	Constructed Wetland; Vegetated Open Channel	N/A	N/A	0.082
CWS Water Quality Pond	Constructed Wetland; Stormwater Treatment Pond	N/A	N/A	0.749
Wetland A	PEM/PSS wetland	PEM/PSS	Slope/flats	0.708
Wetland B	PEM wetland	PEM	Slope/flats	0.03
Wetland C	PEM wetland	PEM	Slope/flats	0.007
Wetland D	PEM wetland	PEM	Slope/flats	0.005
Wetland E	PEM wetland	PEM	Slope/flats	0.052
Wetland F ²	Culvert and Drainage Ditch	PFO	Slope/flats	0.001
Total area of wetlands (acres)				1.634

Notes:

1. Calculations are for the open portions of the swale where wetland conditions exist.
2. The majority of this wetland is located off site in the railroad corridor; calculations shown are for the on-site portion.

HGM = hydrogeomorphic

N/A = not applicable

PEM = palustrine emergent

PFO = palustrine forested

PSS = palustrine scrub-shrub

6.1 Clean Water Services Water Quality Swale

The 0.082-acre CWS Water Quality Swale runs west to east and is located in the southwestern portion of the project site (Figure 9). It consists of an excavated grassy channel that carries stormwater flow from two culverts located in the southwestern corner of the property to the CWS Water Quality Pond in the south-central portion of the site. This swale was excavated in upland soils. This feature was constructed per Clean Water Services Standards to treat stormwater from the adjacent development. The pipe network of this swale is shown in Figure 8. It should be noted that the shape of the swale and pond in Figure 8 are not accurate. Because this channel is a man-made water quality swale, it is not classified under the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) or under the Oregon Hydrogeomorphic (HGM) Classification System (Adamus 2001).

6.1.1 Vegetation

The bottom of the swale is dominated by meadow foxtail (*Alopecurus pratensis*; Facultative [FAC]), along with a few patches of soft rush (*Juncus effusus*; Facultative Wetland [FACW]).

6.1.2 Soils

The CWS Water Quality Swale was excavated from upland (Aloha) soils. Soils within the bottom of the channel have a greenish grey matrix in the upper few inches (Gley 5/10Y) with the remainder of the matrix grayish brown (10YR 5/2). Redox concentrations are a strong brown (7.5YR 5/8) and abundant from 0 to 16 inches. The hydric soil indicator applied was Depleted Matrix.

6.1.3 Hydrology

The main hydrologic source for the swale is stormwater runoff from the Arbor Village Development (Figure 8) to the west of the project site and lateral subsurface flow or surface runoff as a secondary source.

6.1.4 Boundary Determination

The north and south wetland boundaries for the CWS Water Quality Swale were established where the ordinary high water level was determined along the slopes of the channel. The westernmost boundary is defined by a 24-inch concrete culvert and a 32-inch corrugated metal pipe links the two open sections of the swale, while the eastern boundary is subjectively determined to be a fence line at the edge of the CWS Water Quality Pond where the two facilities merge.

6.2 Clean Water Services Water Quality Pond

The CWS Water Quality Pond is located in the south-central portion of the project site and consists of a 0.749-acre partially excavated pond impounded by an elevated earthen berm constructed on its eastern and southern boundaries, and is surrounded by a 4-foot chain-link fence (Figure 9). The pond was constructed in the mid-1990s to serve the existing Arbor Village Development stormwater requirements and is impounded by a constructed earthen berm along its eastern boundary. Because this pond is man-made for the purposes of stormwater retention and treatment, it is not classified under the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) or under the HGM Classification System (Adamus 2001).

6.2.1 Vegetation

Dominant vegetation within the pond includes cattail (*Typha latifolia*; Obligate Wetland [OBL]) and soft rush. Numerous shrubs and trees (both planted and natural recruits) are present along the slopes and top of slope around the fenced perimeter of the pond. These include Douglas fir (*Pseudotsuga menziesii*; Facultative Upland [FACU]), black cottonwood (*Populus balsamifera*; FAC), ponderosa pine (*Pinus ponderosa*; FACU), Oregon ash (*Fraxinus latifolia*; FACW), red alder (*Alnus rubra*; FAC), common snowberry (*Symphoricarpos albus*; FACU), Oregon grape (*Berberis* sp.) and wild rose (*Rosa* sp.).

6.2.2 Soils

The water quality pond was excavated primarily from Verboort Silty Clay Loam soils. Pits were not dug in the pond because of the chain link fence; however, hydric soils are assumed to be present.

6.2.3 Hydrology

Piped stormwater enters the CWS Water Quality Pond from a 36-inch concrete culvert on its northern end and from the CWS Water Quality Swale that flows across the southwestern portion of the project site and enters the pond at its southwest corner (Figures 8 and 9). There is a lower drainage culvert and upper overflow culvert in the southeast corner of the pond within the boundary of the fence. At the time of the site visits, water was actively flowing into the lower drainage culvert and piped through an approximately 85-foot, 15-inch concrete culvert that daylights and drains into an open channel within Wetland A. This channel extends approximately 40 feet before draining into a 36-inch corrugated metal pipe that is located off site and that runs under Highway 6. The pond also drains into the central west end of Wetland A through a 30-inch concrete culvert. This pond is likely permanently inundated.

6.2.4 Boundary Determination

The boundary for the CWS Water Quality Pond was determined to be the top of slope on the west and north side where the topography flattens out beyond the pond. The south and north boundaries were determined where the top of slope met the inner edge of the constructed earthen berm/access road. These boundaries also coincide with where the 4-foot chain-link fence is located.

6.3 Wetland A – PEM/PSS Wetland

Wetland A is a 0.708-acre palustrine emergent (PEM)/palustrine scrub-shrub (PSS) wetland that lies adjacent to the CWS Water Quality Pond in the southeastern portion of the project site (Figure 9). An emergent grass-dominated wetland comprises the majority of the wetland, with a scrub-shrub wetland area along the south-central portion. Wetland A is not apparent in historical photographs prior to the Arbor Village Development, but is now

classified as a PEM/PSS wetland under the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979), and a slopes/flat wetland under the HGM Classification System (Adamus 2001).

6.3.1 Vegetation

The PEM portion of Wetland A is dominated by meadow foxtail, reed canary grass (*Phalaris arundinacea*; FACW), and fescue (*Festuca rubra/arundinacea*; FAC), along with small amounts of other graminoids and weedy forbs. The PSS portion of Wetland A is dominated by willows (*Salix sp.*) with an herbaceous layer consistent with the PEM portion of the wetland, along with Northern lady fern (*Athyrium filix-femina*; FAC), slender rush (*Juncus tenuis*; FAC), fringed willowherb (*Epilobium ciliatum*; FACW) and trace amounts of bittersweet nightshade (*Solanum dulcamara*; FAC) around the margins. There is a large percentage of bare ground beneath the denser portions of the willow canopy.

6.3.2 Soils

Soils within the main wetland boundary of Wetland A generally have a very dark grey to black matrix (Gley 3/N, 7.5YR 3/1, and 10YR 2/1) with red redox concentrations (2.5YR 4/6 and 5/8) scattered throughout. The hydric soil indicator applied was Redox Dark Surface. Soils within the upper northwest corner of the Wetland A are slightly lighter in value with a dark grey matrix (Gley 4/N) and yellowish red redox concentrations (5YR 5/8). The Depleted Matrix hydric soil indicator was applied to this area. Outside the wetland boundary, the soils are dark (7.5YR 3/1 and 10YR 3/1 and 3/2) from 0 to 16 inches, with no redox features observed above 10 inches. Reddish brown redox concentrations were observed below 10 inches in some pits but did not meet hydric criteria.

6.3.3 Hydrology

Wetland A is situated in a depressional area and primarily receives water directly from the CWS Water Quality Pond through a 30-inch concrete culvert along its western boundary and a 15-inch culvert near its southwestern corner boundary. Wetland A secondarily receives water through lateral subsurface flow or surface runoff from the north. Water drains from Wetland A through a series of shallow channels running across the lower portion of the wetland that converge and drain into the off-site 36-inch corrugated metal

pipe under the Highway 6 road embankment. The primary hydrologic indicators for Wetland A are inundation, a high water table, and saturation, along with evidence of oxidized rhizospheres along living roots. Algal mats were observed in the upper northwest corner of the wetland.

6.3.4 Boundary Determination

The toe-of-slope for the eastern berm of the CWS Water Quality Pond defines the western boundary of this wetland, while the toe-of-slope for the Highway 6 embankment (off site) forms the southern wetland boundary. The northern and eastern boundaries were determined by the following: the berm that was constructed when the majority of the site was leveled and the associated rise in topography; the lack of hydric soil; and the lack of hydrology in the upper 12 inches of the soil surface.

6.4 Wetlands B through E – PEM Wetlands

These wetlands are aggregately described due to similarities in hydrogeomorphic position (scraped or rutted areas on the fill), soil, and hydrological characteristics. All four wetlands are classified as PEM wetlands under the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). Under the HGM Classification System (Adamus 2001), these wetlands are classified as slopes/flat. All are smaller than 0.052 acre (Table 5) and appear to have been created over the years by maintenance vehicles and mowing, or scraping and when the site was levelled. Wetlands C, D, and E are located on non-hydric Woodburn silt loam.

6.4.1 Vegetation

The vegetation in Wetlands B through E is dominated by water foxtail (*Alopecurus geniculatus*, OBL) and pennyroyal (*Mentha pulegium*; OBL), along with small floating mannagrass (*Glyceria borealis*, OBL), water plantain (*Alisma subcordatum*; OBL), and white clover (*Trifolium repens*, FAC). Vegetation in Wetland D also contained small amounts of meadow foxtail, fescue, and colonial bentgrass (*Agrostis tenuis*, FAC).

6.4.2 Soils

Wetland B is the only wetland that is located on historic hydric soil; the other wetlands are located on Woodburn silt loam. Soils within Wetlands B through E generally have a very dark grey to dark grayish brown matrix (10YR 4/1 and 4/2) with yellowish brown to strong brown to yellowish red redox concentrations (10YR 4/3, 4/6, 5/4, 5/8, 7.5YR 5/8, and 5YR 5/8) scattered throughout. Wetlands D and E soils also contained areas of depletions (10YR 5/1 and Gley 4/N) within the matrix.

6.4.3 Hydrology

Hydrology in the Wetlands B through E was present and documented as ponded water observed in the scraped or rutted areas on the fill. There is no surface water connection from Wetland E to the swale or to the wetland to the south (Wetland A) for Wetlands B, C, and F. Surface flow was observed flowing from Wetland D to Wetland A following high rain events.

6.4.4 Boundary Determination

The wetland boundaries for Wetlands B through E were determined where soils are non-hydric, hydrology was lacking, vegetation was dominated by non-hydrophytic species, and where the landform was not scraped or rutted (i.e., not depressional).

6.5 Wetland F – PFO Wetland

Wetland F is a palustrine forested (PFO) wetland that consists of an open ditch located adjacent to the railroad corridor in the southeastern corner of the study area (Figure 9). Most of this 0.003-acre feature lies outside of the project site boundary, with 0.001 acre within the site boundary. The on-site portion of the wetland is obscured in dense vegetation. Wetland F is classified as a PFO wetland under the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). Under the HGM Classification System (Adamus 2001), this wetland is classified as slopes/flat.

6.5.1 Vegetation

Wetland F is dominated by Oregon ash with common snowberry in the shrub layer. No herbaceous layer was present at the time of site visits.

6.5.2 Soils

Because the majority of Wetland F was off site, soil pits were not dug. However, this wetland is predominantly situated in Verboort Silty Clay Loam and therefore is assumed to contain hydric soils.

6.5.3 Hydrology

Water flows into the northern end of this wetland from an 18-inch corrugated metal pipe under the railroad tracks, which conveys flow from an off-site ditch located between two parallel rail lines. Water then pools within this area and during higher flows, exits at the southern end of the ditch through a shallow, narrow drainage area running parallel to the project site boundary as evidenced by a sparsely vegetated concave surface. This shallow channel becomes obscured and appears to terminate in a dense thicket of Himalayan blackberry (*Rubus armeniacus*) near the far southeastern corner of the site. It is unclear where the water flows from this point, but the lack of water indicates it is likely collected in a pipe.

6.5.4 Boundary Determination

The wetland boundary for Wetland F was determined by the extent of ponded water, hydrophytic vegetation, and an abrupt change in local topography. The area appears to have been excavated, and hydrophytic vegetation and hydrology are absent outside of the ditch.

7 DEVIATION FROM LOCAL WETLAND INVENTORY OR NATIONAL WETLAND INVENTORY

The project site does not contain any wetlands mapped on the NWI (Figure 5). Two wetlands are identified on the draft LWI for Banks (Figure 6) as a Water Quality/Detention Facility (0.545 acre) and a Significant Wetland (0.688 acre). These two features were verified and more accurately mapped. Otak, Inc., completed a review of a previous stormwater report for the area and determined that the Water Quality/Detention Facility does not have any detention volume and therefore is a Water Quality Pond. Additionally, four small wetlands were identified in the filled and leveled portion of the site, and one small wetland was noted primarily off site in the southeast corner of the property.

8 MAPPING METHOD

Wetland boundaries and data plot locations were staked in the field and were professionally land surveyed by Otak to an estimated accuracy of 0.01 foot. Wetland boundaries and data plots were then plotted on a base map using AutoCAD.

9 ADDITIONAL INFORMATION

No waterways or fish are mapped in the project site according to StreamNet (StreamNet 2015).

10 RESULTS AND CONCLUSIONS

Eight wetlands were identified on site totaling 1.634 acres (Figure 9). These areas include an excavated CWS Water Quality Swale, a CWS Water Quality Pond, and Wetlands A through F.

The CWS Water Quality Swale and CWS Water Quality Pond were constructed in the mid-1990s to meet the stormwater requirements of the existing Arbor Village Development, along with an earthen berm that impounds the eastern boundary of the pond. Wetland A is a PEM/PSS wetland that is primarily fed by discharge from the pond. Wetlands B through E are PEM wetlands and located in scraped or rutted areas on fill with Wetlands C, D, E, and F located on non-hydric Woodburn silt loam, and Wetland B located on Verboort silty clay loam. Wetland E is isolated from the swale and the pond, and there is no surface water connection to Wetland A from Wetlands B, C, and F. Surface water flow from Wetland D was observed flowing to Wetland A during one site visit. Wetland F is a small PFO wetland and is associated with a culvert and drainage area within the railroad corridor, the majority of which is located off site. There were no other waters of the United States/State of Oregon (e.g., streams, rivers) identified within the site boundary. Wetlands identified on site met all three wetland criteria by exhibiting a dominance of hydrophytic vegetation (e.g., willow, meadow foxtail, water foxtail, and reed canary grass), dark or depleted soils with redoximorphic features, and primary and secondary indicators of hydrology such as surface water, saturation in the upper 12 inches of the soil profile, oxidized rhizospheres, and geomorphic position.

The CWS Water Quality Pond receives stormwater from the existing development to the north of the project site and through a CWS Water Quality Swale. Water from the pond is discharged to Wetland A and overflow from this wetland drains into a metal pipe running under Highway 6 and into a wetland area south of Highway 6. The drainage area associated with Wetland F appears to be a section of a larger railroad ditch system. It is not known if this wetland is connected to the wetland south of Highway 6.

11 DISCLAIMER

This report documents the investigation, best professional judgment, and conclusions of Anchor QEA. It is correct and complete to the best of Anchor QEA's knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at West Hills Development's own risk, unless it has been reviewed and approved in writing by DSL in accordance with OAR 141-090-0005 through 141-090-0055. If impacts to wetlands and other waters on this property are proposed, this report will need to be reviewed and approved in writing by DSL through a state-authorized Removal-Fill Permit and by the USACE Portland District in conjunction with the submittal of a Joint Section 404/Removal-Fill Permit Application as required.

12 REFERENCES

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FIGURES

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NOTE:
1. Base map courtesy of ESRI and its data suppliers (2013).



Figure 1
Site Location Map
Banks Property Wetland Delineation
Washington County, OR
Page 75 of 241

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 Project Site Boundary

NOTE:
1. Aerial imagery acquired from Google Earth (2014).



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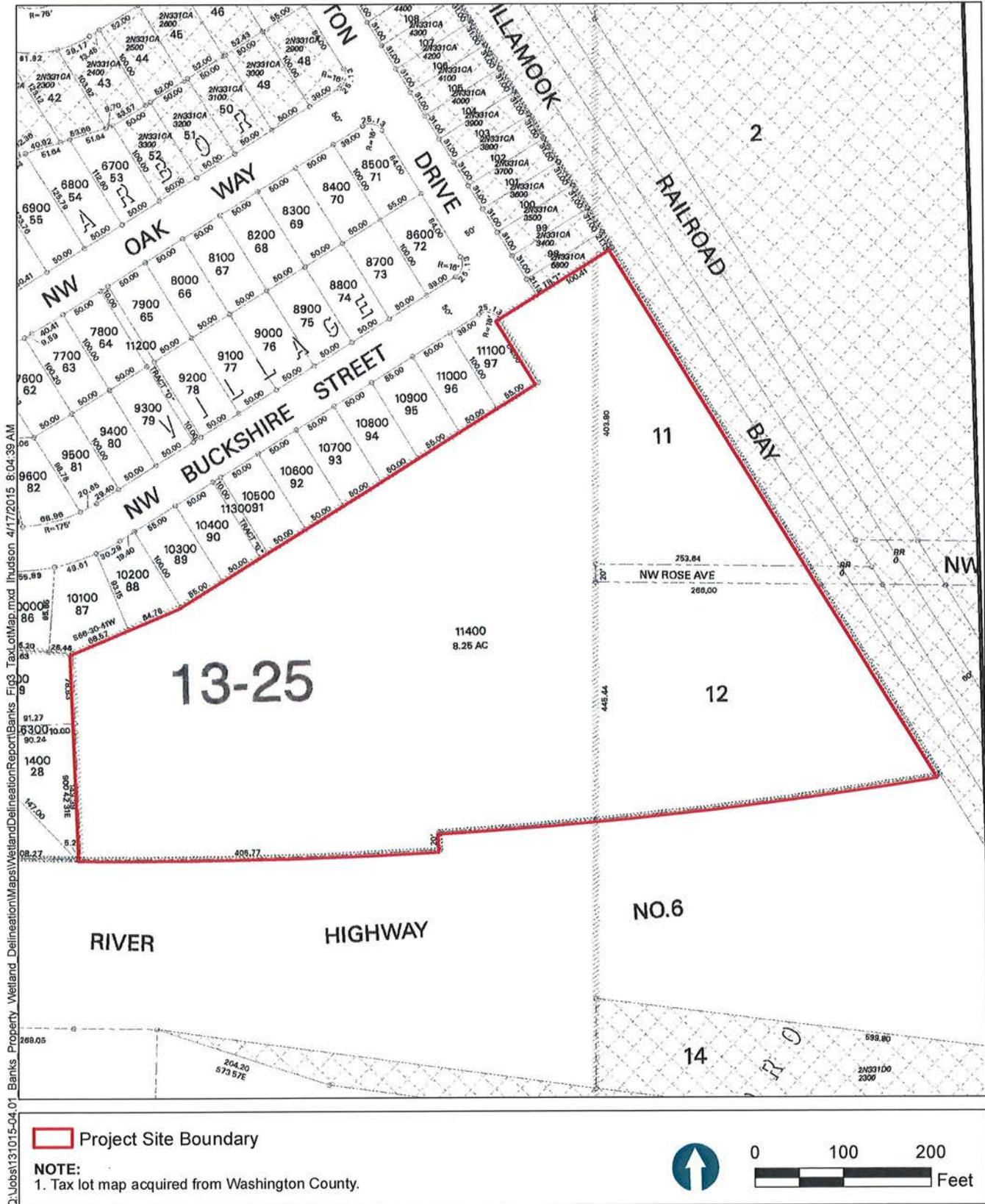
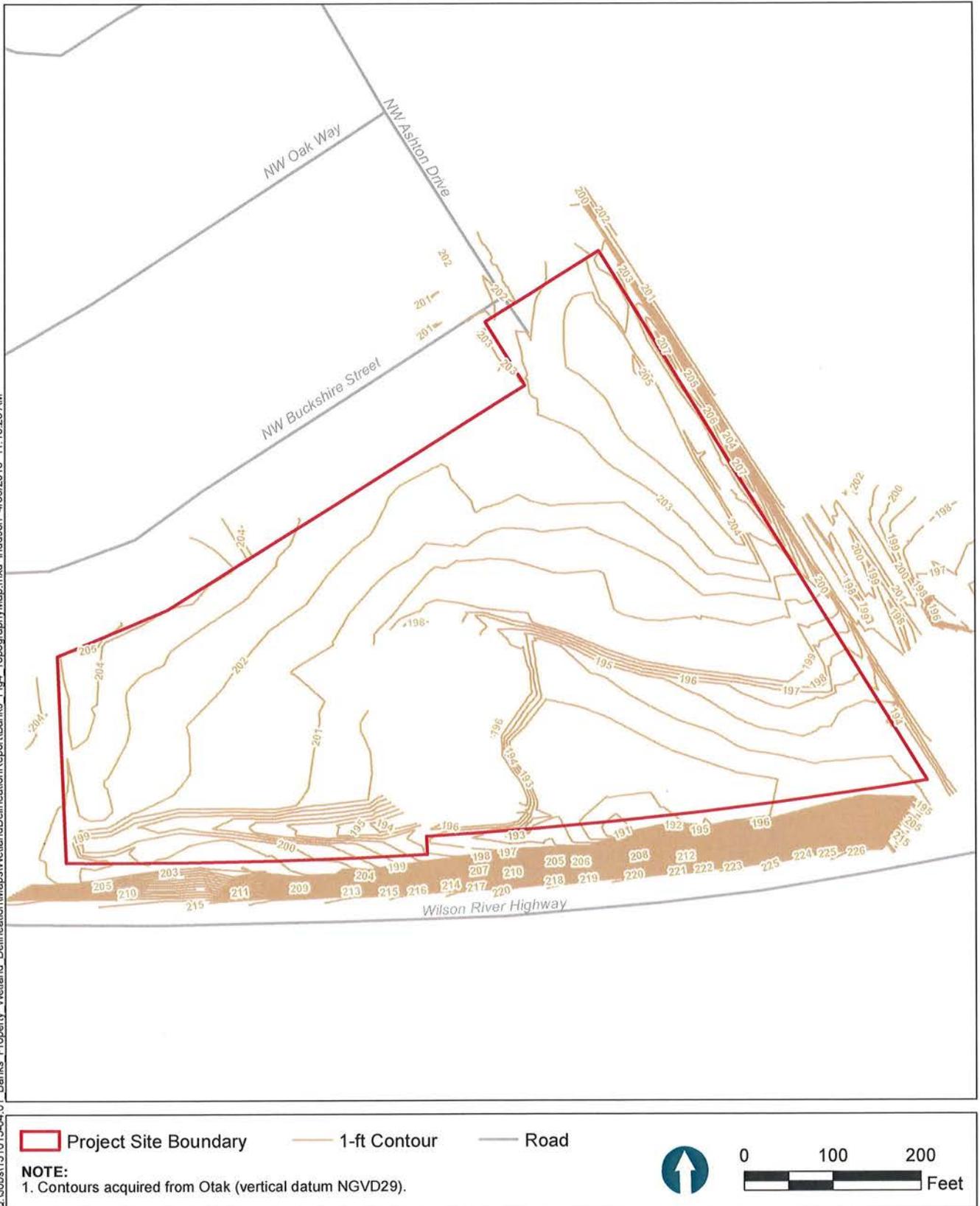


Figure 3
Tax Lot Map
Banks Property Wetland Delineation
Washington County, OR
Page 77 of 241

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Figure 5
National Wetlands Inventory Map
Banks Property Wetland Delineation
Washington County, OR
Page 79 of 241

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- Project Site Boundary
- Road
- Significant Wetland
- Water Quality/Detention Facility

NOTE:
1. City of Banks Draft LWI map acquired from DSL (2002).
Data is digitized from georeferenced map.

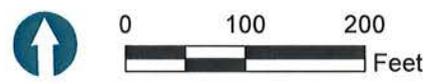
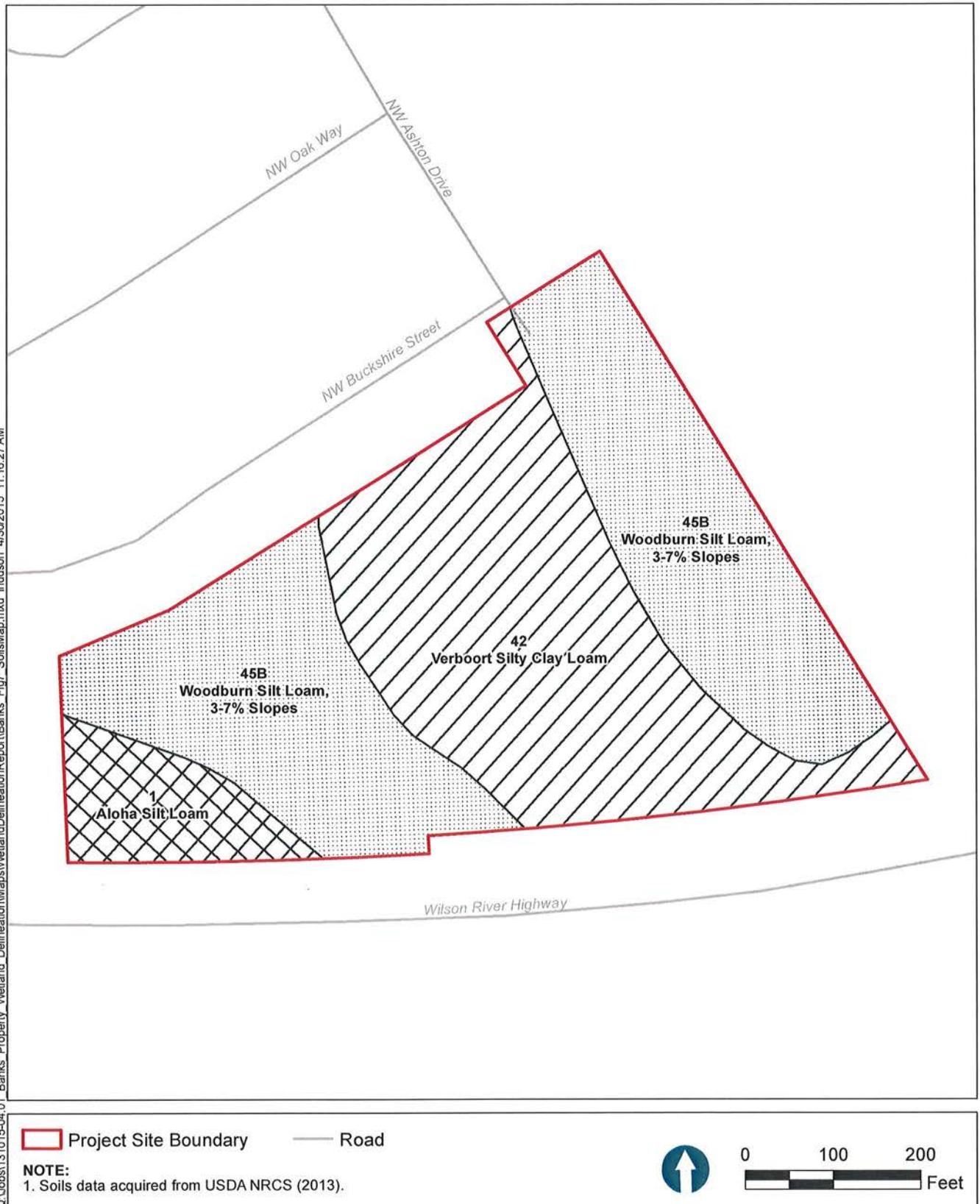
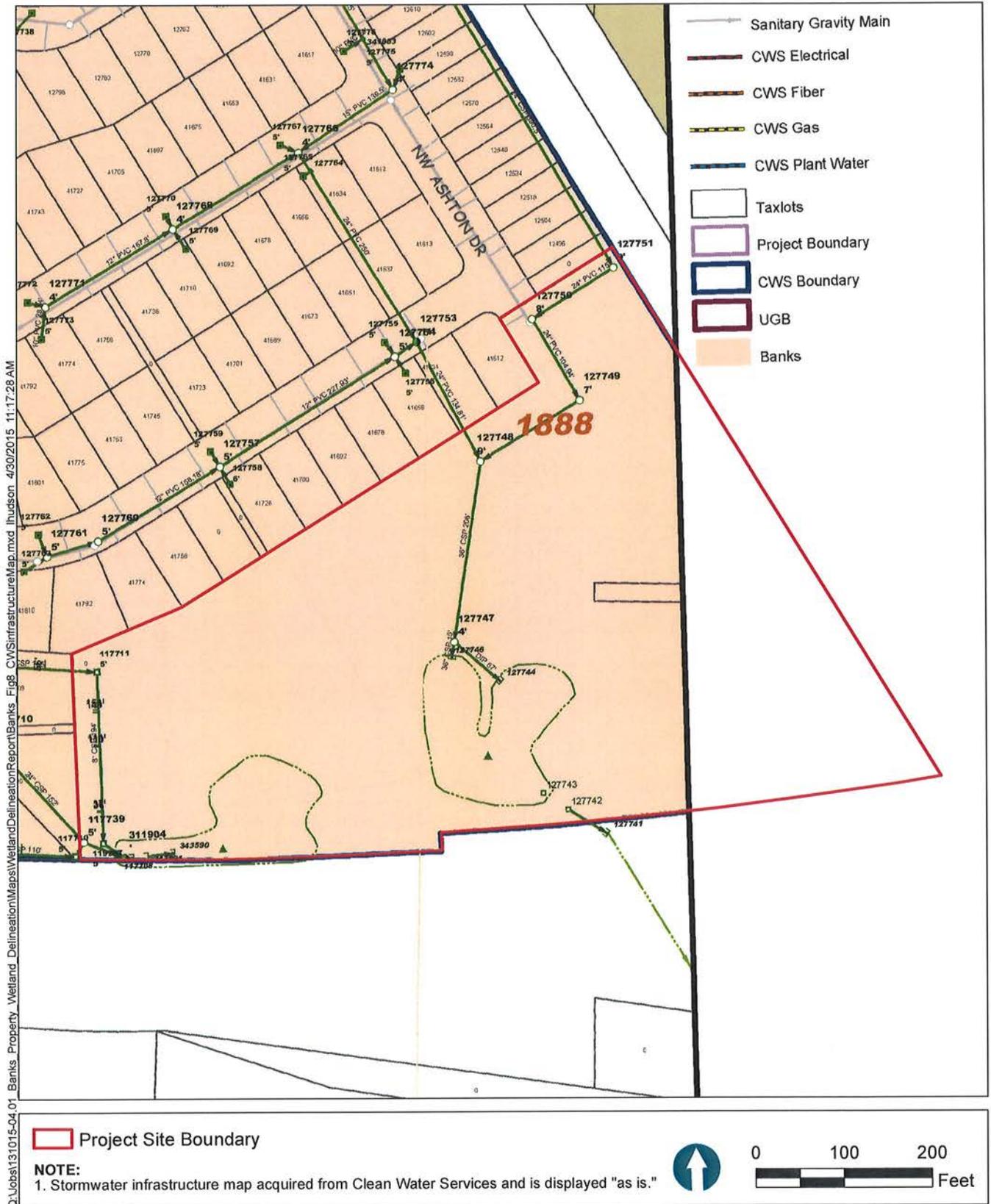


Figure 6
Draft DSL Local Wetlands Inventory Map
Banks Property Wetland Delineation
Washington County, OR
Page 80 of 241

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Figure 8
 Stormwater Infrastructure Map
 Banks Property Wetland Delineation
 Washington County, OR
 Page 82 of 241

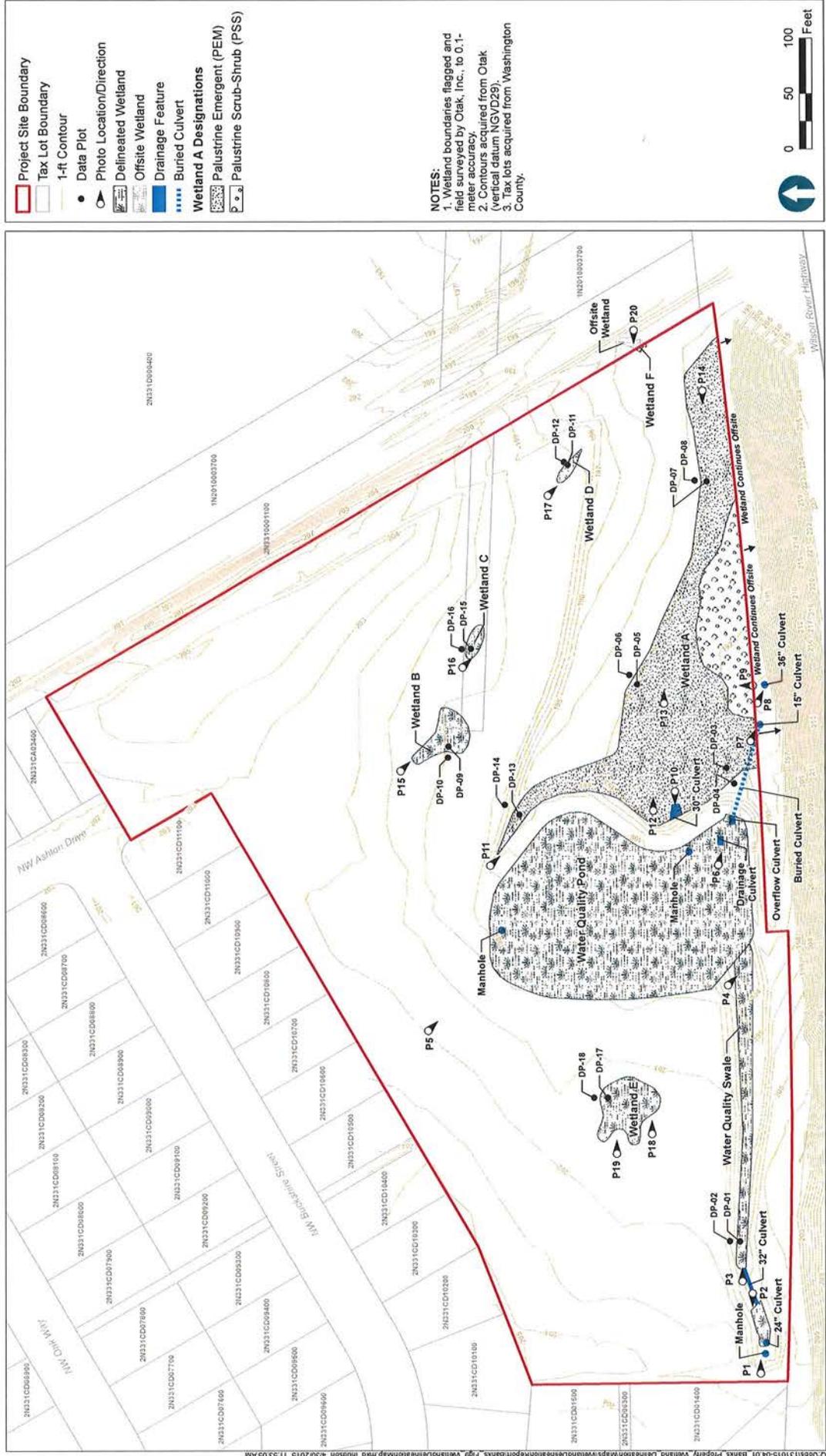


Figure 9
 Wetland Delineation and Photo Locations/Directions Map
 Banks Property Wetland Delineation
 Washington County, OR
 Page 83 of 241



APPENDIX A

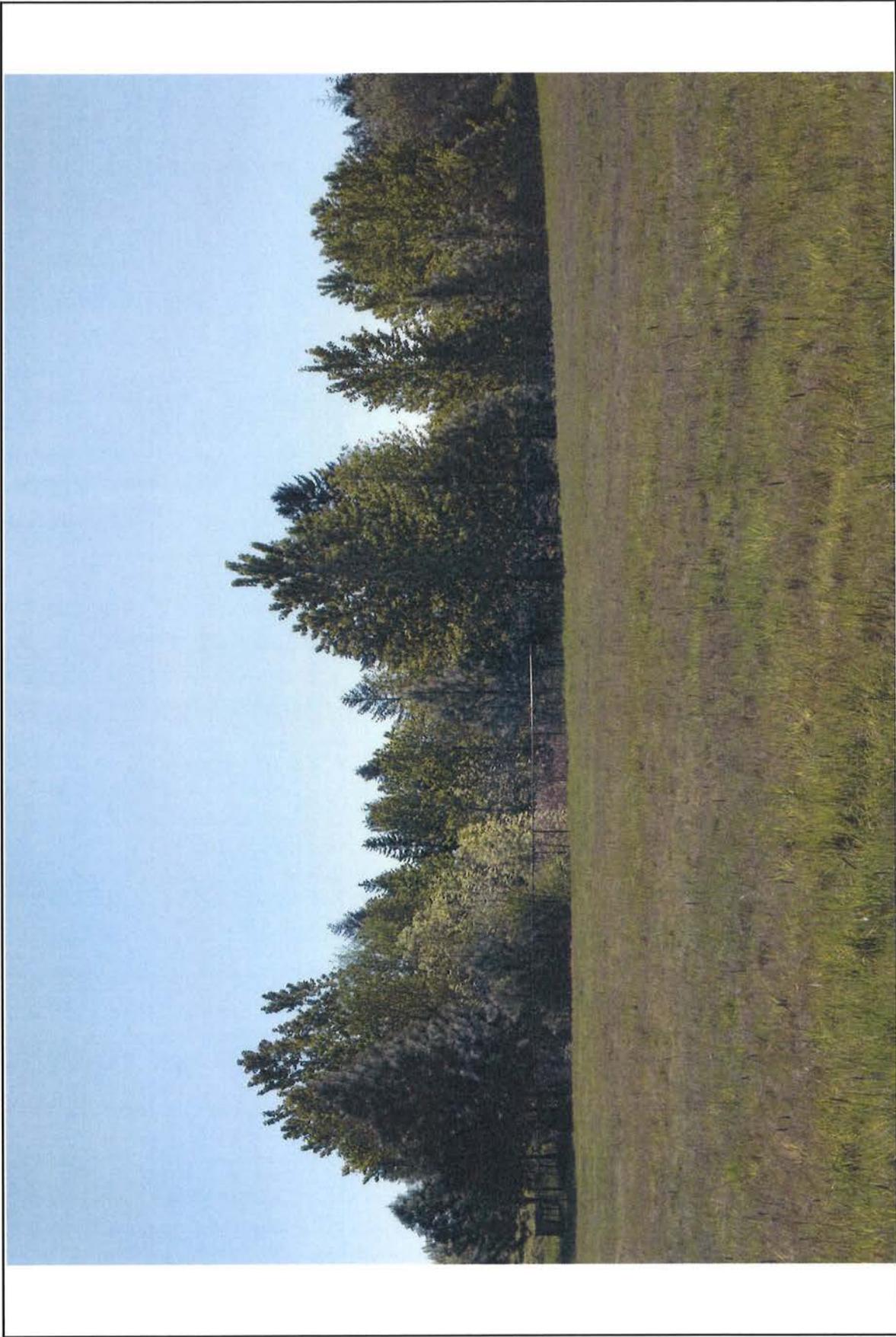
SITE PHOTOGRAPHS











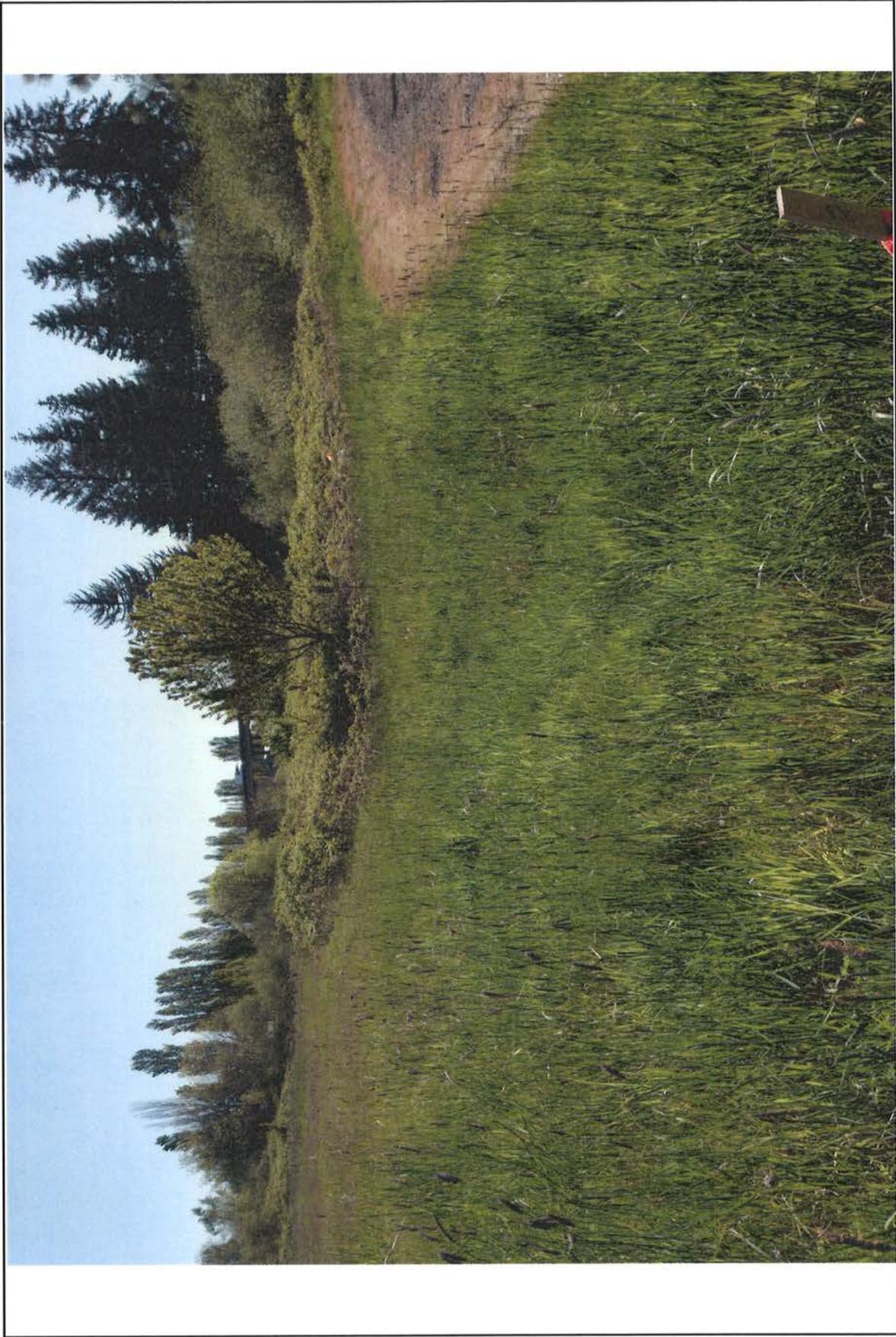


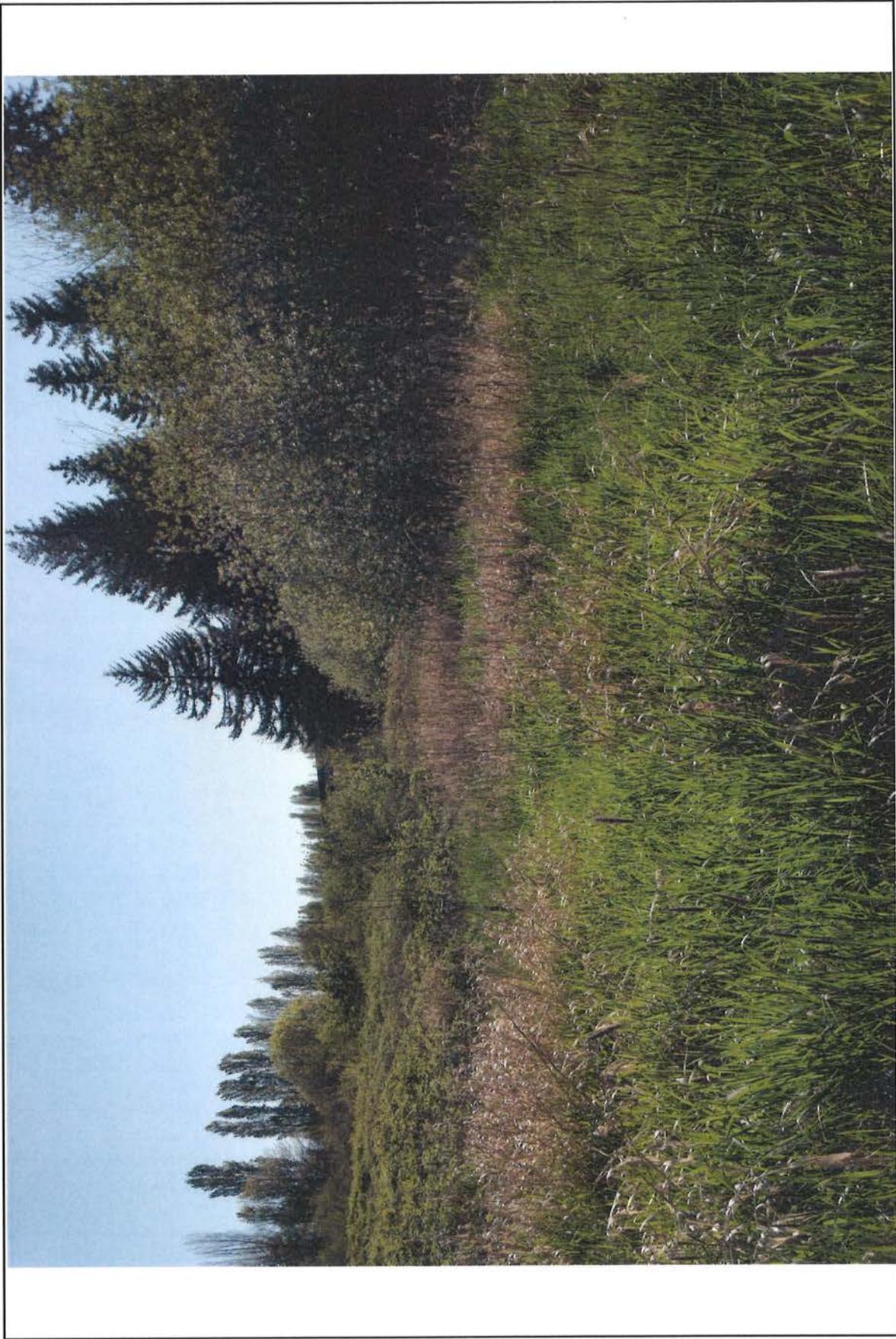
























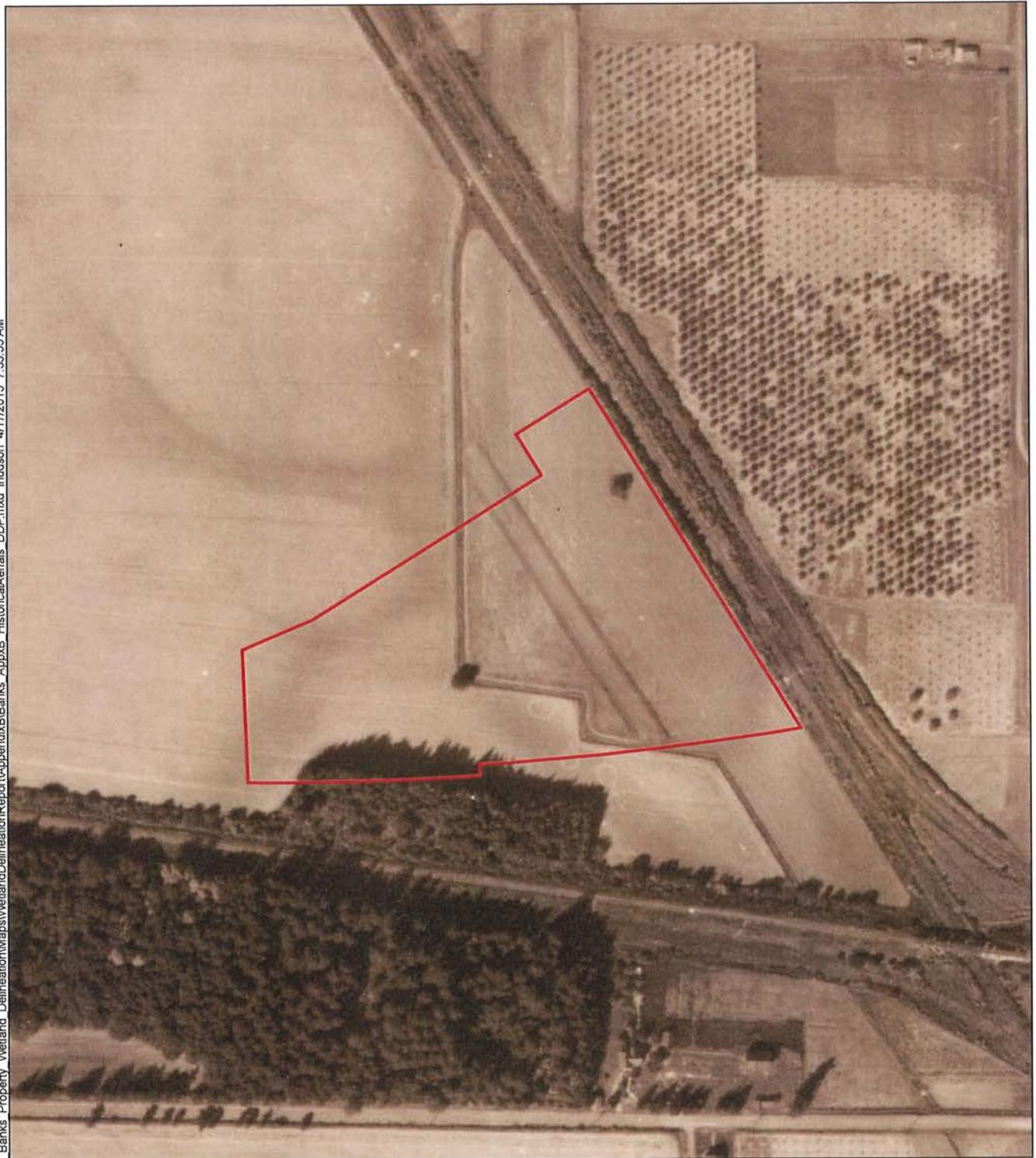




APPENDIX B

HISTORIC AERIAL PHOTOGRAPHS

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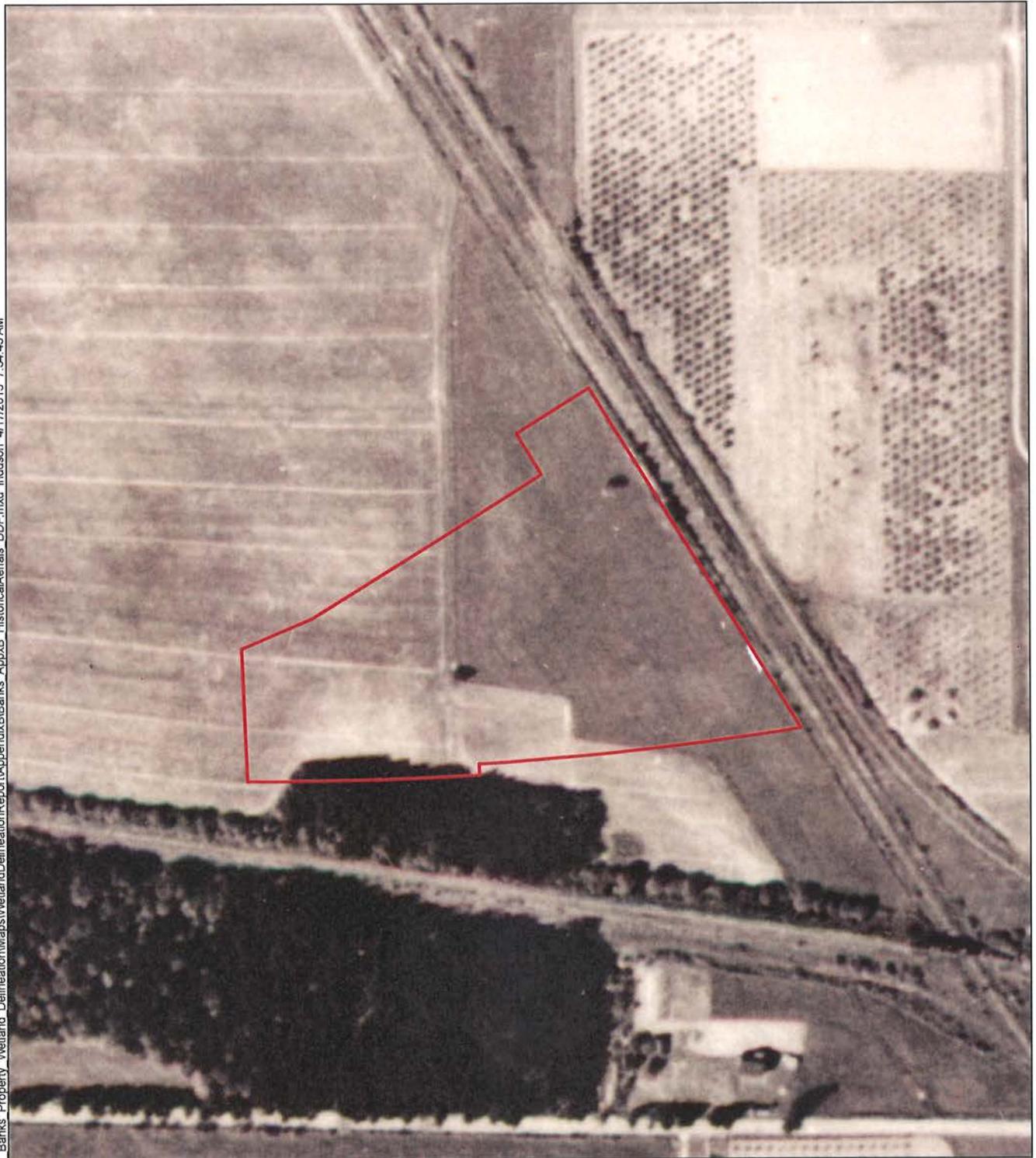
 Project Site Boundary

NOTE:
1. Aerial image acquired from US Army Corps of Engineers.



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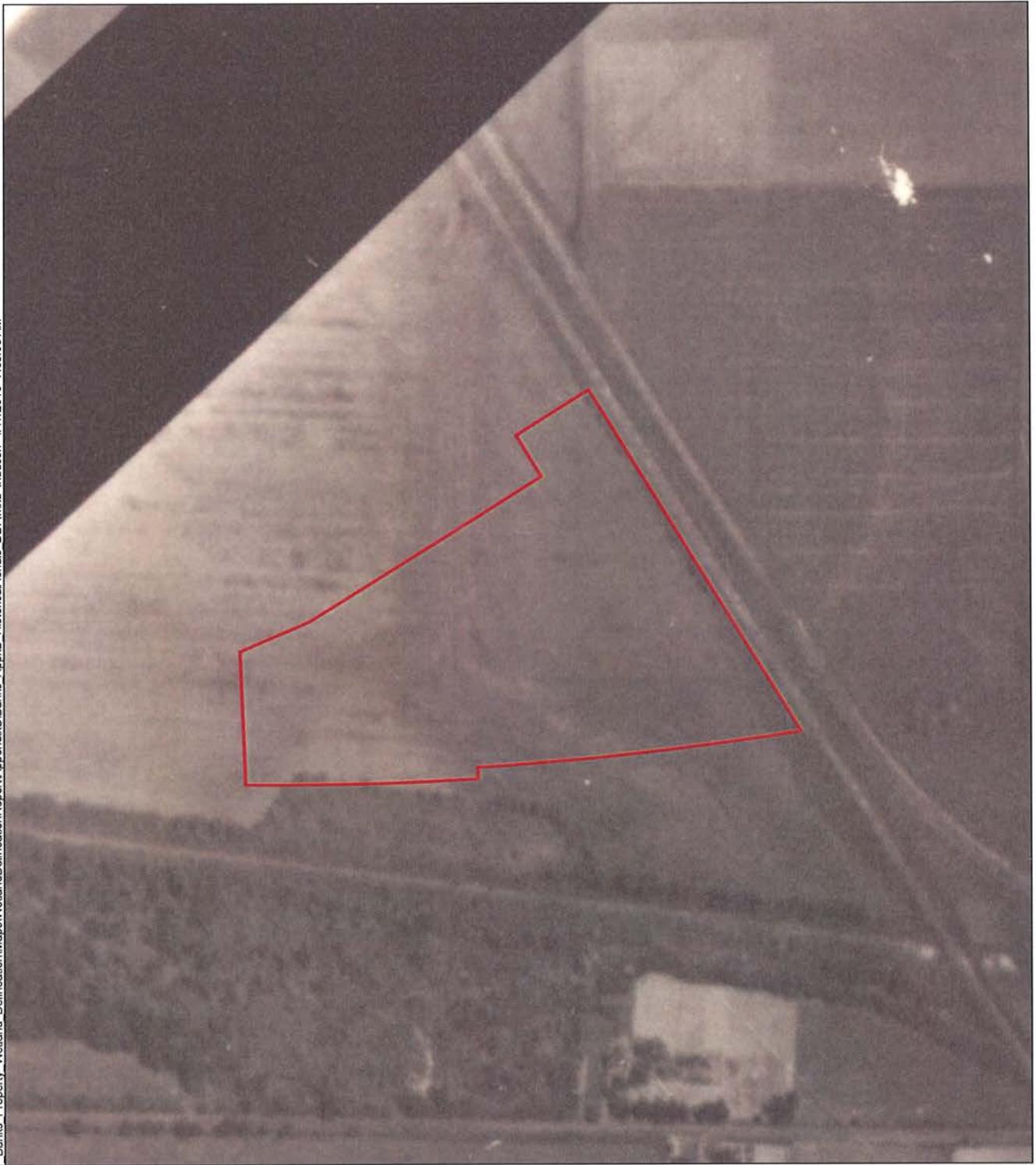
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NOTE:
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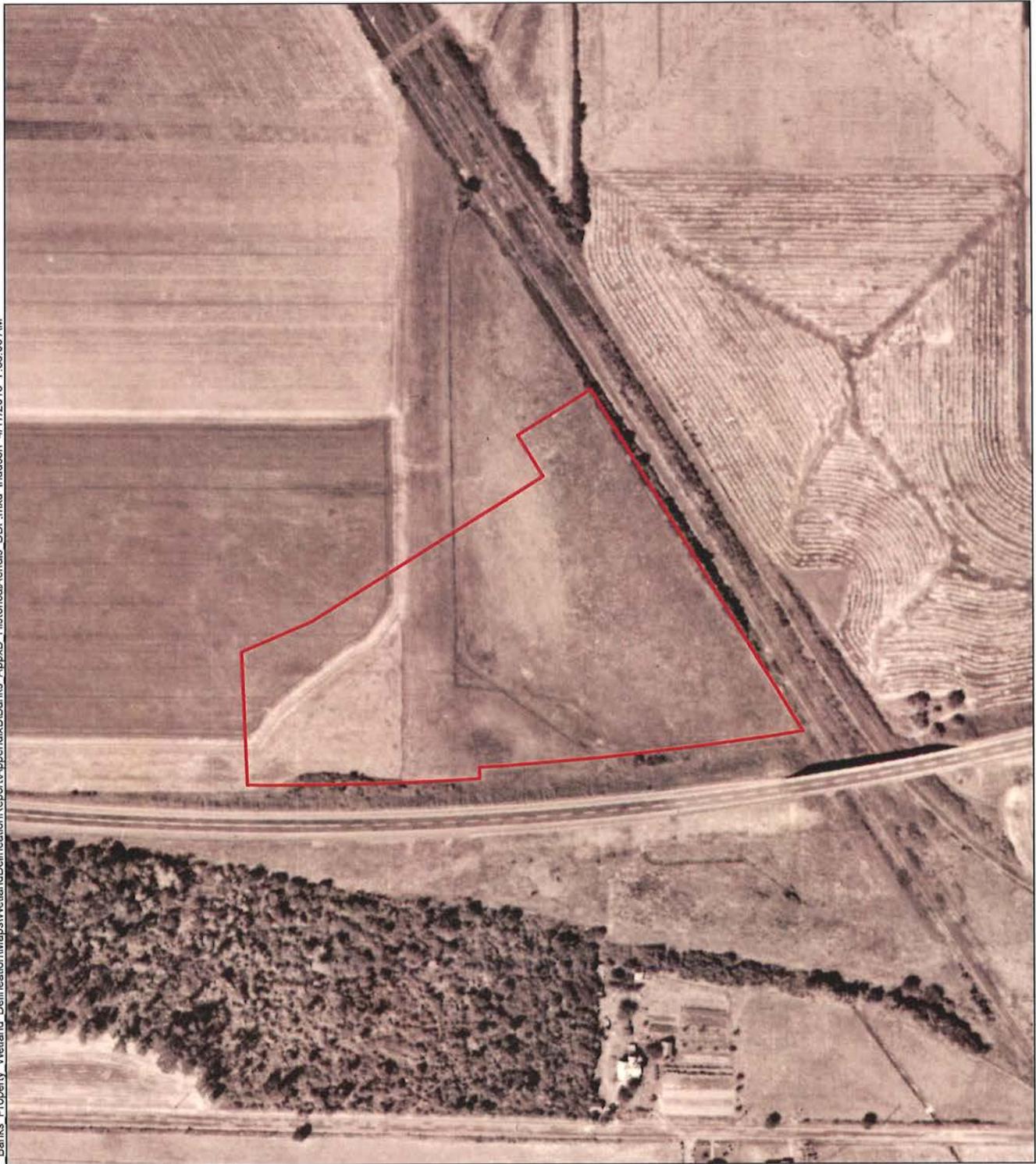
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NOTE:
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 Project Site Boundary

NOTE:
1. Aerial image acquired from US Army Corps of Engineers.



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Feet

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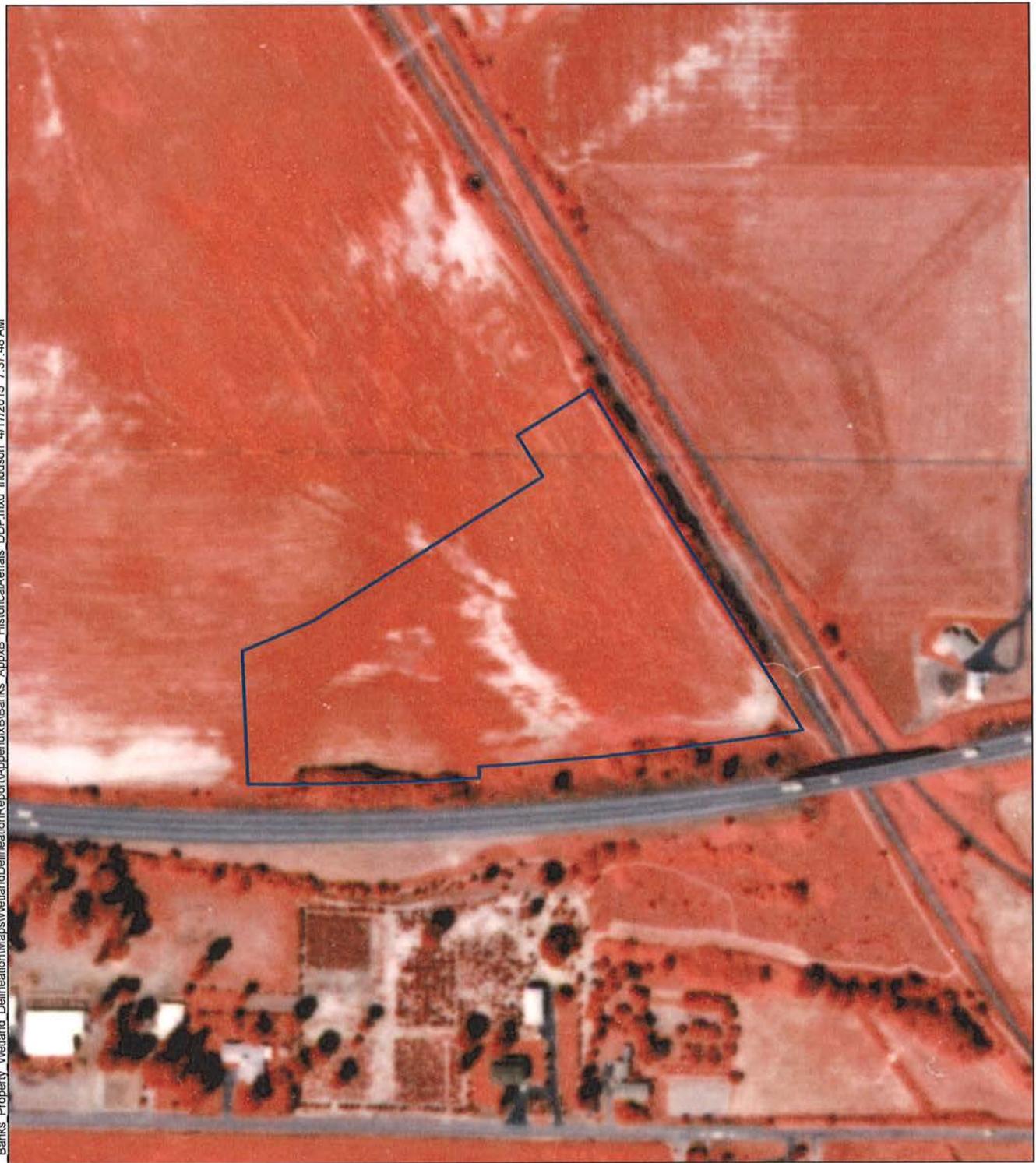
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NOTE:
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 Project Site Boundary

NOTE:
1. Aerial image acquired from US Army Corps of Engineers.



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Feet

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 Project Site Boundary

NOTE:
1. Aerial image acquired from US Army Corps of Engineers.



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 Project Site Boundary

NOTE:
1. Aerial image acquired from Google Earth.



0 200 400
Feet

APPENDIX C WEATHER DATA

Precip_Daily_20150213

National weather service - Climate DataThese data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>. Climatological Report (Daily)

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CDUS46 KPQR 141142
CLIHIO

CLIMATE REPORT
NATIONAL WEATHER SERVICE PORTLAND OREGON
341 AM PST SAT FEB 14 2015

.....
...THE HILLSBORO OR CLIMATE SUMMARY FOR FEBRUARY 13 2015...

CLIMATE NORMAL PERIOD 1981 TO 2010
CLIMATE RECORD PERIOD 1929 TO 2015

WEATHER ITEM	OBSERVED VALUE	TIME (LST)	RECORD VALUE	YEAR	NORMAL VALUE	DEPARTURE FROM NORMAL	LAST YEAR
.....							
TEMPERATURE (F)							
YESTERDAY							
MAXIMUM	53	204 PM	61	1996	51	2	54
MINIMUM	36	804 AM	18	1995	34	2	39
AVERAGE	45				42	3	47
PRECIPITATION (IN)							
YESTERDAY	0.00		1.06	1984	0.15	-0.15	
MONTH TO DATE	4.40				2.39	2.01	
SINCE OCT 1	22.24				24.84	-2.60	
SINCE JAN 1	7.41				8.45	-1.04	
SNOWFALL (IN)							
YESTERDAY	0.0						
MONTH TO DATE	0.0						
SINCE DEC 1	0.0						
SINCE JUL 1	0.0						
SNOW DEPTH	0						
DEGREE DAYS							
HEATING							
YESTERDAY	20				23	-3	
MONTH TO DATE	217				299	-82	
SINCE JUL 1	2426				3192	-766	
COOLING							
YESTERDAY	0				0	0	
MONTH TO DATE	0				0	0	
SINCE JAN 1	0				0	0	
.....							

WIND (MPH)
HIGHEST WIND SPEED 7 HIGHEST WIND DIRECTION NW (300)
HIGHEST GUST SPEED 8 HIGHEST GUST DIRECTION S (200)

AVERAGE WIND SPEED 2.2

SKY COVER

POSSIBLE SUNSHINE MM
AVERAGE SKY COVER 0.6

WEATHER CONDITIONS

THE FOLLOWING WEATHER WAS RECORDED YESTERDAY.
FOG
FOG W/VISIBILITY <= 1/4 MILE
HAZE

RELATIVE HUMIDITY (PERCENT)

HIGHEST 100 1200 AM
LOWEST 77 100 PM
AVERAGE 89

.....

THE HILLSBORO OR CLIMATE NORMALS FOR TODAY

	NORMAL	RECORD	YEAR
MAXIMUM TEMPERATURE (F)	51	65	1977
MINIMUM TEMPERATURE (F)	34	18	1936

SUNRISE AND SUNSET

FEBRUARY 14 2015.....	SUNRISE	715 AM PST	SUNSET	537 PM PST
FEBRUARY 15 2015.....	SUNRISE	714 AM PST	SUNSET	539 PM PST

- INDICATES NEGATIVE NUMBERS.
- R INDICATES RECORD WAS SET OR TIED.
- MM INDICATES DATA IS MISSING.
- T INDICATES TRACE AMOUNT.

The U.S. Naval Observatory (USNO) computes astronomical data. Therefore, the NWS does not record, certify, or authenticate astronomical data. Computed times of sunrise, sunset, moonrise, moonset; and twilight, moon phases and other astronomical data are available from USNO's Astronomical Applications Department (<http://www.usno.navy.mil>). See <http://www.usno.navy.mil/USNO/astronomical-applications/astronomical-information-center/litigation> for information on using these data for legal purposes.

Precip_Daily_20150216

National weather service - Climate Data These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.
 Climatological Report (Daily)

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 CDUS46 KPQR 171145
 CLIHIO

CLIMATE REPORT
 NATIONAL WEATHER SERVICE PORTLAND OREGON
 344 AM PST TUE FEB 17 2015

.....

...THE HILLSBORO OR CLIMATE SUMMARY FOR FEBRUARY 16 2015...

CLIMATE NORMAL PERIOD 1981 TO 2010
 CLIMATE RECORD PERIOD 1929 TO 2015

WEATHER ITEM	OBSERVED VALUE	TIME (LST)	RECORD VALUE	YEAR	NORMAL VALUE	DEPARTURE FROM NORMAL	LAST YEAR
--------------	----------------	------------	--------------	------	--------------	-----------------------	-----------

.....
 TEMPERATURE (F)

YESTERDAY							
MAXIMUM	62R	148 PM	61	1947	51	11	49
MINIMUM	36	617 AM	16	1956	34	2	37
AVERAGE	49				42	7	43

PRECIPITATION (IN)

YESTERDAY	0.00	1.63	1970	0.13	-0.13
MONTH TO DATE	4.40			2.80	1.60
SINCE OCT 1	22.24			25.25	-3.01
SINCE JAN 1	7.41			8.86	-1.45

SNOWFALL (IN)

YESTERDAY	0.0
MONTH TO DATE	0.0
SINCE DEC 1	0.0
SINCE JUL 1	0.0
SNOW DEPTH	0

DEGREE DAYS

HEATING			
YESTERDAY	16	23	-7
MONTH TO DATE	264	368	-104
SINCE JUL 1	2473	3261	-788

COOLING

YESTERDAY	0	0	0
MONTH TO DATE	0	0	0
SINCE JAN 1	0	0	0

.....

WIND (MPH)

HIGHEST WIND SPEED	23	HIGHEST WIND DIRECTION	NE (60)
HIGHEST GUST SPEED	29	HIGHEST GUST DIRECTION	E (70)

AVERAGE WIND SPEED 10.7

SKY COVER

POSSIBLE SUNSHINE MM
AVERAGE SKY COVER 0.0

WEATHER CONDITIONS

THE FOLLOWING WEATHER WAS RECORDED YESTERDAY.
NO SIGNIFICANT WEATHER WAS OBSERVED.

RELATIVE HUMIDITY (PERCENT)

HIGHEST MM
LOWEST MM
AVERAGE MM

.....

THE HILLSBORO OR CLIMATE NORMALS FOR TODAY

	NORMAL	RECORD	YEAR
MAXIMUM TEMPERATURE (F)	51	64	1948
MINIMUM TEMPERATURE (F)	34	15	1936

SUNRISE AND SUNSET

FEBRUARY 17 2015.....	SUNRISE	711 AM PST	SUNSET	542 PM PST
FEBRUARY 18 2015.....	SUNRISE	709 AM PST	SUNSET	543 PM PST

- INDICATES NEGATIVE NUMBERS.
- R INDICATES RECORD WAS SET OR TIED.
- MM INDICATES DATA IS MISSING.
- T INDICATES TRACE AMOUNT.

The U.S. Naval Observatory (USNO) computes astronomical data. Therefore, the NWS does not record, certify, or authenticate astronomical data. Computed times of sunrise, sunset, moonrise, moonset; and twilight, moon phases and other astronomical data are available from USNO's Astronomical Applications Department (<http://www.usno.navy.mil>). See <http://www.usno.navy.mil/USNO/astronomical-applications/astronomical-information-center/litigation> for information on using these data for legal purposes.

Precip_Daily_20150218

National weather service - Climate Data These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.
 Climatological Report (Daily)

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 CDUS46 KPQR 191142
 CLIHIO

CLIMATE REPORT
 NATIONAL WEATHER SERVICE PORTLAND OREGON
 341 AM PST THU FEB 19 2015

.....
 ...THE HILLSBORO OR CLIMATE SUMMARY FOR FEBRUARY 18 2015...

CLIMATE NORMAL PERIOD 1981 TO 2010
 CLIMATE RECORD PERIOD 1929 TO 2015

WEATHER ITEM	OBSERVED VALUE	TIME (LST)	RECORD VALUE	YEAR	NORMAL VALUE	DEPARTURE FROM NORMAL	LAST YEAR
.....							
TEMPERATURE (F)							
YESTERDAY							
MAXIMUM	57	504 PM	68	1977	51	6	50
MINIMUM	33	559 AM	21	1936	34	-1	37
AVERAGE	45				42	3	44
PRECIPITATION (IN)							
YESTERDAY	0.00		1.09	1968	0.12	-0.12	
MONTH TO DATE	4.40				3.05	1.35	
SINCE OCT 1	22.24				25.50	-3.26	
SINCE JAN 1	7.41				9.11	-1.70	
SNOWFALL (IN)							
YESTERDAY	0.0						
MONTH TO DATE	0.0						
SINCE DEC 1	0.0						
SINCE JUL 1	0.0						
SNOW DEPTH	0						
DEGREE DAYS							
HEATING							
YESTERDAY	20				23	-3	
MONTH TO DATE	300				414	-114	
SINCE JUL 1	2509				3307	-798	
COOLING							
YESTERDAY	0				0	0	
MONTH TO DATE	0				0	0	
SINCE JAN 1	0				0	0	
.....							

WIND (MPH)			
HIGHEST WIND SPEED	7	HIGHEST WIND DIRECTION	NW (320)
HIGHEST GUST SPEED	10	HIGHEST GUST DIRECTION	S (180)

Precip_Daily_20150218

AVERAGE WIND SPEED 1.3

SKY COVER

POSSIBLE SUNSHINE MM
AVERAGE SKY COVER 0.7

WEATHER CONDITIONS

THE FOLLOWING WEATHER WAS RECORDED YESTERDAY.
FOG

RELATIVE HUMIDITY (PERCENT)

HIGHEST 96 400 AM
LOWEST 71 100 PM
AVERAGE 84

.....

THE HILLSBORO OR CLIMATE NORMALS FOR TODAY

	NORMAL	RECORD	YEAR
MAXIMUM TEMPERATURE (F)	52	68	1977
MINIMUM TEMPERATURE (F)	34	16	2006

SUNRISE AND SUNSET

FEBRUARY 19 2015.....	SUNRISE	707 AM PST	SUNSET	544 PM PST
FEBRUARY 20 2015.....	SUNRISE	706 AM PST	SUNSET	546 PM PST

- INDICATES NEGATIVE NUMBERS.
- R INDICATES RECORD WAS SET OR TIED.
- MM INDICATES DATA IS MISSING.
- T INDICATES TRACE AMOUNT.

The U.S. Naval Observatory (USNO) computes astronomical data. Therefore, the NWS does not record, certify, or authenticate astronomical data. Computed times of sunrise, sunset, moonrise, moonset; and twilight, moon phases and other astronomical data are available from USNO's Astronomical Applications Department (<http://www.usno.navy.mil>). See <http://www.usno.navy.mil/USNO/astronomical-applications/astronomical-information-center/litigation> for information on using these data for legal purposes.

Precip_Daily_20150413

National weather Service - Climate Data These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>. Climatological Report (Daily)

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CDUS46 KPQR 141144
CLIHIO

CLIMATE REPORT
NATIONAL WEATHER SERVICE PORTLAND OREGON
443 AM PDT TUE APR 14 2015

.....

...THE HILLSBORO OR CLIMATE SUMMARY FOR APRIL 13 2015...

CLIMATE NORMAL PERIOD 1981 TO 2010
CLIMATE RECORD PERIOD 1929 TO 2015

WEATHER ITEM	OBSERVED VALUE	TIME (LST)	RECORD VALUE	YEAR	NORMAL VALUE	DEPARTURE FROM NORMAL	LAST YEAR
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TEMPERATURE (F)

YESTERDAY							
MAXIMUM	52	1223 PM	82	1951	60	-8	70
MINIMUM	36	1149 PM	26	1968	39	-3	36
AVERAGE	44				50	-6	53

PRECIPITATION (IN)

YESTERDAY	0.30		1.00	1937	0.09	0.21
MONTH TO DATE	1.18				1.44	-0.26
SINCE OCT 1	28.27				32.03	-3.76
SINCE JAN 1	13.44				15.64	-2.20

SNOWFALL (IN)

	MM
YESTERDAY	
MONTH TO DATE	0.0
SINCE MAR 1	0.0
SINCE JUL 1	0.0
SNOW DEPTH	0

DEGREE DAYS

HEATING	
YESTERDAY	21 15 6
MONTH TO DATE	234 211 23
SINCE JUL 1	3368 4325 -957

COOLING

YESTERDAY	0 0 0
MONTH TO DATE	0 0 0
SINCE JAN 1	0 0 0

.....

WIND (MPH)

HIGHEST WIND SPEED	22	HIGHEST WIND DIRECTION	NW (310)
HIGHEST GUST SPEED	26	HIGHEST GUST DIRECTION	NW (320)

AVERAGE WIND SPEED 3.9

SKY COVER

POSSIBLE SUNSHINE MM
AVERAGE SKY COVER 0.9

WEATHER CONDITIONS

THE FOLLOWING WEATHER WAS RECORDED YESTERDAY.
HEAVY RAIN
RAIN
LIGHT RAIN
FOG

RELATIVE HUMIDITY (PERCENT)

HIGHEST 93 500 AM
LOWEST 68 1000 AM
AVERAGE 81

.....

THE HILLSBORO OR CLIMATE NORMALS FOR TODAY

	NORMAL	RECORD	YEAR
MAXIMUM TEMPERATURE (F)	60	87	1947
MINIMUM TEMPERATURE (F)	39	30	2009

SUNRISE AND SUNSET

APRIL 14 2015.....SUNRISE 628 AM PDT SUNSET 757 PM PDT
APRIL 15 2015.....SUNRISE 627 AM PDT SUNSET 758 PM PDT

- INDICATES NEGATIVE NUMBERS.
- R INDICATES RECORD WAS SET OR TIED.
- MM INDICATES DATA IS MISSING.
- T INDICATES TRACE AMOUNT.

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Precip_Daily_201504117

National weather service - Climate Data These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.
 Climatological Report (Daily)

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 CDUS46 KPQR 181142
 CLIHIO

CLIMATE REPORT
 NATIONAL WEATHER SERVICE PORTLAND OREGON
 441 AM PDT SAT APR 18 2015

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...THE HILLSBORO OR CLIMATE SUMMARY FOR APRIL 17 2015...

CLIMATE NORMAL PERIOD 1981 TO 2010
 CLIMATE RECORD PERIOD 1929 TO 2015

WEATHER ITEM	OBSERVED VALUE	TIME (LST)	RECORD VALUE	YEAR	NORMAL VALUE	DEPARTURE FROM NORMAL	LAST YEAR
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TEMPERATURE (F)

YESTERDAY							
MAXIMUM	74	301 PM	82	1939	61	13	55
MINIMUM	39	441 AM	25	1964	39	0	39
AVERAGE	57				50	7	47

PRECIPITATION (IN)

YESTERDAY	0.00		0.58	1958	0.09	-0.09	
MONTH TO DATE	1.25				1.81	-0.56	
SINCE OCT 1	28.34				32.40	-4.06	
SINCE JAN 1	13.51				16.01	-2.50	

SNOWFALL (IN)

YESTERDAY	0.0
MONTH TO DATE	0.0
SINCE MAR 1	0.0
SINCE JUL 1	0.0
SNOW DEPTH	0

DEGREE DAYS

HEATING							
YESTERDAY	8				15	-7	
MONTH TO DATE	293				271	22	
SINCE JUL 1	3427				4385	-958	

COOLING

YESTERDAY	0				0	0	
MONTH TO DATE	0				0	0	
SINCE JAN 1	0				0	0	

.....

WIND (MPH)

HIGHEST WIND SPEED	22	HIGHEST WIND DIRECTION	NW (310)
HIGHEST GUST SPEED	27	HIGHEST GUST DIRECTION	NW (300)

AVERAGE WIND SPEED 6.5

SKY COVER

POSSIBLE SUNSHINE MM
AVERAGE SKY COVER 0.0

WEATHER CONDITIONS

THE FOLLOWING WEATHER WAS RECORDED YESTERDAY.
HAZE

RELATIVE HUMIDITY (PERCENT)

HIGHEST 93 300 AM
LOWEST 31 400 PM
AVERAGE 62

THE HILLSBORO OR CLIMATE NORMALS FOR TODAY

	NORMAL	RECORD	YEAR
MAXIMUM TEMPERATURE (F)	61	84	1934
MINIMUM TEMPERATURE (F)	39	29	2011 1964

SUNRISE AND SUNSET

APRIL 18 2015.....SUNRISE 621 AM PDT SUNSET 802 PM PDT
APRIL 19 2015.....SUNRISE 620 AM PDT SUNSET 803 PM PDT

- INDICATES NEGATIVE NUMBERS.
- R INDICATES RECORD WAS SET OR TIED.
- MM INDICATES DATA IS MISSING.
- T INDICATES TRACE AMOUNT.

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Precip_Monthly_2012_Oct

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
MONTH: OCTOBER
YEAR: 2012
LATITUDE: 45 32 N
LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 53.1
DPTR FM NORMAL: 1.6
HIGHEST: 86 ON 1
LOWEST: 33 ON 8

[PRECIPITATION DATA]

TOTAL FOR MONTH: 5.45
DPTR FM NORMAL: 2.27
GRTST 24HR 0.96 ON 12-12
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY
TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 0
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 19
0.10 INCH OR MORE: 12
0.50 INCH OR MORE: 2
1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 363
DPTR FM NORMAL -56
TOTAL FM JUL 1 543
DPTR FM NORMAL -138

CLEAR (SCALE 0-3) 12
PTCLDY (SCALE 4-7) 7
CLOUDY (SCALE 8-10) 12

[CDD (BASE 65)]

TOTAL THIS MO. 0
DPTR FM NORMAL -1
TOTAL FM JAN 1 232
DPTR FM NORMAL 34

[PRESSURE DATA]

HIGHEST SLP 30.43 ON 25
LOWEST SLP 29.57 ON 22

[REMARKS]

#FINAL-10-12#

Precip_Monthly_2012_Nov

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
 MONTH: NOVEMBER
 YEAR: 2012
 LATITUDE: 45 32 N
 LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 46.0
 DPTR FM NORMAL: 1.5
 HIGHEST: 69 ON 4
 LOWEST: 29 ON 10

[PRECIPITATION DATA]

TOTAL FOR MONTH: 7.59
 DPTR FM NORMAL: 1.12
 GRTST 24HR 2.53 ON 18-19
 SNOW, ICE PELLETS, HAIL
 TOTAL MONTH: 0.0 INCH
 GRTST 24HR 0.0
 GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
 2 = FOG REDUCING VISIBILITY
 TO 1/4 MILE OR LESS
 3 = THUNDER
 4 = ICE PELLETS
 5 = HAIL
 6 = FREEZING RAIN OR DRIZZLE
 7 = DUSTSTORM OR SANDSTORM:
 VSBY 1/2 MILE OR LESS
 8 = SMOKE OR HAZE
 9 = BLOWING SNOW
 X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
 MAX 90 OR ABOVE: 0
 MIN 32 OR BELOW: 8
 MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 21
 0.10 INCH OR MORE: 12
 0.50 INCH OR MORE: 5
 1.00 INCH OR MORE: 1

[HDD (BASE 65)]

TOTAL THIS MO. 564
 DPTR FM NORMAL -56
 TOTAL FM JUL 1 1107
 DPTR FM NORMAL -194

CLEAR (SCALE 0-3) 3
 PTCLDY (SCALE 4-7) 11
 CLOUDY (SCALE 8-10) 16

[CDD (BASE 65)]

TOTAL THIS MO. 0
 DPTR FM NORMAL 0
 TOTAL FM JAN 1 232
 DPTR FM NORMAL 34

[PRESSURE DATA]

HIGHEST SLP 30.38 ON 22
 LOWEST SLP 29.42 ON 30

[REMARKS]

#FINAL-11-12#

Precip_Monthly_2012_Dec

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
 MONTH: DECEMBER
 YEAR: 2012
 LATITUDE: 45 32 N
 LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 40.6
 DPTR FM NORMAL: 2.1
 HIGHEST: 54 ON 4
 LOWEST: 24 ON 30

[PRECIPITATION DATA]

TOTAL FOR MONTH: 7.50
 DPTR FM NORMAL: 0.76
 GRTST 24HR 0.87 ON 16-16
 SNOW, ICE PELLETS, HAIL
 TOTAL MONTH: 0.0 INCH
 GRTST 24HR 0.0
 GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
 2 = FOG REDUCING VISIBILITY
 TO 1/4 MILE OR LESS
 3 = THUNDER
 4 = ICE PELLETS
 5 = HAIL
 6 = FREEZING RAIN OR DRIZZLE
 7 = DUSTSTORM OR SANDSTORM;
 VSBY 1/2 MILE OR LESS
 8 = SMOKE OR HAZE
 9 = BLOWING SNOW
 X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
 MAX 90 OR ABOVE: 0
 MIN 32 OR BELOW: 7
 MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 26
 0.10 INCH OR MORE: 15
 0.50 INCH OR MORE: 7
 1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 750
 DPTR FM NORMAL -70
 TOTAL FM JUL 1 1857
 DPTR FM NORMAL -264

CLEAR (SCALE 0-3) 1
 PTCLDY (SCALE 4-7) 5
 CLOUDY (SCALE 8-10) 25

[CDD (BASE 65)]

TOTAL THIS MO. 0
 DPTR FM NORMAL 0
 TOTAL FM JAN 1 232
 DPTR FM NORMAL 34

[PRESSURE DATA]

HIGHEST SLP M ON M
 LOWEST SLP 29.14 ON 16

[REMARKS]

#FINAL-12-12#

Precip_Monthly_2013_Jan

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
MONTH: JANUARY
YEAR: 2013
LATITUDE: 45 32 N
LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 36.2
DPTR FM NORMAL: -3.9
HIGHEST: 54 ON 7
LOWEST: 20 ON 22

[PRECIPITATION DATA]

TOTAL FOR MONTH: 1.47
DPTR FM NORMAL: -4.59
GRTST 24HR 0.23 ON 28-28
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

- 1 = FOG OR MIST
- 2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
- 3 = THUNDER
- 4 = ICE PELLETS
- 5 = HAIL
- 6 = FREEZING RAIN OR DRIZZLE
- 7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
- 8 = SMOKE OR HAZE
- 9 = BLOWING SNOW
- X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 3
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 21
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 14
0.10 INCH OR MORE: 7
0.50 INCH OR MORE: 0
1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 885
DPTR FM NORMAL 113
TOTAL FM JUL 1 2742
DPTR FM NORMAL -151

CLEAR (SCALE 0-3) 4
PTCLDY (SCALE 4-7) 7
CLOUDY (SCALE 8-10) 20

[CDD (BASE 65)]

TOTAL THIS MO. 0
DPTR FM NORMAL 0
TOTAL FM JAN 1 0
DPTR FM NORMAL 0

[PRESSURE DATA]

HIGHEST SLP 30.68 ON 15
LOWEST SLP 29.69 ON 9

[REMARKS]

#FINAL-01-13#

Precip_Monthly_2013_Feb

National weather Service - Climate Data
 Explanation of the Preliminary Monthly Climate Data (F6) Product
 These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.
 WFO Monthly/Daily Climate Data

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 CXUS55 KPQR 011230
 CF6HIO
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: HILLSBORO OR
 MONTH: FEBRUARY
 YEAR: 2013
 LATITUDE: 45 32 N
 LONGITUDE: 122 57 W

TEMPERATURE IN F:					:PCPN:			SNOW:	WIND			:SUNSHINE:			SKY	:PK WND		
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
									12Z AVG MX 2MIN									
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	55	33	44	2	21	0	0.00	0.0	0	3.1	8	70	M	M	6	128	10	70
2	56	29	43	1	22	0	0.00	0.0	0	3.3	7	130	M	M	0	1	8	170
3	44	31	38	-4	27	0	0.00	0.0	0	1.3	6	310	M	M	9	12	6	310
4	50	38	44	2	21	0	0.00	0.0	0	1.2	8	150	M	M	7	128	10	150
5	52	37	45	3	20	0	0.08	M	0	10.5	17	200	M	M	8	1	26	200
6	50	38	44	2	21	0	0.07	M	0	9.8	18	170	M	M	8		27	160
7	47	32	40	-2	25	0	0.44	M	0	5.2	14	180	M	M	7	1	20	180
8	49	25	37	-5	28	0	T	M	0	3.4	14	310	M	M	4	1	16	340
9	44	31	38	-4	27	0	0.02	M	0	0.9	6	210	M	M	9	18	6	210
10	46	34	40	-2	25	0	0.00	0.0	0	3.3	10	320	M	M	10	12	12	320
11	46	40	43	1	22	0	T	M	0	2.3	10	150	M	M	10	18	12	140
12	54	43	49	7	16	0	T	M	0	3.6	10	210	M	M	10	1	14	210
13	54	43	49	7	16	0	T	M	0	3.7	9	280	M	M	10		11	190
14	51	35	43	1	22	0	0.00	0.0	0	3.0	10	60	M	M	9		11	50
15	63	35	49	7	16	0	0.00	0.0	0	2.3	10	40	M	M	3	1	14	50
16	51	33	42	0	23	0	0.02	M	0	5.1	16	310	M	M	6	1	20	310
17	48	31	40	-2	25	0	T	M	0	2.3	7	310	M	M	8	1	11	180
18	46	30	38	-4	27	0	0.05	M	0	4.3	15	160	M	M	8	1	18	160
19	53	33	43	0	22	0	0.05	M	0	5.5	14	330	M	M	6		18	310
20	47	30	39	-4	26	0	0.01	M	0	3.0	14	200	M	M	8		19	190
21	45	34	40	-3	25	0	0.03	M	0	5.9	15	190	M	M	10	1	22	180
22	48	34	41	-2	24	0	0.63	M	0	10.6	23	170	M	M	8	1	29	160
23	46	32	39	-4	26	0	0.17	M	0	5.0	20	310	M	M	6	1	24	330
24	51	34	43	0	22	0	0.00	0.0	0	6.0	16	170	M	M	9		21	150
25	50	29	40	-3	25	0	0.17	M	0	6.6	22	290	M	M	7	1	28	300
26	49	27	38	-5	27	0	0.00	0.0	0	2.5	12	150	M	M	7	12	16	170
27	49	38	44	0	21	0	0.07	M	0	2.1	12	150	M	M	10	1	15	150
28	57	46	52	8	13	0	0.06	M	0	8.6	16	220	M	M	10	1	20	220
SM	1401	955			635	0	1.87		0.0	124.4			M		213			
AV	50.0	34.1								4.4	FASTST		M	M	8	MAX(MPH)		
								MISC	---->	#	23	170				#	29	160

NOTES:
 # LAST OF SEVERAL OCCURRENCES

Precip_Monthly_2013_Feb

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
 MONTH: FEBRUARY
 YEAR: 2013
 LATITUDE: 45 32 N
 LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 42.1
 DPTR FM NORMAL: -0.2
 HIGHEST: 63 ON 15
 LOWEST: 25 ON 8

[PRECIPITATION DATA]

TOTAL FOR MONTH: 1.87
 DPTR FM NORMAL: -2.54
 GRTST 24HR 0.71 ON 22-23
 SNOW, ICE PELLETS, HAIL
 TOTAL MONTH: 0.0 INCH
 GRTST 24HR 0.0
 GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
 2 = FOG REDUCING VISIBILITY
 TO 1/4 MILE OR LESS
 3 = THUNDER
 4 = ICE PELLETS
 5 = HAIL
 6 = FREEZING RAIN OR DRIZZLE
 7 = DUSTSTORM OR SANDSTORM:
 VSBY 1/2 MILE OR LESS
 8 = SMOKE OR HAZE
 9 = BLOWING SNOW
 X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
 MAX 90 OR ABOVE: 0
 MIN 32 OR BELOW: 11
 MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 14
 0.10 INCH OR MORE: 4
 0.50 INCH OR MORE: 1
 1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 635
 DPTR FM NORMAL 1
 TOTAL FM JUL 1 3377
 DPTR FM NORMAL -150

CLEAR (SCALE 0-3) 1
 PTCLDY (SCALE 4-7) 15
 CLOUDY (SCALE 8-10) 12

[CDD (BASE 65)]

TOTAL THIS MO. 0
 DPTR FM NORMAL 0
 TOTAL FM JAN 1 0
 DPTR FM NORMAL 0

[PRESSURE DATA]

HIGHEST SLP 30.57 ON 14
 LOWEST SLP 29.70 ON 19

[REMARKS]

#FINAL-02-13#

Precip_Monthly_2013_March

National weather service - Climate DataExplanation of the Preliminary Monthly Climate Data (F6) Product

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

WFO Monthly/Daily Climate Data

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CXUS55 KPQR 011230

CF6HIO

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: HILLSBORO OR
 MONTH: MARCH
 YEAR: 2013
 LATITUDE: 45 32 N
 LONGITUDE: 122 57 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
									12Z	AVG	MX	2MIN						
1	60	48	54	10	11	0	0.00	0.0	0	6.6	13	170	M	M	8		16	190
2	56	40	48	4	17	0	0.01	M	0	5.2	21	310	M	M	9	1	27	300
3	49	28	39	-5	26	0	0.02	M	0	2.2	15	320	M	M	5		17	320
4	57	26	42	-2	23	0	0.00	0.0	0	4.4	14	80	M	M	0	1	18	90
5	46	31	39	-5	26	0	0.43	M	0	4.9	13	90	M	M	9	1	17	90
6	45	40	43	-2	22	0	0.19	M	0	6.9	16	170	M	M	10	1	20	160
7	55	35	45	0	20	0	0.00	0.0	0	3.3	8	330	M	M	4		11	330
8	60	28	44	-1	21	0	0.00	0.0	0	2.7	8	300	M	M	1	12	11	50
9	58	28	43	-2	22	0	0.00	0.0	0	1.6	8	210	M	M	0		13	200
10	49	33	41	-4	24	0	T	M	0	1.0	7	30	M	M	8	1	7	30
11	55	41	48	3	17	0	T	M	0	2.2	9	170	M	M	10	18	11	160
12	60	43	52	6	13	0	T	M	0	4.0	13	160	M	M	8	12	17	170
13	63	45	54	8	11	0	0.00	0.0	0	1.6	8	50	M	M	5		10	60
14	57	44	51	5	14	0	T	M	0	4.0	15	220	M	M	5	1	19	220
15	61	41	51	5	14	0	0.01	M	0	3.3	14	270	M	M	7	1	17	280
16	52	38	45	-1	20	0	0.06	M	0	7.3	21	320	M	M	8		25	320
17	50	33	42	-4	23	0	T	M	0	5.6	16	270	M	M	7		21	280
18	53	30	42	-4	23	0	0.00	0.0	0	2.1	13	30	M	M	3	8	17	20
19	49	34	42	-5	23	0	0.61	M	0	2.4	13	140	M	M	7	1	15	140
20	52	38	45	-2	20	0	0.28	M	0	11.7	26	230	M	M	9	1	39	210
21	50	34	42	-5	23	0	0.09	M	0	7.9	21	310	M	M	8	1	26	310
22	47	29	38	-9	27	0	0.04	M	0	2.6	17	300	M	M	6	12	22	340
23	49	31	40	-7	25	0	0.00	0.0	0	1.6	8	30	M	M	2	1	12	30
24	56	33	45	-2	20	0	0.00	0.0	0	4.5	13	50	M	M	6		17	90
25	60	36	48	1	17	0	0.06	M	0	3.3	10	100	M	M	5		14	80
26	52	37	45	-3	20	0	T	M	0	0.9	7	310	M	M	8	18	9	110
27	65	39	52	4	13	0	T	M	0	2.4	13	270	M	M	8	1	16	250
28	64	41	53	5	12	0	T	M	0	2.4	12	290	M	M	9	128	13	290
29	67	45	56	8	9	0	0.01	M	0	2.6	8	300	M	M	7	1	11	70
30	76	39	58	10	7	0	0.00	0.0	0	2.0	9	50	M	M	0		12	50
31	73	41	57	9	8	0	0.00	0.0	0	3.5	13	290	M	M	1		15	290
SM	1746	1129			571	0	1.81		0.0	116.7			M		183			
AV	56.3	36.4								3.8	FASTST		M	M	6		MAX(MPH)	
											MISC ---->	# 26 230					# 39	210

Precip_Monthly_2013_March

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
MONTH: MARCH
YEAR: 2013
LATITUDE: 45 32 N
LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 46.4
DPTR FM NORMAL: 0.3
HIGHEST: 76 ON 30
LOWEST: 26 ON 4

[PRECIPITATION DATA]

TOTAL FOR MONTH: 1.81
DPTR FM NORMAL: -1.92
GRTST 24HR 0.61 ON 19-19
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY
TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 8
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 12
0.10 INCH OR MORE: 4
0.50 INCH OR MORE: 1
1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 571
DPTR FM NORMAL -16
TOTAL FM JUL 1 3948
DPTR FM NORMAL -166

CLEAR (SCALE 0-3) 6
PTCLDY (SCALE 4-7) 17
CLOUDY (SCALE 8-10) 8

[CDD (BASE 65)]

TOTAL THIS MO. 0
DPTR FM NORMAL 0
TOTAL FM JAN 1 0
DPTR FM NORMAL 0

[PRESSURE DATA]

HIGHEST SLP 30.51 ON 10
LOWEST SLP 29.52 ON 20

[REMARKS]

#FINAL-03-13#

Precip_Monthly_2013_April

National Weather Service - Climate Data Explanation of the Preliminary Monthly Climate Data (F6) Product
 These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.
 WFO Monthly/Daily Climate Data

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 CXUS55 KPQR 250327
 CF6HIO
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: HILLSBORO OR
 MONTH: APRIL
 YEAR: 2013
 LATITUDE: 45 32 N
 LONGITUDE: 122 57 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
DY MAX MIN		AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR	
1	65	44	55	7	10	0	0.00	0.0	0	3.2	16	160	M	M	6		19	160
2	64	47	56	8	9	0	0.00	0.0	0	4.1	9	40	M	M	8		11	40
3	63	39	51	3	14	0	0.00	0.0	0	1.5	6	310	M	M	4	12	7	340
4	60	51	56	8	9	0	0.25	0.0	0	7.6	20	180	M	M	10	1	29	200
5	59	50	55	6	10	0	0.79	0.0	0	10.2	20	180	M	M	10	1	25	210
6	54	45	50	1	15	0	0.57	M	0	9.1	18	200	M	M	7	1	25	200
7	53	41	47	-2	18	0	0.10	M	0	10.8	28	240	M	M	9	1	36	220
8	55	38	47	-2	18	0	0.01	M	0	3.4	12	320	M	M	8		16	330
9	55	35	45	-4	20	0	0.00	0.0	0	1.9	8	200	M	M	9		10	150
10	59	44	52	3	13	0	0.06	M	0	9.5	23	330	M	M	8	8	29	330
11	56	36	46	-3	19	0	T	M	0	4.9	14	300	M	M	6		17	310
12	52	33	43	-6	22	0	T	M	0	4.6	15	320	M	M	5		21	210
13	51	35	43	-7	22	0	0.07	M	0	8.4	21	230	M	M	8	1	28	240
14	51	34	43	-7	22	0	0.03	M	0	3.5	17	290	M	M	8	18	20	290
15	57	34	46	-4	19	0	0.03	M	0	4.2	15	10	M	M	7	1	20	10
16	59	33	46	-4	19	0	T	M	0	3.8	16	310	M	M	6	18	21	300
17	58	32	45	-5	20	0	0.00	0.0	0	2.8	10	230	M	M	5		13	250
18	58	44	51	1	14	0	0.20	M	0	2.9	9	300	M	M	10	1	13	180
19	60	49	55	5	10	0	0.14	M	0	9.2	17	300	M	M	9	1	25	250
20	58	43	51	0	14	0	0.00	0.0	0	4.6	13	330	M	M	9		15	300
21	54	39	47	-4	18	0	T	M	0	3.0	14	310	M	M	9	8	18	310
22	65	35	50	-1	15	0	0.00	0.0	0	5.1	15	50	M	M	0		21	70
23	69	34	52	1	13	0	0.00	0.0	0	4.1	14	10	M	M	0		19	30
24	74	35	55	4	10	0	0.00	0.0	0	5.6	14	30	M	M	0		19	20
25	77	40	59	7	6	0	0.00	0.0	0	2.7	15	320	M	M	0		18	310
26	78	38	58	6	7	0	0.00	0.0	0	1.8	8	50	M	M	0		11	30
27	71	39	55	3	10	0	0.00	0.0	0	3.9	14	300	M	M	3		18	290
28	66	49	58	6	7	0	T	M	0	5.3	16	210	M	M	6		22	200
29	58	38	48	-4	17	0	0.04	M	0	11.4	23	310	M	M	5	1	27	300
30	57	34	46	-7	19	0	0.04	M	0	6.6	21	290	M	M	5	1	25	290
SM	1816	1188			439	0	2.33		0.0	159.7			M		180			
AV	60.5	39.6							5.3	FASTST	M	M	6		MAX(MPH)			
								MISC	---->	# 28 240					# 36 220			

NOTES:

Precip_Monthly_2013_April

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
MONTH: APRIL
YEAR: 2013
LATITUDE: 45 32 N
LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 50.1
DPTR FM NORMAL: 0.1
HIGHEST: 78 ON 26
LOWEST: 32 ON 17

[PRECIPITATION DATA]

TOTAL FOR MONTH: 2.33
DPTR FM NORMAL: -0.68
GRTST 24HR 0.90 ON 5- 6
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY
TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 1
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 13
0.10 INCH OR MORE: 6
0.50 INCH OR MORE: 2
1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 439
DPTR FM NORMAL -9
TOTAL FM JUL 1 4387
DPTR FM NORMAL -175

CLEAR (SCALE 0-3) 6
PTCLDY (SCALE 4-7) 15
CLOUDY (SCALE 8-10) 9

[CDD (BASE 65)]

TOTAL THIS MO. 0
DPTR FM NORMAL 0
TOTAL FM JAN 1 0
DPTR FM NORMAL 0

[PRESSURE DATA]

HIGHEST SLP 30.50 ON 17
LOWEST SLP 29.53 ON 7

[REMARKS]

#FINAL-04-13#

Precip_Monthly_2013_May

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
 MONTH: MAY
 YEAR: 2013
 LATITUDE: 45 32 N
 LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 57.1
 DPTR FM NORMAL: 1.2
 HIGHEST: 84 ON 11, 6
 LOWEST: 30 ON 1

[PRECIPITATION DATA]

TOTAL FOR MONTH: 3.98
 DPTR FM NORMAL: 1.70
 GRTST 24HR 1.15 ON 22-23
 SNOW, ICE PELLETS, HAIL
 TOTAL MONTH: 0.0 INCH
 GRTST 24HR 0.0
 GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
 2 = FOG REDUCING VISIBILITY
 TO 1/4 MILE OR LESS
 3 = THUNDER
 4 = ICE PELLETS
 5 = HAIL
 6 = FREEZING RAIN OR DRIZZLE
 7 = DUSTSTORM OR SANDSTORM:
 VSBY 1/2 MILE OR LESS
 8 = SMOKE OR HAZE
 9 = BLOWING SNOW
 X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
 MAX 90 OR ABOVE: 0
 MIN 32 OR BELOW: 1
 MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 15
 0.10 INCH OR MORE: 11
 0.50 INCH OR MORE: 3
 1.00 INCH OR MORE: 1

[HDD (BASE 65)]

TOTAL THIS MO. 244
 DPTR FM NORMAL -44
 TOTAL FM JUL 1 4631
 DPTR FM NORMAL -219

CLEAR (SCALE 0-3) 11
 PTCLDY (SCALE 4-7) 8
 CLOUDY (SCALE 8-10) 12

[CDD (BASE 65)]

TOTAL THIS MO. 6
 DPTR FM NORMAL 0
 TOTAL FM JAN 1 6
 DPTR FM NORMAL 0

[PRESSURE DATA]

HIGHEST SLP 30.34 ON 31
 LOWEST SLP 30.23 ON 31

[REMARKS]

#FINAL-05-13#

Precip_Monthly_2013_June

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
MONTH: JUNE
YEAR: 2013
LATITUDE: 45 32 N
LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 62.5
DPTR FM NORMAL: 2.0
HIGHEST: 95 ON 30
LOWEST: 42 ON 14,10

[PRECIPITATION DATA]

TOTAL FOR MONTH: 1.31
DPTR FM NORMAL: -0.09
GRTST 24HR 0.47 ON 12-13
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

- 1 = FOG OR MIST
- 2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
- 3 = THUNDER
- 4 = ICE PELLETS
- 5 = HAIL
- 6 = FREEZING RAIN OR DRIZZLE
- 7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
- 8 = SMOKE OR HAZE
- 9 = BLOWING SNOW
- X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 2
MIN 32 OR BELOW: 0
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 10
0.10 INCH OR MORE: 5
0.50 INCH OR MORE: 0
1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 106
DPTR FM NORMAL -49
TOTAL FM JUL 1 4737
DPTR FM NORMAL -268

CLEAR (SCALE 0-3) 12
PTCLDY (SCALE 4-7) 10
CLOUDY (SCALE 8-10) 8

[CDD (BASE 65)]

TOTAL THIS MO. 39
DPTR FM NORMAL 19
TOTAL FM JAN 1 45
DPTR FM NORMAL 19

[PRESSURE DATA]

HIGHEST SLP 30.29 ON 14
LOWEST SLP 29.62 ON 24

[REMARKS]

#FINAL-06-13#

Precip_Monthly_2013_July

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
MONTH: JULY
YEAR: 2013
LATITUDE: 45 32 N
LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 66.8
DPTR FM NORMAL: 1.2
HIGHEST: 92 ON 23, 1
LOWEST: 44 ON 12

[PRECIPITATION DATA]

TOTAL FOR MONTH: T
DPTR FM NORMAL: -0.55
GRTST 24HR T ON 16-16
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY
TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 7
MIN 32 OR BELOW: 0
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 0
0.10 INCH OR MORE: 0
0.50 INCH OR MORE: 0
1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 23
DPTR FM NORMAL -33
TOTAL FM JUL 1 23
DPTR FM NORMAL -33

CLEAR (SCALE 0-3) 27
PTCLDY (SCALE 4-7) 4
CLOUDY (SCALE 8-10) 0

[CDD (BASE 65)]

TOTAL THIS MO. 86
DPTR FM NORMAL 11
TOTAL FM JAN 1 131
DPTR FM NORMAL 30

[PRESSURE DATA]

HIGHEST SLP 30.20 ON 18
LOWEST SLP 29.86 ON 21

[REMARKS]

#FINAL-07-13#

Precip_Monthly_2013_Aug

National Weather Service - Climate DataExplanation of the Preliminary Monthly Climate Data (F6) Product

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

WFO Monthly/Daily Climate Data

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CXUS55 KPQR 250324

CF6HIO

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: HILLSBORO OR
 MONTH: AUGUST
 YEAR: 2013
 LATITUDE: 45 32 N
 LONGITUDE: 122 57 W

TEMPERATURE IN F:					:PCPN:			SNOW:			WIND			:SUNSHINE:			SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18		
DAY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR		
1	66	54	60	-7	5	0	0.00	0.0	0	4.0	10	240	M	M	10	1	12	240		
2	71	52	62	-5	3	0	0.00	0.0	0	2.4	9	30	M	M	9		13	30		
3	83	50	67	0	0	2	0.00	0.0	0	3.8	14	70	M	M	2		16	70		
4	89	53	71	4	0	6	0.00	0.0	0	4.9	18	320	M	M	0		22	310		
5	90	55	73	6	0	8	0.00	0.0	0	5.0	15	320	M	M	0		20	310		
6	92	50	71	4	0	6	0.00	0.0	0	4.4	13	320	M	M	0		16	330		
7	87	51	69	2	0	4	0.00	0.0	0	5.1	15	310	M	M	1		18	320		
8	85	57	71	4	0	6	0.00	0.0	0	4.6	17	310	M	M	2		22	300		
9	82	55	69	2	0	4	0.00	0.0	0	3.7	15	20	M	M	0		19	20		
10	81	58	70	3	0	5	T	0.0	0	3.8	13	90	M	M	4		16	90		
11	75	58	67	1	0	2	0.00	0.0	0	3.4	10	40	M	M	8		13	30		
12	78	54	66	0	0	1	0.00	0.0	0	4.1	16	290	M	M	6		19	310		
13	86	52	69	3	0	4	0.00	0.0	0	1.7	12	60	M	M	2		12	60		
14	84	51	68	2	0	3	T	0.0	0	3.2	15	290	M	M	2		18	290		
15	77	63	70	4	0	5	0.02	0.0	0	2.6	8	330	M	M	8	18	10	330		
16	84	59	72	6	0	7	0.00	0.0	0	3.4	15	310	M	M	5	1	19	300		
17	84	56	70	4	0	5	0.00	0.0	0	5.3	14	40	M	M	3		18	40		
18	84	52	68	2	0	3	0.00	0.0	0	3.7	13	70	M	M	1		18	70		
19	85	52	69	3	0	4	0.00	0.0	0	6.7	20	320	M	M	1		26	320		
20	83	46	65	-1	0	0	0.00	0.0	0	6.9	17	320	M	M	0		24	320		
21	92	50	71	5	0	6	0.00	0.0	0	4.0	12	300	M	M	0		15	300		
22	84	52	68	3	0	3	0.01	0.0	0	2.1	10	100	M	M	1		13	150		
23	76	57	67	2	0	2	0.01	0.0	0	4.6	15	300	M	M	6		17	300		
24	77	58	68	3	0	3	0.01	0.0	0	3.7	14	310	M	M	7	1	17	310		
25	69	52	61	-4	4	0	0.07	0.0	0	1.8	8	300	M	M	6		9	300		
26	78	57	68	3	0	3	0.24	0.0	0	8.0	20	180	M	M	6	1	27	170		
27	79	61	70	5	0	5	0.01	0.0	0	2.8	13	310	M	M	7		16	300		
28	80	58	69	5	0	4	0.06	0.0	0	2.8	9	270	M	M	7	1	11	270		
29	79	63	71	7	0	6	0.42	0.0	0	6.1	23	170	M	M	8	18	28	150		
30	80	58	69	5	0	4	0.00	0.0	0	4.7	10	310	M	M	5	1	16	320		
31	87	51	69	5	0	4	0.00	0.0	0	3.4	12	290	M	M	0	1	15	300		
SM	2527	1695			12	115	0.85		0.0	126.7			M		117					
AV	81.5	54.7								4.1	FASTST		M	M	4		MAX(MPH)			
											MISC ---->	# 23 170					# 28	150		

Precip_Monthly_2013_Aug

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
 MONTH: AUGUST
 YEAR: 2013
 LATITUDE: 45 32 N
 LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 68.1
 DPTR FM NORMAL: 2.2
 HIGHEST: 92 ON 21, 6
 LOWEST: 46 ON 20

[PRECIPITATION DATA]

TOTAL FOR MONTH: 0.85
 DPTR FM NORMAL: 0.22
 GRTST 24HR 0.43 ON 28-29
 SNOW, ICE PELLETS, HAIL
 TOTAL MONTH: 0.0 INCH
 GRTST 24HR 0.0
 GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

- 1 = FOG OR MIST
- 2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
- 3 = THUNDER
- 4 = ICE PELLETS
- 5 = HAIL
- 6 = FREEZING RAIN OR DRIZZLE
- 7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
- 8 = SMOKE OR HAZE
- 9 = BLOWING SNOW
- X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
 MAX 90 OR ABOVE: 3
 MIN 32 OR BELOW: 0
 MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 9
 0.10 INCH OR MORE: 2
 0.50 INCH OR MORE: 0
 1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 12
 DPTR FM NORMAL -39
 TOTAL FM JUL 1 35
 DPTR FM NORMAL -72

CLEAR (SCALE 0-3) 15
 PTCLDY (SCALE 4-7) 13
 CLOUDY (SCALE 8-10) 3

[CDD (BASE 65)]

TOTAL THIS MO. 115
 DPTR FM NORMAL 38
 TOTAL FM JAN 1 246
 DPTR FM NORMAL 68

[PRESSURE DATA]

HIGHEST SLP 30.15 ON 2
 LOWEST SLP 29.79 ON 31

[REMARKS]

#FINAL-08-13#

Precip_Monthly_2013_sept

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
MONTH: SEPTEMBER
YEAR: 2013
LATITUDE: 45 32 N
LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 62.4
DPTR FM NORMAL: 1.9
HIGHEST: 97 ON 11
LOWEST: 40 ON 26

[PRECIPITATION DATA]

TOTAL FOR MONTH: 6.27
DPTR FM NORMAL: 4.83
GRSTST 24HR 1.88 ON 28-29
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRSTST 24HR 0.0
GRSTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY
TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 2
MIN 32 OR BELOW: 0
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 18
0.10 INCH OR MORE: 11
0.50 INCH OR MORE: 4
1.00 INCH OR MORE: 2

[HDD (BASE 65)]

TOTAL THIS MO. 131
DPTR FM NORMAL -24
TOTAL FM JUL 1 166
DPTR FM NORMAL -96

CLEAR (SCALE 0-3) 8
PTCLDY (SCALE 4-7) 8
CLOUDY (SCALE 8-10) 14

[CDD (BASE 65)]

TOTAL THIS MO. 64
DPTR FM NORMAL 45
TOTAL FM JAN 1 310
DPTR FM NORMAL 113

[PRESSURE DATA]

HIGHEST SLP 30.17 ON 27
LOWEST SLP 29.33 ON 29

[REMARKS]

#FINAL-09-13#

Precip_Monthly_2014_Nov

National weather Service - Climate Data Explanation of the Preliminary Monthly Climate Data (F6) Product

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

WFO Monthly/Daily Climate Data

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CXUS56 KPQR 011330

CF6HIO

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: HILLSBORO OR
 MONTH: NOVEMBER
 YEAR: 2014
 LATITUDE: 45 32 N
 LONGITUDE: 122 57 W

TEMPERATURE IN F:					:PCPN:		SNOW:		WIND			:SUNSHINE:			SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR	
1	49	42	46	-2	19	0	0.03	M	0	2.3	8	310	M	M	10	12	9	300
2	53	44	49	2	16	0	0.17	M	0	6.5	16	180	M	M	10	12	20	170
3	56	51	54	7	11	0	0.26	0.0	0	9.1	15	180	M	M	8	1	19	170
4	62	51	57	10	8	0	0.16	0.0	0	7.6	16	170	M	M	10	1	20	180
5	62	51	57	10	8	0	0.03	0.0	0	0.8	6	320	M	M	8	12	7	320
6	60	46	53	7	12	0	0.14	M	0	5.5	17	160	M	M	8	12	22	160
7	59	39	49	3	16	0	0.00	0.0	0	2.0	9	10	M	M	6	12	12	20
8	60	35	48	2	17	0	0.00	0.0	0	0.2	6	320	M	M	2	128	8	320
9	56	41	49	3	16	0	0.02	M	0	3.6	13	290	M	M	9	128	17	310
10	56	38	47	1	18	0	T	M	0	3.5	15	40	M	M	5	12	22	30
11	47	34	41	-5	24	0	0.00	0.0	0	19.0	35	70	M	M	0		47	70
12	41	31	36	-9	29	0	0.00	0.0	0	18.8	29	90	M	M	0		39	90
13	38	32	35	-10	30	0	0.16	M	0	10.4	24	70	M	M	10	16	32	70
14	44	23	34	-11	31	0	0.00	0.0	0	2.1	9	40	M	M	4	1	M	M
15	44	21	33	-12	32	0	0.00	0.0	0	8.9	23	80	M	M	0		30	90
16	49	19	34	-10	31	0	0.00	0.0	0	3.5	13	60	M	M	0		18	60
17	50	21	36	-8	29	0	0.00	0.0	0	4.1	12	130	M	M	0		16	120
18	42	21	32	-12	33	0	0.00	0.0	0	2.1	7	300	M	M	1		8	40
19	51	32	42	-2	23	0	0.14	M	0	3.3	12	140	M	M	3	1	15	120
20	50	36	43	0	22	0	0.03	M	0	1.0	6	330	M	M	10	128	7	320
21	54	41	48	5	17	0	0.54	M	0	8.2	22	170	M	M	10	1	30	160
22	56	38	47	4	18	0	0.14	M	0	3.3	15	280	M	M	7	128	19	280
23	M	M	M	M	M	M	0.53	M	0	6.2	22	180	M	M	8	138	27	180
24	54	49	52	10	13	0	T	M	0	4.1	13	170	M	M	10	128	16	170
25	62	50	56	14	9	0	0.00	0.0	0	7.6	16	200	M	M	10	1	22	200
26	60	51	56	14	9	0	T	0.0	0	3.6	12	170	M	M	6		14	160
27	61	53	57	15	8	0	T	0.0	0	12.4	22	180	M	M	10	1	29	170
28	55	41	48	7	17	0	0.38	M	0	11.5	24	300	M	M	10	1	31	320
29	43	26	35	-6	30	0	0.10	M	0	4.9	16	300	M	M	4	1	19	300
30	39	24	32	-9	33	0	0.00	0.0	0	9.0	26	80	M	M	0		36	80
SM	1513	1081			579	0	2.83		0.0	185.1			M		179			
AV	52.2	37.3							6.2	FASTST	M	M	6		MAX(MPH)			
								MISC	---->	# 35	70				# 47	70		

NOTES:

Precip_Monthly_2014_Nov

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
MONTH: NOVEMBER
YEAR: 2014
LATITUDE: 45 32 N
LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 44.7
DPTR FM NORMAL: 0.3
HIGHEST: 62 ON 25, 5
LOWEST: 19 ON 16

[PRECIPITATION DATA]

TOTAL FOR MONTH: 2.83
DPTR FM NORMAL: -3.64
GRTST 24HR 0.84 ON 31- 1
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY
TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 10
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 15
0.10 INCH OR MORE: 11
0.50 INCH OR MORE: 2
1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 579
DPTR FM NORMAL -41
TOTAL FM JUL 1 856
DPTR FM NORMAL -445

CLEAR (SCALE 0-3) 8
PTCLDY (SCALE 4-7) 10
CLOUDY (SCALE 8-10) 12

[CDD (BASE 65)]

TOTAL THIS MO. 0
DPTR FM NORMAL 0
TOTAL FM JAN 1 405
DPTR FM NORMAL 207

[PRESSURE DATA]

HIGHEST SLP 30.51 ON 15
LOWEST SLP 29.41 ON 21

[REMARKS]

#FINAL-11-14#

Precip_Monthly_2014_Dec

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
 MONTH: DECEMBER
 YEAR: 2014
 LATITUDE: 45 32 N
 LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 43.8
 DPTR FM NORMAL: 5.2
 HIGHEST: 61 ON 11
 LOWEST: 21 ON 30

[PRECIPITATION DATA]

TOTAL FOR MONTH: 5.88
 DPTR FM NORMAL: -0.66
 GRTST 24HR 1.12 ON 4- 5
 SNOW, ICE PELLETS, HAIL
 TOTAL MONTH: 0.0 INCH
 GRTST 24HR 0.0
 GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
 2 = FOG REDUCING VISIBILITY
 TO 1/4 MILE OR LESS
 3 = THUNDER
 4 = ICE PELLETS
 5 = HAIL
 6 = FREEZING RAIN OR DRIZZLE
 7 = DUSTSTORM OR SANDSTORM:
 VSBY 1/2 MILE OR LESS
 8 = SMOKE OR HAZE
 9 = BLOWING SNOW
 X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
 MAX 90 OR ABOVE: 0
 MIN 32 OR BELOW: 3
 MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 21
 0.10 INCH OR MORE: 12
 0.50 INCH OR MORE: 5
 1.00 INCH OR MORE: 2

[HDD (BASE 65)]

TOTAL THIS MO. 629
 DPTR FM NORMAL -163
 TOTAL FM JUL 1 1485
 DPTR FM NORMAL -608

CLEAR (SCALE 0-3) 3
 PTCLDY (SCALE 4-7) 11
 CLOUDY (SCALE 8-10) 16

[CDD (BASE 65)]

TOTAL THIS MO. 0
 DPTR FM NORMAL 0
 TOTAL FM JAN 1 405
 DPTR FM NORMAL 207

[PRESSURE DATA]
 HIGHEST SLP M ON M
 LOWEST SLP 29.12 ON 11

[REMARKS]

Precip_Monthly_2015_Jan

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
MONTH: JANUARY
YEAR: 2015
LATITUDE: 45 32 N
LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 42.6
DPTR FM NORMAL: 2.5
HIGHEST: 60 ON 24
LOWEST: 21 ON 1

[PRECIPITATION DATA]

TOTAL FOR MONTH: 3.01
DPTR FM NORMAL: -3.05
GRTST 24HR 1.52 ON 17-18
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY
TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 10
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 12
0.10 INCH OR MORE: 5
0.50 INCH OR MORE: 2
1.00 INCH OR MORE: 1

[HDD (BASE 65)]

TOTAL THIS MO. 688
DPTR FM NORMAL -84
TOTAL FM JUL 1 2209
DPTR FM NORMAL -684

CLEAR (SCALE 0-3) 5
PTCLDY (SCALE 4-7) 13
CLOUDY (SCALE 8-10) 13

[CDD (BASE 65)]

TOTAL THIS MO. 0
DPTR FM NORMAL 0
TOTAL FM JAN 1 0
DPTR FM NORMAL 0

[PRESSURE DATA]

HIGHEST SLP 30.48 ON 19
LOWEST SLP 29.71 ON 17

[REMARKS]

#FINAL-01-15#

Precip_Monthly_2015_Feb

National weather Service - Climate DataExplanation of the Preliminary Monthly Climate Data (F6) Product

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

WFO Monthly/Daily Climate Data

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CXUS56 KPQR 011330

CF6H10

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: HILLSBORO OR
 MONTH: FEBRUARY
 YEAR: 2015
 LATITUDE: 45 32 N
 LONGITUDE: 122 57 W

TEMPERATURE IN F:					:PCPN:	SNOW:	WIND	:SUNSHINE:	SKY	:PK WND								
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
DAY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	45	36	41	-1	24	0	0.23	M	0	2.0	8	260	M	M	8	12	9	260
2	58	39	49	7	16	0	0.47	M	0	3.4	17	240	M	M	7	18	22	240
3	51	40	46	4	19	0	0.17	M	0	0.9	6	300	M	M	6	1	8	200
4	53	44	49	7	16	0	0.14	M	0	2.4	7	50	M	M	8	12	9	60
5	56	45	51	9	14	0	0.90	M	0	5.1	14	160	M	M	10	12	19	160
6	57	51	54	12	11	0	1.13	0.0	0	7.3	22	180	M	M	9	1	28	180
7	57	50	54	12	11	0	0.89	0.0	0	10.2	23	170	M	M	10	1	33	180
8	56	44	50	8	15	0	0.21	M	0	5.3	25	240	M	M	8	1	33	240
9	52	46	49	7	16	0	0.26	M	0	13.3	31	170	M	M	9	1	43	170
10	53	44	49	7	16	0	0.00	0.0	0	4.0	13	160	M	M	6	1	15	160
11	54	37	46	4	19	0	0.00	0.0	0	1.5	8	60	M	M	4	12	9	50
12	50	40	45	3	20	0	0.00	0.0	0	1.0	7	280	M	M	9	12	9	280
13	53	36	45	3	20	0	0.00	0.0	0	2.2	7	300	M	M	6	128	8	200
14	60	40	50	8	15	0	0.00	0.0	0	3.5	13	60	M	M	6	12	17	300
15	63	35	49	7	16	0	0.00	0.0	0	4.3	17	50	M	M	0	1	21	60
16	62	36	49	7	16	0	0.00	0.0	0	10.7	23	60	M	M	0		29	70
17	64	34	49	7	16	0	0.00	0.0	0	5.8	14	80	M	M	0		17	80
18	57	33	45	3	20	0	0.00	0.0	0	1.3	7	320	M	M	7	1	10	180
19	59	42	51	8	14	0	T	M	0	1.2	10	170	M	M	9	1	13	180
20	58	37	48	5	17	0	0.00	0.0	0	2.9	14	310	M	M	7	12	17	310
21	59	34	47	4	18	0	0.00	0.0	0	5.9	16	70	M	M	2		23	80
22	56	39	48	5	17	0	0.00	0.0	0	9.5	20	70	M	M	0		27	60
23	59	27	43	0	22	0	0.00	0.0	0	4.9	14	60	M	M	0		20	70
24	58	27	43	0	22	0	0.00	0.0	0	2.8	15	330	M	M	1	1	19	330
25	52	43	48	5	17	0	0.01	M	0	1.1	7	190	M	M	10	18	10	220
26	53	45	49	6	16	0	0.05	M	0	4.1	12	190	M	M	10	18	14	180
27	56	42	49	5	16	0	0.11	M	0	4.2	14	90	M	M	10	1	19	80
28	57	32	45	1	20	0	0.00	0.0	0	3.8	14	80	M	M	2	1	18	50
SM	1568	1098			479	0	4.57		0.0	124.6			M		164			
AV	56.0	39.2								4.5	FASTST		M	M	6	MAX(MPH)		
								MISC	---->	#	31	170				#	43	170

NOTES:

LAST OF SEVERAL OCCURRENCES

Precip_Monthly_2015_Feb

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
 MONTH: FEBRUARY
 YEAR: 2015
 LATITUDE: 45 32 N
 LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 47.6
 DPTR FM NORMAL: 5.3
 HIGHEST: 64 ON 17
 LOWEST: 27 ON 24,23

[PRECIPITATION DATA]

TOTAL FOR MONTH: 4.57
 DPTR FM NORMAL: 0.16
 GRTST 24HR 1.51 ON 5- 6
 SNOW, ICE PELLETS, HAIL
 TOTAL MONTH: 0.0 INCH
 GRTST 24HR 0.0
 GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
 2 = FOG REDUCING VISIBILITY
 TO 1/4 MILE OR LESS
 3 = THUNDER
 4 = ICE PELLETS
 5 = HAIL
 6 = FREEZING RAIN OR DRIZZLE
 7 = DUSTSTORM OR SANDSTORM:
 VSBY 1/2 MILE OR LESS
 8 = SMOKE OR HAZE
 9 = BLOWING SNOW
 X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
 MAX 90 OR ABOVE: 0
 MIN 32 OR BELOW: 3
 MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 12
 0.10 INCH OR MORE: 10
 0.50 INCH OR MORE: 3
 1.00 INCH OR MORE: 1

[HDD (BASE 65)]

TOTAL THIS MO. 479
 DPTR FM NORMAL -155
 TOTAL FM JUL 1 2688
 DPTR FM NORMAL -839

CLEAR (SCALE 0-3) 8
 PTCLDY (SCALE 4-7) 10
 CLOUDY (SCALE 8-10) 10

[CDD (BASE 65)]

TOTAL THIS MO. 0
 DPTR FM NORMAL 0
 TOTAL FM JAN 1 0
 DPTR FM NORMAL 0

[PRESSURE DATA]

HIGHEST SLP 30.47 ON 25
 LOWEST SLP 29.38 ON 7

[REMARKS]

#FINAL-02-15#

Precip_Monthly_2015_March

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: HILLSBORO OR
MONTH: MARCH
YEAR: 2015
LATITUDE: 45 32 N
LONGITUDE: 122 57 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 50.4
DPTR FM NORMAL: 4.3
HIGHEST: 73 ON 26
LOWEST: 25 ON 4

[PRECIPITATION DATA]

TOTAL FOR MONTH: 4.68
DPTR FM NORMAL: 0.95
GRTST 24HR 1.44 ON 14-14
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY
TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 5
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 14
0.10 INCH OR MORE: 8
0.50 INCH OR MORE: 3
1.00 INCH OR MORE: 1

[HDD (BASE 65)]

TOTAL THIS MO. 446
DPTR FM NORMAL -141
TOTAL FM JUL 1 3134
DPTR FM NORMAL -980

CLEAR (SCALE 0-3) 13
PTCLDY (SCALE 4-7) 13
CLOUDY (SCALE 8-10) 5

[CDD (BASE 65)]

TOTAL THIS MO. 0
DPTR FM NORMAL 0
TOTAL FM JAN 1 0
DPTR FM NORMAL 0

[PRESSURE DATA]

HIGHEST SLP 30.44 ON 12
LOWEST SLP 29.61 ON 15

[REMARKS]

#FINAL-03-15#

Precip_Monthly_2015_April_Partial

[TEMPERATURE DATA]

AVERAGE MONTHLY: 48.6
 DPTR FM NORMAL: -0.6
 HIGHEST: 77 ON 19,18
 LOWEST: 31 ON 15

[PRECIPITATION DATA]

TOTAL FOR MONTH: 1.25
 DPTR FM NORMAL: -0.75
 GRTST 24HR 0.43 ON 31- 1
 SNOW, ICE PELLETS, HAIL
 TOTAL MONTH: 0.0 INCH
 GRTST 24HR 0.0
 GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
 2 = FOG REDUCING VISIBILITY
 TO 1/4 MILE OR LESS
 3 = THUNDER
 4 = ICE PELLETS
 5 = HAIL
 6 = FREEZING RAIN OR DRIZZLE
 7 = DUSTSTORM OR SANDSTORM:
 VSBY 1/2 MILE OR LESS
 8 = SMOKE OR HAZE
 9 = BLOWING SNOW
 X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
 MAX 90 OR ABOVE: 0
 MIN 32 OR BELOW: 2
 MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 10
 0.10 INCH OR MORE: 5
 0.50 INCH OR MORE: 0
 1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 306
 DPTR FM NORMAL 5
 TOTAL FM JUL 1 3440
 DPTR FM NORMAL -975

CLEAR (SCALE 0-3) 6
 PTCLDY (SCALE 4-7) 11
 CLOUDY (SCALE 8-10) 2

[CDD (BASE 65)]

TOTAL THIS MO. 0
 DPTR FM NORMAL 0
 TOTAL FM JAN 1 0
 DPTR FM NORMAL 0

[PRESSURE DATA]

HIGHEST SLP M ON M
 LOWEST SLP 29.65 ON 5

[REMARKS]

Daily Precipitation Normals and Records

Period of Record: Portland Airport 1941-2012, Portland Downtown 1872-2012

(D= Daily, M= Month to Date, Y= Year to date, W= Water Year to date. Precipitation in units of inches)

D A Y	----- July -----								----- August -----								D A Y
	Normals ¹ & Cumulative Totals				Record Daily Rainfall				Normal s ¹ & Cumulative Totals				Record Daily Rainfall				
	AIRPORT				Airport		Downtown		AIRPORT				Airport		Downtown		
	D	M	Y	W	Amt	Year	Amt	Year	D	M	Y	W	Amt	Year	Amt	Year	
1	.03	.03	19.15	33.27	.28	1983	.42	1966	.01	.01	19.78	33.90	.39	1989	.63	1896	1
2	.03	.06	19.18	33.30	.81	1966	1.01	1902	.02	.03	19.80	33.92	.54	1956	.52	1956	2
3	.03	.09	19.21	33.33	.26	2008	.92	1927	.01	.04	19.81	33.93	.41	1962	.52	1877	3
4	.03	.12	19.24	33.36	.21	1998	.44	1986	.01	.05	19.82	33.94	.05	1943	.47	1933	4
5	.03	.15	19.27	33.39	.48	1992	.80	1923	.02	.07	19.84	33.96	.26	1943	.35	1874	5
6	.03	.18	19.30	33.42	.20	1963	.82	1923	.01	.08	19.85	33.97	.94	1976	.45	1976	6
7	.02	.20	19.32	33.44	.45	1976	.50	1923	.01	.09	19.86	33.98	.63	1976	.46	1962	7
8	.03	.23	19.35	33.47	.89	1946	1.27	1974	.02	.11	19.88	34.00	.08	1985	1.25	1900	8
9	.02	.25	19.37	33.49	1.06	1995	.80	1995	.02	.13	19.90	34.02	.41	1982	.51	1982	9
10	.03	.28	19.40	33.52	.63	1986	.90	1986	.02	.15	19.92	34.04	.36	1957	.46	1922	10
11	.02	.30	19.42	33.54	.32	1988	1.10	1879	.02	.17	19.94	34.06	.39	2009	.40	1922	11
12	.02	.32	19.44	33.56	.45	2006	.76	1920	.01	.18	19.95	34.08	.38	1978	.73	1908	12
13	.02	.34	19.46	33.58	.15	1957	.70	1873	.02	.20	19.97	34.10	.34	1987	.68	1881	13
14	.02	.36	19.48	33.60	.50	1942	.54	1964	.02	.22	19.99	34.12	.26	1948	.37	1881	14
15	.02	.38	19.50	33.62	.80	1978	.44	1916	.02	.24	20.01	34.14	.73	1976	.82	1976	15
16	.02	.40	19.52	33.64	.81	1989	.86	1978	.02	.26	20.03	34.16	.46	1972	.83	1912	16
17	.02	.42	19.54	33.67	.67	2011	.82	2011	.03	.29	20.06	34.19	.90	1948	.90	1948	17
18	.02	.44	19.56	33.68	.63	1987	1.05	1987	.02	.31	20.08	34.21	.45	1968	.62	1968	18
19	.02	.46	19.58	33.70	.89	1983	1.00	1983	.02	.33	20.10	34.23	1.20	1968	.47	1954	19
20	.02	.48	19.60	33.72	.84	1954	.21	1993	.03	.36	20.13	34.25	.55	1997	.77	1997	20
21	.01	.49	19.61	33.73	.51	1945	.59	1945	.02	.38	20.15	34.27	.54	2004	.40	1879	21
22	.02	.51	19.63	33.75	.12	2005	.34	1898	.03	.41	20.18	34.30	.87	2004	.90	2004	22
23	.02	.53	19.65	33.77	.06	1959	.83	1918	.02	.43	20.20	34.32	1.20	1977	1.15	1977	23
24	.01	.54	19.66	33.78	.51	1949	.46	1949	.03	.46	20.23	34.35	.89	1973	1.34	1973	24
25	.02	.56	19.68	33.80	.42	1983	.77	1909	.03	.49	20.26	34.38	1.47	1977	1.36	1977	25
26	.01	.57	19.69	33.81	.52	1947	.65	1947	.02	.51	20.28	34.40	.44	1953	.87	1953	26
27	.02	.59	19.71	33.83	.25	1947	.37	1947	.03	.54	20.31	34.43	.42	1975	.72	1966	27
28	.01	.60	19.72	33.84	.36	1993	.34	1975	.03	.57	20.34	34.46	.61	1983	.73	1880	28
29	.02	.62	19.74	33.86	.17	2001	.45	1881	.03	.60	20.37	34.49	1.13	1983	1.13	1983	29
30	.01	.63	19.75	33.87	.52	1982	.42	1982	.04	.64	20.41	34.53	.64	1954	.75	1954	30
31	.02	.65	19.77	33.89	.38	1985	.28	1989	.03	.67	20.44	34.56	.52	1961	.94	1939	31
July				Airport		Downtown		August				Airport		Downtown			
Normal Precipitation				0.65		0.59		Normal Precipitation				0.67		0.71			
Wettest July				2.68 1983		2.94 1983		Wettest August				4.53 1968		4.25 1968			
Driest July				0.00 1967		0.00 1984 ²		Driest August				T 1998 ²		0.00 1885			
Snowiest July				-- --		-- --		Snowiest August				-- --		-- --			
July Airport Records...								April Airport Records...									
Greatest Rain in a Day				1.06" on 9 th July 1995				Greatest Rain in a Day				1.47" on 25 th Aug 1977					
Greatest Rain in 24 hrs				1.09" on 15-16 th 1978				Greatest Rain in 24 hrs				1.54" 25-26 th Aug 1977					
Greatest Snow in 24 hrs				no snow reported in July				Greatest Snow in 24 hrs				no snow reported in August					

¹ Normals listed for the Airport site (1981-2010 normals). Daily and cumulative averages are based on a daily value that is computed from normalizing the monthly total across the days of a month.

² Last year of multiple occurrences listed.

Daily Precipitation Normals and Records

Period of Record: Portland Airport 1941- 2012, Portland Downtown 1872-2012

(D= Daily, M= Month to Date, Y= Year to date, W= Water Year to date. Precipitation in units of inches)

D A Y	----- September -----								----- October -----								D A Y
	Normals ¹ & Cumulative Totals				Record Daily Rainfall				Normals ¹ & Cumulative Totals				Record Daily Rainfall				
	AIRPORT				Airport		Downtown		AIRPORT				Airport		Downtown		
	D	M	Y	W	Amt	Year	Amt	Year	D	M	Y	W	Amt	Year	Amt	Year	
1	.03	.03	20.47	34.59	1.48	1971	1.52	1971	.06	.06	21.97	.06	.98	1997	1.35	1997	1
2	.04	.07	20.51	34.63	.86	1979	.71	1913	.07	.13	22.04	.13	.79	1957	.68	1910	2
3	.03	.10	20.54	34.66	1.18	1945	1.22	1945	.06	.19	22.10	.19	.69	1967	1.11	1905	3
4	.04	.14	20.58	34.70	1.00	1959	1.68	1911	.07	.26	22.17	.26	1.00	1949	1.22	1949	4
5	.04	.18	20.62	34.74	.75	2009	1.24	1911	.07	.32	22.23	.32	.80	1950	1.11	1950	5
6	.05	.23	20.67	34.79	.60	1973	.92	1927	.07	.39	22.30	.39	1.24	1981	1.73	1981	6
7	.04	.27	20.71	34.83	1.55	2010	.86	2010	.07	.46	22.37	.46	.79	1962	1.78	1893	7
8	.04	.31	20.75	34.87	.27	1952	.49	1893	.07	.53	22.44	.53	.87	1955	1.32	1873	8
9	.04	.35	20.79	34.91	.84	1972	.75	1874	.07	.60	22.51	.60	1.66	1955	1.82	1955	9
10	.04	.39	20.83	34.95	1.18	1985	1.04	1985	.07	.67	22.58	.67	1.65	1959	2.93	1882	10
11	.05	.44	20.88	35.00	.44	1966	.79	1882	.08	.75	22.66	.75	.82	1968	1.52	1995	11
12	.04	.48	20.92	35.04	.23	1985	.72	1905	.08	.83	22.74	.83	1.11	2012	2.31	1882	12
13	.04	.52	20.96	35.08	.50	1955	.82	1920	.08	.91	22.82	.91	.43	2000	1.36	1908	13
14	.05	.57	21.01	35.13	2.03	1996	1.15	1996	.09	1.00	22.91	1.00	.51	1951	1.65	1908	14
15	.04	.61	21.05	35.17	.57	1955	1.48	1996	.09	1.09	23.00	1.09	1.06	1947	1.37	1906	15
16	.05	.66	21.10	35.22	.36	2002	1.03	1926	.09	1.18	23.09	1.18	.76	1956	1.19	1918	16
17	.05	.71	21.15	35.27	2.23	1969	2.41	1969	.10	1.28	23.19	1.28	.77	1947	2.11	1876	17
18	.05	.76	21.20	35.32	.97	2010	1.65	1921	.10	1.38	23.29	1.38	1.40	1979	1.57	1882	18
19	.05	.81	21.25	35.39	.97	1988	.96	1988	.11	1.49	23.40	1.49	1.32	1947	1.40	1947	19
20	.06	.87	21.31	35.43	1.56	1982	1.44	1982	.11	1.60	23.51	1.60	.99	1956	1.15	1956	20
21	.05	.92	21.36	35.48	.76	1972	1.27	1898	.11	1.71	23.62	1.71	1.10	1951	1.64	1876	21
22	.06	.98	21.42	35.54	.73	1948	1.07	1872	.11	1.82	23.73	1.82	1.31	1951	1.33	1951	22
23	.06	1.04	21.48	35.60	.86	1986	.97	1948	.12	1.94	23.85	1.94	.79	1951	1.12	1943	23
24	.05	1.09	21.53	35.65	.74	1950	.97	1973	.13	2.07	23.98	2.07	1.31	1943	1.57	2010	24
25	.06	1.15	21.59	35.71	1.48	1986	1.07	1877	.12	2.19	24.10	2.19	1.10	1955	1.79	1922	25
26	.07	1.22	21.66	35.78	1.11	1948	1.14	1940	.12	2.31	24.22	2.31	2.33	1994	2.10	1994	26
27	.06	1.28	21.72	35.84	1.30	1955	1.45	1955	.13	2.44	24.35	2.44	2.44	1994	3.20	1994	27
28	.06	1.34	21.78	35.90	1.08	2007	1.75	1927	.13	2.57	24.48	2.57	1.62	1982	1.58	1933	28
29	.07	1.41	21.85	35.97	.59	1951	.75	1889	.14	2.71	24.62	2.71	1.14	1997	1.41	1982	29
30	.06	1.47	21.91	36.03	1.68	2005	1.35	1953	.15	2.86	24.77	2.86	1.20	1997	1.16	1875	30
									.14	3.00	24.91	3.00	2.44	1994	2.68	1994	31
September				Airport		Downtown		October				Airport		Downtown			
Normal Precipitation				1.47		1.54		Normal Precipitation				3.00		3.42			
Wettest September				4.30 1986		5.52 1927		Wettest October				8.41 1994		11.63 1882			
Driest September				T 1993 ²		0.00 1873		Driest October				0.19 1988		T 1895			
Snowiest September				-- --		-- --		Snowiest October				T 1955		0.6 1935			
September Airport Records...								October Airport Records...									
Greatest Rain in a Day				2.23" on 17 th Sept 1969				Greatest Rain in a Day				2.44" on 27 th & 31 st 1994					
Greatest Rain in 24 hrs				2.38" on 19-20 th Sept 1982				Greatest Rain in 24 hrs				4.44" on 26-27 th Oct 1994					
Greatest Snow in 24 hrs				no snow reported in September				Greatest Snow in 24 hrs				Trace on 31 st Oct. 1955					

¹ Normals listed for the Airport site (1981-2010 normals). Daily and cumulative averages are based on a daily value that is computed from normalizing the monthly total across the days of a month.

² Last year of multiple occurrences listed.

APPENDIX D
WETLAND DELINEATION DATA SHEETS

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 02/13/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-01
 Investigator(s): Payson, Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): <1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Aloha Silt Loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: <u>Data plot in water quality swale.</u>			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <u>None</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	1 (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	1 (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	100 (A/B)
4. _____	_____	_____	_____		
50% = _____, 20% = _____	<u>0</u>	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 ft)					
1. <u>None</u>	_____	_____	_____	Prevalence Index worksheet:	
2. _____	_____	_____	_____	Total % Cover of:	Multiply by:
3. _____	_____	_____	_____	OBL species _____	x1 = _____
4. _____	_____	_____	_____	FACW species _____	x2 = _____
5. _____	_____	_____	_____	FAC species _____	x3 = _____
50% = _____, 20% = _____	<u>0</u>	= Total Cover		FACU species _____	x4 = _____
Herb Stratum (Plot size: 5 ft)					
1. <u><i>Alopecurus pratensis</i></u>	<u>70</u>	<u>yes</u>	<u>FAC</u>	UPL species _____	x5 = _____
2. <u><i>Juncus effusus</i></u>	<u>5</u>	<u>no</u>	<u>FACW</u>	Column Totals: _____ (A)	_____ (B)
3. _____	_____	_____	_____	Prevalence Index = B/A = _____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators:	
5. _____	_____	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation	
6. _____	_____	_____	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
7. _____	_____	_____	_____	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
8. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
9. _____	_____	_____	_____	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹	
10. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
11. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
50% = <u>37.5</u> , 20% = <u>15</u>	<u>75</u>	= Total Cover			
Woody Vine Stratum (Plot size: n/a)					
1. _____	_____	_____	_____	Hydrophytic Vegetation Present?	
2. _____	_____	_____	_____	Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/>
50% = _____, 20% = _____	_____	= Total Cover			
% Bare Ground in Herb Stratum <u>25</u>					

Remarks: 25% mud bottom with ponded water

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	<u>Gley 5/10Y</u>	<u>60</u>	<u>7.5YR 5/8</u>	<u>40</u>	<u>C</u>	<u>M</u>	<u>SiL</u>	
3-16	<u>10YR 5/2</u>	<u>80</u>	<u>7.5YR 5/8</u>	<u>20</u>	<u>C</u>	<u>M</u>	<u>SiL</u>	<u>Refusal at 16 inches</u>
¹ Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.					² Location: PL=Pore Lining, M=Matrix			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
Restrictive Layer (if present):								
Type: _____								
Depth (inches): _____					Hydric Soils Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Remarks: Soil moist 0-3 inches of profile.								

HYDROLOGY

Wetland Hydrology Indicators:					
Primary Indicators (minimum of one required; check all that apply)			Secondary Indicators (2 or more required)		
<input checked="" type="checkbox"/> Surface Water (A1)			<input type="checkbox"/> Water-Stained Leaves (B9)		
<input type="checkbox"/> High Water Table (A2)			(except MLRA 1, 2, 4A, and 4B)	(MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> Saturation (A3)			<input type="checkbox"/> Salt Crust (B11)		
<input type="checkbox"/> Water Marks (B1)			<input type="checkbox"/> Aquatic Invertebrates (B13)		
<input type="checkbox"/> Sediment Deposits (B2)			<input type="checkbox"/> Hydrogen Sulfide Odor (C1)		
<input type="checkbox"/> Drift Deposits (B3)			<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)		
<input type="checkbox"/> Algal Mat or Crust (B4)			<input type="checkbox"/> Presence of Reduced Iron (C4)		
<input type="checkbox"/> Iron Deposits (B5)			<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)		
<input type="checkbox"/> Surface Soil Cracks (B6)			<input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A)		
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)				<input type="checkbox"/> Frost-Heave Hummocks (D7)	
Field Observations:					
Surface Water Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches): <u>2-6</u>
Water Table Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Depth (inches): _____
					Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks: Data plot taken one foot from surface water in order to evaluate soil profile. Soil moist 0-3 inches of profile, but not saturated. Saturation observed where surface water present.					

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 02/13/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-02
 Investigator(s): Payson, Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): top of slope Local relief (concave, convex, none): none Slope (%): 2%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Aloha Silt Loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: Data plot at top of slope of water quality swale.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <u>None</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	1 (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	2 (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	50 (A/B)
4. _____	_____	_____	_____		
50% = _____, 20% = _____	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 ft)					
1. <u>Rubus aremeniacus</u>	2	n/a*	FACU	Prevalence Index worksheet:	
2. _____	_____	_____	_____	Total % Cover of:	Multiply by:
3. _____	_____	_____	_____	OBL species _____	x1 = _____
4. _____	_____	_____	_____	FACW species _____	x2 = _____
5. _____	_____	_____	_____	FAC species <u>80</u>	x3 = <u>240</u>
50% = _____, 20% = _____	2	= Total Cover		FACU species <u>20</u>	x4 = <u>80</u>
Herb Stratum (Plot size: 5 ft)					
1. <u>Alopecurus pratensis</u>	80	yes	FAC	UPL species _____	x5 = _____
2. <u>Daucus carota</u>	20	yes	FACU	Column Totals: <u>100</u> (A)	<u>320</u> (B)
3. _____	_____	_____	_____	Prevalence Index = B/A = 3.20	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators:	
5. _____	_____	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation	
6. _____	_____	_____	_____	<input type="checkbox"/> 2 - Dominance Test is >50%	
7. _____	_____	_____	_____	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
8. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
9. _____	_____	_____	_____	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹	
10. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
11. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
50% = <u>50</u> , 20% = <u>20</u>	100	= Total Cover		Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Woody Vine Stratum (Plot size: n/a)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
% Bare Ground in Herb Stratum <u>0</u>					
Remarks: *excluded from calculations per chapter 2 guidance					

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 02/13/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-03
 Investigator(s): Payson, Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Depressional area Local relief (concave, convex, none): none Slope (%): <1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Verboort Silty Clay Loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	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"/>		
Remarks: Depressional area just east of water quality detention pond. Upland paired plot is on 4-6" quarry spalls and undiggable.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u>Salix species</u>	<u>10</u>	<u>yes</u>	<u>FAC</u>	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. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Total % Cover of:</th> <th style="width: 40%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
50% = <u>5</u> , 20% = <u>2</u>	<u>10</u>	= Total Cover																		
Sapling/Shrub Stratum (Plot size: 15 ft)																				
1. <u>None</u>	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = _____	<u>0</u>	= Total Cover																		
Herb Stratum (Plot size: 5 ft)																				
1. <u>Phalaris arundinacea</u>	<u>100</u>	<u>yes</u>	<u>FACW</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover																		
Woody Vine Stratum (Plot size: n/a)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>0</u>																				

Remarks:

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 02/13/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-04
 Investigator(s): Payson, Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): riprap/gravel road Local relief (concave, convex, none): none Slope (%): <1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Verboort Silty Clay Loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: Plot is located just upslope of DP-03 and on 4-6" quarry spalls/riprap and undiggable.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <u>None</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	_____ (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	_____ (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	_____ (A/B)
4. _____	_____	_____	_____		
50% = _____, 20% = _____	<u>0</u>	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:	
1. <u>None</u>	_____	_____	_____	<u>Total % Cover of:</u>	<u>Multiply by:</u>
2. _____	_____	_____	_____	OBL species _____	x1 = _____
3. _____	_____	_____	_____	FACW species _____	x2 = _____
4. _____	_____	_____	_____	FAC species _____	x3 = _____
5. _____	_____	_____	_____	FACU species _____	x4 = _____
50% = _____, 20% = _____	<u>0</u>	= Total Cover		UPL species _____	x5 = _____
				Column Totals: _____ (A)	_____ (B)
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: 5 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1. <u>Various weedy forbes</u>	<u>10</u>	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation	
2. _____	_____	_____	_____	<input type="checkbox"/> 2 - Dominance Test is >50%	
3. _____	_____	_____	_____	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
4. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5. _____	_____	_____	_____	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹	
6. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
7. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
50% = <u>5</u> , 20% = <u>2</u>	<u>10</u>	= Total Cover			
Woody Vine Stratum (Plot size: n/a)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?	
1. _____	_____	_____	_____	Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
% Bare Ground in Herb Stratum <u>90</u>					
Remarks:					

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 02/13/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-05
 Investigator(s): Payson, Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Depressional area Local relief (concave, convex, none): none Slope (%): ≤1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Verboort Silty Clay Loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

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

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <u>None</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	1 (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	1 (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	100 (A/B)
4. _____	_____	_____	_____		
50% = _____, 20% = _____	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 ft)					
1. <u>Rubus armeniacus</u>	2	n/a*	FACU	Prevalence Index worksheet:	
2. _____	_____	_____	_____	Total % Cover of:	Multiply by:
3. _____	_____	_____	_____	OBL species _____	x1 = _____
4. _____	_____	_____	_____	FACW species _____	x2 = _____
5. _____	_____	_____	_____	FAC species _____	x3 = _____
50% = _____, 20% = _____	2	= Total Cover		FACU species _____	x4 = _____
Herb Stratum (Plot size: 5 ft)					
1. <u>Alopecurus pratensis</u>	85	yes	FAC	UPL species _____	x5 = _____
2. <u>Daucus carota</u>	1	n/a*	FACU	Column Totals: _____ (A)	_____ (B)
3. <u>Hypochaeris radicata</u>	13	no	FACU	Prevalence Index = B/A = _____	
4. <u>Conyza canadensis</u>	2	n/a*	NI	Hydrophytic Vegetation Indicators:	
5. _____	_____	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
6. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
50% = 50, 20% = 20	100	= Total Cover			
Woody Vine Stratum (Plot size: n/a)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
% Bare Ground in Herb Stratum 0					
Remarks:					

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 2/1	95	2.5YR 5/8	5	C	M	SiL	
16-18	10YR 5/1	90	10YR 5/6	10	C	M	SiL	
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---

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

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

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

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

Remarks:

HYDROLOGY

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

Field Observations:	
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>11</u>
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>8-11</u>
	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

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

Remarks: 12" raised ant mound nearby

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 02/13/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-06
 Investigator(s): Payson, Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Slight slope Local relief (concave, convex, none): none Slope (%): <1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Verboort Silty Clay Loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	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"/>		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u>None</u>	_____	_____	_____	
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>67</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)				OBL species _____ x1 = _____
1. <u>Rubus armeniacus</u>	<u>85</u>	<u>yes</u>	<u>FACU</u>	FACW species _____ x2 = _____
2. _____	_____	_____	_____	FAC species <u>75</u> x3 = <u>225</u>
3. _____	_____	_____	_____	FACU species <u>87</u> x4 = <u>348</u>
4. _____	_____	_____	_____	UPL species _____ x5 = _____
5. _____	_____	_____	_____	Column Totals: <u>162</u> (A) <u>573</u> (B)
50% = <u>42.5</u> , 20% = <u>17</u>	<u>85</u>	= Total Cover		Prevalence Index = B/A = <u>3.54</u>
Herb Stratum (Plot size: 5 ft)				Hydrophytic Vegetation Indicators:
1. <u>Agrostis tenuis</u>	<u>40</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Festuca rubra/arundinacea</u>	<u>30</u>	<u>yes</u>	<u>FAC</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%
3. <u>Alopecurus pratensis</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
4. <u>Poa sp.</u>	<u>5</u>	<u>no</u>	<u>-</u>	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. <u>Daucus carota</u>	<u>2</u>	<u>n/a*</u>	<u>FACU</u>	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹
6. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
7. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>41</u> , 20% = <u>16.4</u>	<u>82</u>	= Total Cover		
Woody Vine Stratum (Plot size: n/a)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum <u>18</u>				

Remarks: Vegetation passes the dominance test but fails the prevalence test due to the abundance of blackberry in the shrub layer; therefore, community as a whole is likely non-hydrophytic.

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 02/13/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-07
 Investigator(s): Payson, Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): ≤1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Verboort Silty Clay Loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

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

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u>None</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)				
1. <u>Salix sp.</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover		
Herb Stratum (Plot size: 5 ft)				
1. <u>Phalaris arundinacea</u>	<u>100</u>	<u>yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: n/a)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>				
Remarks:				

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	7.5YR 3/1	80	2.5YR 5/8	20	C	M	SiL	
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

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

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

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

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

Remarks:

HYDROLOGY

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

Field Observations:	
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-16</u>	
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-16</u>	
	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

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

Remarks:

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 02/13/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-08
 Investigator(s): Payson, Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Slight slope Local relief (concave, convex, none): none Slope (%): 1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Verboort Silty Clay Loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" 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"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input type="checkbox"/>	No <input type="checkbox"/>
Remarks:					

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:		
1. <u>Rhamnus purshiana</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>1</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>33</u>	(A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:		
50% = <u>7.5</u> , 20% = <u>3</u>	<u>15</u>	= Total Cover		Total % Cover of:	Multiply by:	
<u>Sapling/Shrub Stratum (Plot size: 15 ft)</u>				OBL species	_____	x1 = _____
1. <u>Rubus armeniacus</u>	<u>95</u>	<u>yes</u>	<u>FACU</u>	FACW species	_____	x2 = _____
2. _____	_____	_____	_____	FAC species	<u>15</u>	x3 = <u>45</u>
3. _____	_____	_____	_____	FACU species	<u>100</u>	x4 = <u>400</u>
4. _____	_____	_____	_____	UPL species	_____	x5 = _____
5. _____	_____	_____	_____	Column Totals:	<u>115</u> (A)	<u>445</u> (B)
50% = <u>47.5</u> , 20% = <u>19</u>	<u>95</u>	= Total Cover		Prevalence Index = B/A = <u>3.87</u>		
<u>Herb Stratum (Plot size: 5 ft)</u>				Hydrophytic Vegetation Indicators:		
1. <u>Polystichum munitum</u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)		
2. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
3. _____	_____	_____	_____			
4. _____	_____	_____	_____			
5. _____	_____	_____	_____			
6. _____	_____	_____	_____			
7. _____	_____	_____	_____			
8. _____	_____	_____	_____			
9. _____	_____	_____	_____			
10. _____	_____	_____	_____			
11. _____	_____	_____	_____			
50% = <u>2.5</u> , 20% = <u>1</u>	<u>5</u>	= Total Cover				
<u>Woody Vine Stratum (Plot size: n/a)</u>				Hydrophytic Vegetation Present?		
1. _____	_____	_____	_____	Yes	<input type="checkbox"/>	No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____			
50% = _____, 20% = _____	_____	= Total Cover				
% Bare Ground in Herb Stratum <u>95</u>						
Remarks:						

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/2	100	--	--	--	--	SiL	
10-16	10YR 3/1	90	5YR 4/4	10	C	M	SiL	
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---

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

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

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>14</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>10</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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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: Banks Project City/County: Banks/Washington County Sampling Date: 02/13/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-09
 Investigator(s): Payson, Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Scraped/Rutted area Local relief (concave, convex, none): concave Slope (%): ≤1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Verboort Silty Clay Loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Data plot in scraped/rutted area on top of fill.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <u>None</u>	_____	_____	_____	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. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:	
1. <u>None</u>	_____	_____	_____		
2. _____	_____	_____	_____	OBL species _____	x1 = _____
3. _____	_____	_____	_____	FACW species _____	x2 = _____
4. _____	_____	_____	_____	FAC species _____	x3 = _____
5. _____	_____	_____	_____	FACU species _____	x4 = _____
50% = _____, 20% = _____	_____	= Total Cover		UPL species _____	x5 = _____
Herb Stratum (Plot size: 5 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Column Totals:	<u>(A)</u> <u>(B)</u>
1. <u><i>Alopecurus geniculatus</i></u>	<u>45</u>	<u>yes</u>	<u>OBL</u>	Prevalence Index = B/A = _____	
2. <u><i>Glyceria borealis</i></u>	<u>10</u>	<u>no</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
3. <u><i>Alisma subcordatum</i></u>	<u>5</u>	<u>no</u>	<u>OBL</u>		
4. <u><i>Trifolium repens</i></u>	<u>15</u>	<u>yes</u>	<u>FAC</u>		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
50% = <u>37.5</u> , 20% = <u>15</u>	<u>75</u>	= Total Cover			
Woody Vine Stratum (Plot size: n/a)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
% Bare Ground in Herb Stratum <u>30</u>					

Remarks: 25% mud bottom with ponded water

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 02/13/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-10
 Investigator(s): Payson, Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): ≤1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Verboort Silty Clay Loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	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"/>		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: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u>None</u>	_____	_____	_____	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)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
50% = _____, 20% = _____	<u>0</u>	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: 15 ft)				
1. <u>None</u>	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% = _____, 20% = _____	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: 5 ft)				
1. <u>Agrostis tenuis</u>	<u>60</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 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Holcus lanatus</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	
3. <u>Trifolium repens</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	
4. <u>Geranium lucidum</u>	<u>10</u>	<u>no</u>	<u>NL (UPL)</u>	
5. <u>Festuca sp.</u>	<u>2</u>	<u>n/a*</u>	<u>FAC</u>	
6. <u>Alopecurus pratensis</u>	<u>2</u>	<u>n/a*</u>	<u>FAC</u>	
7. <u>Daucus carota</u>	<u>2</u>	<u>n/a*</u>	<u>FACU</u>	
8. <u>Cichorium intybus</u>	<u>2</u>	<u>n/a*</u>	<u>FACU</u>	
9. <u>Vicia sp.</u>	<u>2</u>	<u>n/a*</u>	<u>:</u>	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: n/a)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>				

Remarks: *excluded from calculations per chapter 2 guidance

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 02/13/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-11
 Investigator(s): Payson, Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Scraped/Rutted area Local relief (concave, convex, none): concave Slope (%): ≤1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Woodburn Silt Loam, 3-7% Slopes NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Data plot inside of "Z" shaped scraped/rutted area area with ponded water.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:			
1. <u>None</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	1 (A)		
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	1 (B)		
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	100 (A/B)		
4. _____	_____	_____	_____				
50% = _____, 20% = _____	_____	= Total Cover					
Sapling/Shrub Stratum (Plot size: 15 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:			
1. <u>None</u>	_____	_____	_____	Total % Cover of: _____ Multiply by:			
2. _____	_____	_____	_____	OBL species _____	x1 = _____		
3. _____	_____	_____	_____	FACW species _____	x2 = _____		
4. _____	_____	_____	_____	FAC species _____	x3 = _____		
5. _____	_____	_____	_____	FACU species _____	x4 = _____		
50% = _____, 20% = _____	_____	= Total Cover		UPL species _____	x5 = _____		
Herb Stratum (Plot size: 5 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Column Totals:	_____ (A) _____ (B)		
1. <u>Mentha pulegium</u>	25	yes	OBL	Prevalence Index = B/A = _____			
2. <u>Alopecurus pratensis</u>	2	no	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)			
3. <u>Festuca rubra/arundinacea</u>	2	no	FAC				
4. <u>Agrostis tenuis</u>	1	no	FAC				
5. _____	_____	_____	_____				
6. _____	_____	_____	_____				
7. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
8. _____	_____	_____	_____				
9. _____	_____	_____	_____				
10. _____	_____	_____	_____				
11. _____	_____	_____	_____				
50% = 15, 20% = 6	30	= Total Cover		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Woody Vine Stratum (Plot size: n/a)	Absolute % Cover	Dominant Species?	Indicator Status				
1. _____	_____	_____	_____				
2. _____	_____	_____	_____				
50% = _____, 20% = _____	_____	= Total Cover					
% Bare Ground in Herb Stratum 70							

Remarks: 70% mud bottom with ponded water

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/3	100	--	--	--	--	SiL	
2-16	10YR 4/2	60	10YR 5/1	30	D	M	SiL	
			7.5YR 5/8	10	C	M	SiL	

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

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

- 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 Soils³:

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

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes No Depth (inches): 1-4
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks: Episaturation 0-2"

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 02/13/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-12
 Investigator(s): Payson, Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave Slope (%): <1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Woodburn Silt Loam, 3-7% Slopes NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	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"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: Data plot just outside of "Z" shaped scraped/rutted area with ponded water.					

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u>None</u>	_____	_____	_____	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)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
Sapling/Shrub Stratum (Plot size: 15 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:																
1. <u>Rubus armeniacus</u>	<u>I</u>	<u>n/a*</u>	<u>FACU</u>	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Total % Cover of:</th> <th style="width: 40%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
Herb Stratum (Plot size: 5 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:																
1. <u>Festuca rubra/arundinacea</u>	<u>60</u>	<u>yes</u>	<u>FAC</u>	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Agrostis tenuis</u>	<u>10</u>	<u>no</u>	<u>FAC</u>																	
3. <u>Plantago lanceolata</u>	<u>10</u>	<u>no</u>	<u>FACU</u>																	
4. <u>Alopecurus pratensis</u>	<u>5</u>	<u>no</u>	<u>FAC</u>																	
5. <u>Trifolium repens</u>	<u>5</u>	<u>no</u>	<u>FAC</u>																	
6. <u>Geranium lucidum</u>	<u>5</u>	<u>no</u>	<u>NL (UPL)</u>																	
7. <u>Daucus carota</u>	<u>I</u>	<u>n/a*</u>	<u>FACU</u>																	
8. <u>Poa sp.</u>	<u>5</u>	<u>no</u>	<u>:</u>																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover																		
Woody Vine Stratum (Plot size: n/a)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?																
1. _____	_____	_____	_____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>0</u>																				

Remarks:

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/4	100	--	--	--	--	Sil	
2-16	10YR 4/4	70	10YR 5/1	25	D	M	Sil	
			10YR 5/8	5	C	M	Sil	

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

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

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

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

Remarks:

HYDROLOGY

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

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

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

Remarks:

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 02/18/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-13
 Investigator(s): Payson, Summers Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Slight slope Local relief (concave, convex, none): concave Slope (%): 1-2%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Verboort Silty Clay Loam NWI classification: _____
 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 checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Data plot within drainage area in northwest corner of depressional area.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: <u>N/A</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <u>None</u>	_____	_____	_____	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. _____	_____	_____	_____		
50% = _____, 20% = _____	<u>0</u>	= Total Cover			
Sapling/Shrub Stratum (Plot size: <u>N/A</u>)					
1. <u>None</u>	_____	_____	_____	Prevalence Index worksheet:	
2. _____	_____	_____	_____	Total % Cover of:	Multiply by:
3. _____	_____	_____	_____	OBL species _____	x1 = _____
4. _____	_____	_____	_____	FACW species _____	x2 = _____
5. _____	_____	_____	_____	FAC species _____	x3 = _____
50% = _____, 20% = _____	<u>0</u>	= Total Cover		FACU species _____	x4 = _____
Herb Stratum (Plot size: <u>5 ft</u>)					
1. <u>Festuca rubra</u>	<u>45</u>	<u>yes</u>	<u>FAC</u>	UPL species _____	x5 = _____
2. <u>Alopecurus pratensis</u>	<u>45</u>	<u>yes</u>	<u>FAC</u>	Column Totals: _____ (A)	_____ (B)
3. _____	_____	_____	_____	Prevalence Index = B/A = _____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators:	
5. _____	_____	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation	
6. _____	_____	_____	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
7. _____	_____	_____	_____	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
8. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
9. _____	_____	_____	_____	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹	
10. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
11. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
50% = <u>45</u> , 20% = <u>18</u>	<u>90</u>	= Total Cover			
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____	Hydrophytic Vegetation Present?	
2. _____	_____	_____	_____	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
50% = _____, 20% = _____	_____	= Total Cover			
% Bare Ground in Herb Stratum <u>10</u>					
Remarks:					

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	<u>Gley 4/N</u>	<u>98</u>	<u>5YR 5/8</u>	<u>2</u>	<u>C</u>	<u>M</u>	<u>SiL</u>	
4-12	<u>Gley 4/N</u>	<u>60</u>	<u>5YR 5/8</u>	<u>40</u>	<u>C</u>	<u>M</u>	<u>SiL</u>	<u>See remarks</u>
¹ Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> Restrictive Layer (if present): Type: <u>Compacted soil</u> Depth (inches): <u>12</u>			Hydric Soils Present?					
Remarks: <u>Refusal at 12 inches due to compaction. Oxidized manganese observed in 4-12 inch interval.</u>								

HYDROLOGY

Wetland Hydrology Indicators:					
Primary Indicators (minimum of one required; check all that apply)			Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> High Water Table (A2)	(except MLRA 1, 2, 4A, and 4B)	(MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)					
Field Observations:			Wetland Hydrology Present?		
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u> </u>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u> </u>			
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>0-12</u>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks: <u>Saturation due to compacted layer at 12"</u>					

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 02/18/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-14
 Investigator(s): Payson, Summers Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): top of slope Local relief (concave, convex, none): none Slope (%): <1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Verboort Silty Clay Loam NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	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"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: Plot is located just upslope of DP-13.					

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <u>None</u>	_____	_____	_____	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. _____	_____	_____	_____		
50% = _____, 20% = _____	<u>0</u>	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:	
1. <u>None</u>	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
50% = _____, 20% = _____	<u>0</u>	= Total Cover			
Herb Stratum (Plot size: 5 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1. <u>Agrostis tenuis</u>	<u>45</u>	<u>yes</u>	<u>FAC</u>		
2. <u>Festuca rubra</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>		
3. <u>Alopecurus pratensis</u>	<u>15</u>	<u>no</u>	<u>FAC</u>		
4. <u>Holcus lanatus</u>	<u>5</u>	<u>no</u>	<u>FAC</u>		
5. <u>Trifolium repens</u>	<u>5</u>	<u>no</u>	<u>FAC</u>		
6. <u>Geranium lucidum</u>	<u>5</u>	<u>no</u>	<u>NL (UPL)</u>		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover			
Woody Vine Stratum (Plot size: n/a)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
% Bare Ground in Herb Stratum <u>0</u>					

Remarks:

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

Project Site: Banks Project City/County: Banks/Washington Sampling Date: 04/17/15
 Applicant/Owner: West Hills Development County: County State: OR Sampling Point: DP-15
 Investigator(s): Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Scraped/Rutted area Local relief (concave, convex, none): concave Slope (%): ≤1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Woodburn Silt Loam, 3-7% Slopes NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks: Data plot in scraped/rutted area on top of fill.					

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																	
1. <u>None</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	2 (A)																
2. _____	_____	_____	_____																		
3. _____	_____	_____	_____																		
4. _____	_____	_____	_____																		
50% = _____, 20% = _____	_____	= Total Cover		Total Number of Dominant Species Across All Strata:	2 (B)																
<u>Sapling/Shrub Stratum (Plot size: 15 ft)</u>				Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: center;">Total % Cover of:</td> <td style="width: 40%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>		Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																				
OBL species _____	x1 = _____																				
FACW species _____	x2 = _____																				
FAC species _____	x3 = _____																				
FACU species _____	x4 = _____																				
UPL species _____	x5 = _____																				
Column Totals: _____ (A)	_____ (B)																				
Prevalence Index = B/A = _____																					
1. <u>None</u>	_____	_____	_____																		
2. _____	_____	_____	_____																		
3. _____	_____	_____	_____																		
4. _____	_____	_____	_____																		
5. _____	_____	_____	_____																		
50% = _____, 20% = _____	_____	= Total Cover																			
<u>Herb Stratum (Plot size: 5 ft)</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																	
1. <u><i>Alopecurus geniculatus</i></u>	40	yes	OBL																		
2. <u><i>Agrostis tenuis</i></u>	25	yes	FAC																		
3. <u><i>Alisma subcordatum</i></u>	5	no	OBL																		
4. <u><i>Trifolium repens</i></u>	10	no	FAC																		
5. _____	_____	_____	_____																		
6. _____	_____	_____	_____																		
7. _____	_____	_____	_____																		
8. _____	_____	_____	_____																		
9. _____	_____	_____	_____																		
10. _____	_____	_____	_____																		
11. _____	_____	_____	_____																		
50% = <u>40</u> , 20% = <u>16</u>	80	= Total Cover																			
<u>Woody Vine Stratum (Plot size: n/a)</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																	
1. _____	_____	_____	_____																		
2. _____	_____	_____	_____																		
50% = _____, 20% = _____	_____	= Total Cover																			
% Bare Ground in Herb Stratum <u>20</u>																					

Remarks: 20% mud bottom with ponded water

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 4/2	60	10YR 5/8	20	C	M	SIL	
_____	_____	_____	10YR 5/4	10	C	M	SIL	
_____	_____	_____	10YR 4/3	10	C	M	SIL	
10-14	10YR 3/3	95	10YR 5/8	5	C	M	SIL	
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	_____	

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<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 checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

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

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

Hydric Soils Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

Surface Water Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches):	<u>1-3</u>
Water Table Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Depth (inches):	_____
Saturation Present? (includes capillary fringe)	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches):	<u>0-4</u>

Wetland Hydrology Present? Yes No

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

Remarks: Surface saturation only

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 04/17/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-16
 Investigator(s): Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): ≤1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Woodburn Silt Loam, 3-7% Slopes NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	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"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks:					

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																	
1. <u>None</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)																	
2. _____	_____	_____	_____																		
3. _____	_____	_____	_____																		
4. _____	_____	_____	_____																		
50% = _____, 20% = _____	<u>0</u>	= Total Cover		Total Number of Dominant Species Across All Strata: <u>1</u> (B)																	
Sapling/Shrub Stratum (Plot size: 15 ft)																					
1. <u>None</u>	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>		Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																				
OBL species _____	x1 = _____																				
FACW species _____	x2 = _____																				
FAC species _____	x3 = _____																				
FACU species _____	x4 = _____																				
UPL species _____	x5 = _____																				
Column Totals: _____ (A)	_____ (B)																				
Prevalence Index = B/A = _____																					
2. _____	_____	_____	_____																		
3. _____	_____	_____	_____																		
4. _____	_____	_____	_____																		
5. _____	_____	_____	_____																		
50% = _____, 20% = _____	<u>0</u>	= Total Cover																			
Herb Stratum (Plot size: 5 ft)																					
1. <u>Agrostis tenuis</u>	<u>60</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 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																	
2. <u>Trifolium repens</u>	<u>15</u>	<u>no</u>	<u>FAC</u>																		
3. <u>Geranium lucidum</u>	<u>10</u>	<u>no</u>	<u>NL (UPL)</u>																		
4. <u>Festuca sp.</u>	<u>5</u>	<u>no</u>	<u>FAC</u>																		
5. <u>Alopecurus pratensis</u>	<u>5</u>	<u>no</u>	<u>FAC</u>																		
6. <u>Daucus carota</u>	<u>5</u>	<u>no</u>	<u>FACU</u>																		
7. _____	_____	_____	_____																		
8. _____	_____	_____	_____																		
9. _____	_____	_____	_____																		
10. _____	_____	_____	_____																		
11. _____	_____	_____	_____																		
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover																			
Woody Vine Stratum (Plot size: n/a)																					
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																	
2. _____	_____	_____	_____																		
50% = _____, 20% = _____	_____	= Total Cover																			
% Bare Ground in Herb Stratum <u>0</u>																					

Remarks: *excluded from calculations per chapter 2 guidance

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 04/17/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-17
 Investigator(s): Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Scraped/Rutted area Local relief (concave, convex, none): concave Slope (%): ≤1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Woodburn Silt Loam, 3-7% Slopes NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Data plot in scraped/rutted area.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <u>None</u>	_____	_____	_____	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. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15 ft)					
1. <u>None</u>	_____	_____	_____	Prevalence Index worksheet:	
2. _____	_____	_____	_____	Total % Cover of:	Multiply by:
3. _____	_____	_____	_____	OBL species _____	x1 = _____
4. _____	_____	_____	_____	FACW species _____	x2 = _____
5. _____	_____	_____	_____	FAC species _____	x3 = _____
50% = _____, 20% = _____	_____	= Total Cover		FACU species _____	x4 = _____
Herb Stratum (Plot size: 5 ft)					
1. <u><i>Alopecurus geniculatus</i></u>	<u>35</u>	<u>yes</u>	<u>OBL</u>	UPL species _____	x5 = _____
2. <u><i>Mentha pulegium</i></u>	<u>25</u>	<u>yes</u>	<u>OBL</u>	Column Totals: _____ (A)	_____ (B)
3. <u><i>Alopecurus pratensis</i></u>	<u>10</u>	<u>no</u>	<u>FAC</u>	Prevalence Index = B/A = _____	
4. <u><i>Agrostis tenuis</i></u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:	
5. _____	_____	_____	_____	<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation	
6. _____	_____	_____	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
7. _____	_____	_____	_____	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
8. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
9. _____	_____	_____	_____	<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹	
10. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
11. _____	_____	_____	_____		
50% = <u>45</u> , 20% = <u>18</u>	<u>90</u>	= Total Cover		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: n/a)					
1. _____	_____	_____	_____	Hydrophytic Vegetation Present?	
2. _____	_____	_____	_____	Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/>
50% = _____, 20% = _____	_____	= Total Cover			
% Bare Ground in Herb Stratum <u>10</u>					

Remarks: 10% mud bottom with ponded water

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

Project Site: Banks Project City/County: Banks/Washington County Sampling Date: 04/17/15
 Applicant/Owner: West Hills Development State: OR Sampling Point: DP-18
 Investigator(s): Fox Section, Township, Range: SW¼ Sec 31, T2N, R3W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): ≤1%
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Woodburn Silt Loam, 3-7% Slopes NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

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

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <u>None</u>	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
50% = _____, 20% = _____	<u>0</u>	= Total Cover		Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
Sapling/Shrub Stratum (Plot size: 15 ft)					
1. <u>None</u>	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
50% = _____, 20% = _____	<u>0</u>	= Total Cover		Prevalence Index worksheet:	
				Total % Cover of:	Multiply by:
				OBL species _____	x1 = _____
				FACW species _____	x2 = _____
				FAC species _____	x3 = _____
				FACU species _____	x4 = _____
				UPL species _____	x5 = _____
				Column Totals: _____ (A)	_____ (B)
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: 5 ft)					
1. <u>Agrostis tenuis</u>	<u>80</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 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <u>Alopecurus pratensis</u>	<u>15</u>	<u>no</u>	<u>FAC</u>		
3. <u>Hypochaeris radicata</u>	<u>5</u>	<u>no</u>	<u>FACU</u>		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
50% = <u>50</u> , 20% = <u>20</u>	<u>100</u>	= Total Cover			
Woody Vine Stratum (Plot size: n/a)					
1. _____	_____	_____	_____	Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____		
50% = _____, 20% = _____	_____	= Total Cover			
% Bare Ground in Herb Stratum <u>0</u>					

Remarks: *excluded from calculations per chapter 2 guidance

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	10YR 4/3	70	10YR 5/8	10	C	M	SiL	
			10YR 4/1	20	D	M	SiL	
9-16	10YR 4/1	80	10YR 5/8	20	C	M	SiL	

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

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

- 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 Soils³:

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

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Wetland Hydrology Present? Yes No

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

Remarks: Soil moist 0-4 inches but no ponded water and no full saturation.

APPENDIX B
VEGETATED CORRIDOR DATA SHEETS

VEGETATED CORRIDOR COMMUNITY TYPE DATA SHEET



6650 SW Redwood Lane, Suite 333
 Portland, OR 97224
 Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Arbor Village No. 9 **DATE:** 4/13/2015
LOCATION: Banks/Washington County **SAMPLING POINT:** VC-01
INVESTIGATOR(S): J. Fox, B. Baker, and G. Summers **COMMUNITY ID:** Grassland

Tree Stratum	Plot Size: <u>r = 30ft</u>	Absolute Cover (%)	Native? (Y/N)	
1. None				Vegetated Corridor Condition Degraded
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
Total Tree Cover =		0		

Native Combined Cover	
Absolute Cover (%)	
Tree =	_____
Shrub =	_____
Herb =	_____
Total Cover =	0

Sapling/Shrub Stratum	Plot Size: <u>r = 30ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)	
1. None					Tree Canopy Cover Absolute Cover (%) Total Cover = 0
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
Total Shrub Cover =		0			

Percent Invasives	
Absolute Cover (%)	
Tree =	n/a
Shrub =	_____
Herb =	_____
Total Cover =	0

Herb Stratum	Plot Size: <u>r = 10ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)	
1. <i>Alopecurus pratensis</i>		95	N	N	Corridor Condition Parameters
2. <i>Trifolium repens</i>		5	N	N	
3. <i>Hypochaeris radicata</i>		1	N	N	
4. <i>Geranium lucidum</i>		1	N	N	
5.					
6.					
7.					
8.					
9.					
10.					
Total Herb Cover =		102			

Good	>80% Native Combined Cover and >50% Tree Canopy Exists
Marginal	50-80% Native Combined Cover and 26-50% Tree Canopy Exists
Degraded	<50% Native Combined Cover and <25% Tree Canopy Exists

Comments:
 Data plot within vegetated corridor of upper northwest section of Wetland A.

VEGETATED CORRIDOR COMMUNITY TYPE DATA SHEET



6650 SW Redwood Lane, Suite 333
 Portland, OR 97224
 Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Arbor Village No. 9

DATE: 4/13/2015

LOCATION: Banks/Washington County

SAMPLING POINT: VC-02

INVESTIGATOR(S): J. Fox, B. Baker, and G. Summers

COMMUNITY ID: Invasive

Tree Stratum	Plot Size: <u>r = 30ft</u>	Absolute Cover (%)	Native? (Y/N)
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Tree Cover =		<u>0</u>	

Vegetated Corridor Condition

Degraded

Sapling/Shrub Stratum	Plot Size: <u>r = 30ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)
1. <i>Rubus armeniacus</i>		100	N	Y
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
Total Shrub Cover =		<u>100</u>		

Native Combined Cover

Absolute Cover (%)

Tree = _____

Shrub = _____

Herb = _____

Total Cover = 0

Tree Canopy Cover

Absolute Cover (%)

Total Cover = 0

Herb Stratum	Plot Size: <u>r = 10ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)
1. None				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
Total Herb Cover =		<u>0</u>		

Percent Invasives

Absolute Cover (%)

Tree = n/a

Shrub = 100

Herb = _____

Total Cover = 100

Corridor Condition Parameters	
Good	>80% Native Combined Cover and >50% Tree Canopy Exists
Marginal	50-80% Native Combined Cover and 26-50% Tree Canopy Exists
Degraded	<50% Native Combined Cover and <25% Tree Canopy Exists

Comments:

Data plot within thick patch of blackberry bordering northwest portion of Wetland A.

VEGETATED CORRIDOR COMMUNITY TYPE DATA SHEET



6650 SW Redwood Lane, Suite 333
 Portland, OR 97224
 Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Arbor Village No. 9 **DATE:** 4/13/2015
LOCATION: Banks/Washington County **SAMPLING POINT:** VC-03
INVESTIGATOR(S): J. Fox, B. Baker, and G. Summers **COMMUNITY ID:** Scrub-Shrub

Tree Stratum	Plot Size: <u>below</u>	see note	Absolute Cover (%)	Native? (Y/N)	
1. <i>Corylus cornuta</i>			10	Y	Vegetated Corridor Condition Marginal
2. <i>Rhamnus purshiana</i>			20	Y	
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
Total Tree Cover =			30		

Native Combined Cover	
	Absolute Cover (%)
Tree =	30
Shrub =	100
Herb =	10
Total Cover =	140

Sapling/Shrub Stratum	Plot Size: <u>below</u>	see note	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)
1. <i>Spiraea douglasii</i>			80	Y	N
2. <i>Rhamnus purshiana</i>			5	Y	N
3. <i>Corylus cornuta</i>			15	Y	N
4. <i>Rubus armeniacus</i>			10	N	Y
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
Total Shrub Cover =			110		

Tree Canopy Cover	
	Absolute Cover (%)
Total Cover =	30

Percent Invasives	
	Absolute Cover (%)
Tree =	n/a
Shrub =	10
Herb =	_____
Total Cover =	10

Herb Stratum	Plot Size: <u>below</u>	see note	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)
1. <i>Polystichum munitum</i>			10	Y	N
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
Total Herb Cover =			10		

Corridor Condition Parameters	
Good	>80% Native Combined Cover and >50% Tree Canopy Exists
Marginal	50-80% Native Combined Cover and 26-50% Tree Canopy Exists
Degraded	<50% Native Combined Cover and <25% Tree Canopy Exists

Comments:
 Data collected within northeast vegetated corridor of Wetland A and is representative of the entire area as a whole rather than a discrete plot.

EXHIBIT 12
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VEGETATED CORRIDOR COMMUNITY TYPE DATA SHEET



6650 SW Redwood Lane, Suite 333
 Portland, OR 97224
 Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Arbor Village No. 9 **DATE:** 4/13/2015
LOCATION: Banks/Washington County **SAMPLING POINT:** VC-04
INVESTIGATOR(S): J. Fox, B. Baker, and G. Summers **COMMUNITY ID:** Scrub-Shrub

Tree Stratum	Plot Size: r = 30ft	Absolute Cover (%)	Native? (Y/N)
1.	<i>Amelanchier alnifolia</i>	25	Y
2.	<i>Faxinus latifolia</i>	10	Y
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Tree Cover =		35	

Vegetated Corridor Condition

Marginal

Native Combined Cover

Absolute Cover (%)	
Tree =	35
Shrub =	55
Herb =	
Total Cover =	90

Sapling/Shrub Stratum	Plot Size: r = 30ft	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)
1.	<i>Rhamnus purshiana</i>	10	Y	N
2.	<i>Populus trichocarpa</i>	10	Y	N
3.	<i>Spiraea douglasii</i>	15	Y	N
4.	<i>Rosa nutkana</i>	20	Y	N
5.	<i>Prunus cerasifera</i>	5	N	N
6.	<i>Rubus armeniacus</i>	10	N	Y
7.				
8.				
9.				
10.				
Total Shrub Cover =		70		

Tree Canopy Cover

Absolute Cover (%)	
Total Cover =	35

Percent Invasives

Absolute Cover (%)	
Tree =	n/a
Shrub =	10
Herb =	
Total Cover =	10

Herb Stratum	Plot Size: r = 10ft	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)
1.	<i>Alopecurus pratensis</i>	75	N	N
2.	<i>Daucus carota</i>	5	N	N
3.	<i>Plantago lanceolata</i>	10	N	N
4.	<i>Geranium lucidum</i>	5	N	N
5.	<i>Poa sp.</i>	5	N	N
6.				
7.				
8.				
9.				
10.				
Total Herb Cover =		100		

Corridor Condition Parameters

Good	>80% Native Combined Cover and >50% Tree Canopy Exists
Marginal	50-80% Native Combined Cover and 26-50% Tree Canopy Exists
Degraded	<50% Native Combined Cover and <25% Tree Canopy Exists

Comments:
 Data plot within vegetated corridor along southeast portion of Wetland A and vegetated corridor of Wetland F.

EXHIBIT 12
 Page 204 of 241

VEGETATED CORRIDOR COMMUNITY TYPE DATA SHEET



6650 SW Redwood Lane, Suite 333
 Portland, OR 97224
 Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Arbor Village No. 9

DATE: 4/13/2015

LOCATION: Banks/Washington County

SAMPLING POINT: VC-05

INVESTIGATOR(S): J. Fox, B. Baker, and G. Summers

COMMUNITY ID: Grassland

Tree Stratum	Plot Size: <u>r = 30ft</u>	Absolute Cover (%)	Native? (Y/N)		Vegetated Corridor Condition
1. None					Degraded
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
Total Tree Cover =		<u>0</u>			

Native Combined Cover	
Absolute Cover (%)	
Tree =	<u> </u>
Shrub =	<u> </u>
Herb =	<u> </u>
Total Cover =	<u> 0 </u>

Sapling/Shrub Stratum	Plot Size: <u>r = 30ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)		Absolute Cover (%)
1. None						Total Cover = <u> 0 </u>
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
Total Shrub Cover =		<u>0</u>				

Tree Canopy Cover	
Absolute Cover (%)	
Total Cover =	<u> 0 </u>

Percent Invasives	
Absolute Cover (%)	
Tree =	<u> n/a </u>
Shrub =	<u> </u>
Herb =	<u> </u>
Total Cover =	<u> 0 </u>

Herb Stratum	Plot Size: <u>r = 10ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)		
1. <i>Agrostis tenuis</i>		60	N	N		Corridor Condition Parameters
2. <i>Holcus lanatus</i>		10	N	N		
3. <i>Trifolium repens</i>		10	N	N		
4. <i>Geranium lucidum</i>		10	N	N		
5. <i>Festuca sp.</i>		2	N	N		
6. <i>Alopecurus pratensis</i>		2	N	N		
7. <i>Daucus carota</i>		2	N	N		
8. <i>Cichorium intybus</i>		2	N	N		
9. <i>Vicia sp.</i>		2	N	N		
10.						
Total Herb Cover =		<u>100</u>				

Good	>80% Native Combined Cover and >50% Tree Canopy Exists
Marginal	50-80% Native Combined Cover and 26-50% Tree Canopy Exists
Degraded	<50% Native Combined Cover and <25% Tree Canopy Exists

Comments:

Data plot within vegetated corridor of Wetland B.

VEGETATED CORRIDOR COMMUNITY TYPE DATA SHEET



6650 SW Redwood Lane, Suite 333
 Portland, OR 97224
 Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Arbor Village No. 9 **DATE:** 4/13/2015
LOCATION: Banks/Washington County **SAMPLING POINT:** VC-06
INVESTIGATOR(S): J. Fox, B. Baker, and G. Summers **COMMUNITY ID:** Grassland

Tree Stratum	Plot Size: <u>r = 30ft</u>	Absolute Cover (%)	Native? (Y/N)	
1. None				Vegetated Corridor Condition Degraded
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
Total Tree Cover =		0		

Native Combined Cover	
Absolute Cover (%)	
Tree =	_____
Shrub =	_____
Herb =	_____
Total Cover =	0

Sapling/Shrub Stratum	Plot Size: <u>r = 30ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)	
1. None					Tree Canopy Cover Absolute Cover (%) Total Cover = 0
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
Total Shrub Cover =		0			

Percent Invasives	
Absolute Cover (%)	
Tree =	n/a
Shrub =	_____
Herb =	_____
Total Cover =	0

Herb Stratum	Plot Size: <u>r = 10ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)	
1. <i>Agrostis tenuis</i>		60	N	N	Corridor Condition Parameters
2. <i>Trifolium repens</i>		15	N	N	
3. <i>Geranium lucidum</i>		10	N	N	
4. <i>Festuca sp.</i>		5	N	N	
5. <i>Alopecurus pratensis</i>		5	N	N	
6. <i>Daucus carota</i>		5	N	N	
7.					
8.					
9.					
10.					
Total Herb Cover =		100			

Good	>80% Native Combined Cover and >50% Tree Canopy Exists
Marginal	50-80% Native Combined Cover and 26-50% Tree Canopy Exists
Degraded	<50% Native Combined Cover and <25% Tree Canopy Exists

Comments:
 Data plot within vegetated corridor of Wetland C.

VEGETATED CORRIDOR COMMUNITY TYPE DATA SHEET



6650 SW Redwood Lane, Suite 333
 Portland, OR 97224
 Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Arbor Village No. 9 **DATE:** 4/13/2015
LOCATION: Banks/Washington County **SAMPLING POINT:** VC-07
INVESTIGATOR(S): J. Fox, B. Baker, and G. Summers **COMMUNITY ID:** Invasive

Tree Stratum	Plot Size: <u>r = 30ft</u>	Absolute Cover (%)	Native? (Y/N)		<u>Vegetated Corridor Condition</u>
1. None					Degraded
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
Total Tree Cover =		<u>0</u>			

<u>Native Combined Cover</u>	
Absolute Cover (%)	
Tree =	<u> </u>
Shrub =	<u>20</u>
Herb =	<u> </u>
Total Cover =	<u>20</u>

Sapling/Shrub Stratum	Plot Size: <u>r = 30ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)	
1. <i>Rubus armeniacus</i>		80	N	Y	Degraded
2. <i>Spirea douglassii</i>		20	Y	N	
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
Total Shrub Cover =		<u>100</u>			

<u>Tree Canopy Cover</u>	
Absolute Cover (%)	
Total Cover =	<u>0</u>

<u>Percent Invasives</u>	
Absolute Cover (%)	
Tree =	<u>n/a</u>
Shrub =	<u>80</u>
Herb =	<u> </u>
Total Cover =	<u>80</u>

Herb Stratum	Plot Size: <u>r = 10ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)	
1. None					Degraded
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
Total Herb Cover =		<u>0</u>			

<u>Corridor Condition Parameters</u>	
Good	>80% Native Combined Cover and >50% Tree Canopy Exists
Marginal	50-80% Native Combined Cover and 26-50% Tree Canopy Exists
Degraded	<50% Native Combined Cover and <25% Tree Canopy Exists

Comments:
 Data plot within patch of spirea and blackberry southwest of Wetland D.

VEGETATED CORRIDOR COMMUNITY TYPE DATA SHEET



6650 SW Redwood Lane, Suite 333
Portland, OR 97224
Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Arbor Village No. 9 **DATE:** 4/13/2015
LOCATION: Banks/Washington County **SAMPLING POINT:** VC-08
INVESTIGATOR(S): J. Fox, B. Baker, and G. Summers **COMMUNITY ID:** Grassland

Tree Stratum	Plot Size: <u>r = 15ft</u>	Absolute Cover (%)	Native? (Y/N)		<u>Vegetated Corridor Condition</u>
1. None					Degraded
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
Total Tree Cover =		0			

<u>Native Combined Cover</u>	
	Absolute Cover (%)
Tree =	_____
Shrub =	_____
Herb =	_____
Total Cover =	0

Sapling/Shrub Stratum	Plot Size: <u>r = 15ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)	
1. <i>Rubus armeniacus</i>		1	N	Y	Degraded
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
Total Shrub Cover =		1			

<u>Tree Canopy Cover</u>	
	Absolute Cover (%)
Total Cover =	0

<u>Percent Invasives</u>	
	Absolute Cover (%)
Tree =	n/a
Shrub =	1
Herb =	_____
Total Cover =	1

Herb Stratum	Plot Size: <u>r = 10ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)	
1. <i>Festuca rubra/arundinacea</i>		60	N	N	Degraded
2. <i>Agrostis tenuis</i>		10	N	N	
3. <i>Plantago lanceolata</i>		10	N	N	
4. <i>Alopecurus pratensis</i>		5	N	N	
5. <i>Trifolium repens</i>		5	N	N	
6. <i>Geranium lucidum</i>		5	N	N	
7. <i>Daucus carota</i>		1	N	N	
8. <i>Poa sp.</i>		5	N	N	
9.					
10.					
Total Herb Cover =		101			

<u>Corridor Condition Parameters</u>	
Good	>80% Native Combined Cover and >50% Tree Canopy Exists
Marginal	50-80% Native Combined Cover and 26-50% Tree Canopy Exists
Degraded	<50% Native Combined Cover and <25% Tree Canopy Exists

Comments:
 Data plot within vegetated corridor of Wetland D. Plot represents plant community along length of footpath that is between Wetland A and Wetland F.

VEGETATED CORRIDOR COMMUNITY TYPE DATA SHEET



6650 SW Redwood Lane, Suite 333
 Portland, OR 97224
 Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Arbor Village No. 9

DATE: 4/13/2015

LOCATION: Banks/Washington County

SAMPLING POINT: VC-09

INVESTIGATOR(S): J. Fox, B. Baker, and G. Summers

COMMUNITY ID: Grassland

Tree Stratum	Plot Size: <u>r = 30ft</u>	Absolute Cover (%)	Native? (Y/N)
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Tree Cover =		0	

Vegetated Corridor Condition

Degraded

Native Combined Cover

Absolute Cover (%)

Tree = _____

Shrub = _____

Herb = _____

Total Cover = **0**

Tree Canopy Cover

Absolute Cover (%)

Total Cover = **0**

Sapling/Shrub Stratum	Plot Size: <u>r = 30ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)
1. None				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
Total Shrub Cover =		0		

Percent Invasives

Absolute Cover (%)

Tree = n/a

Shrub = _____

Herb = _____

Total Cover = **0**

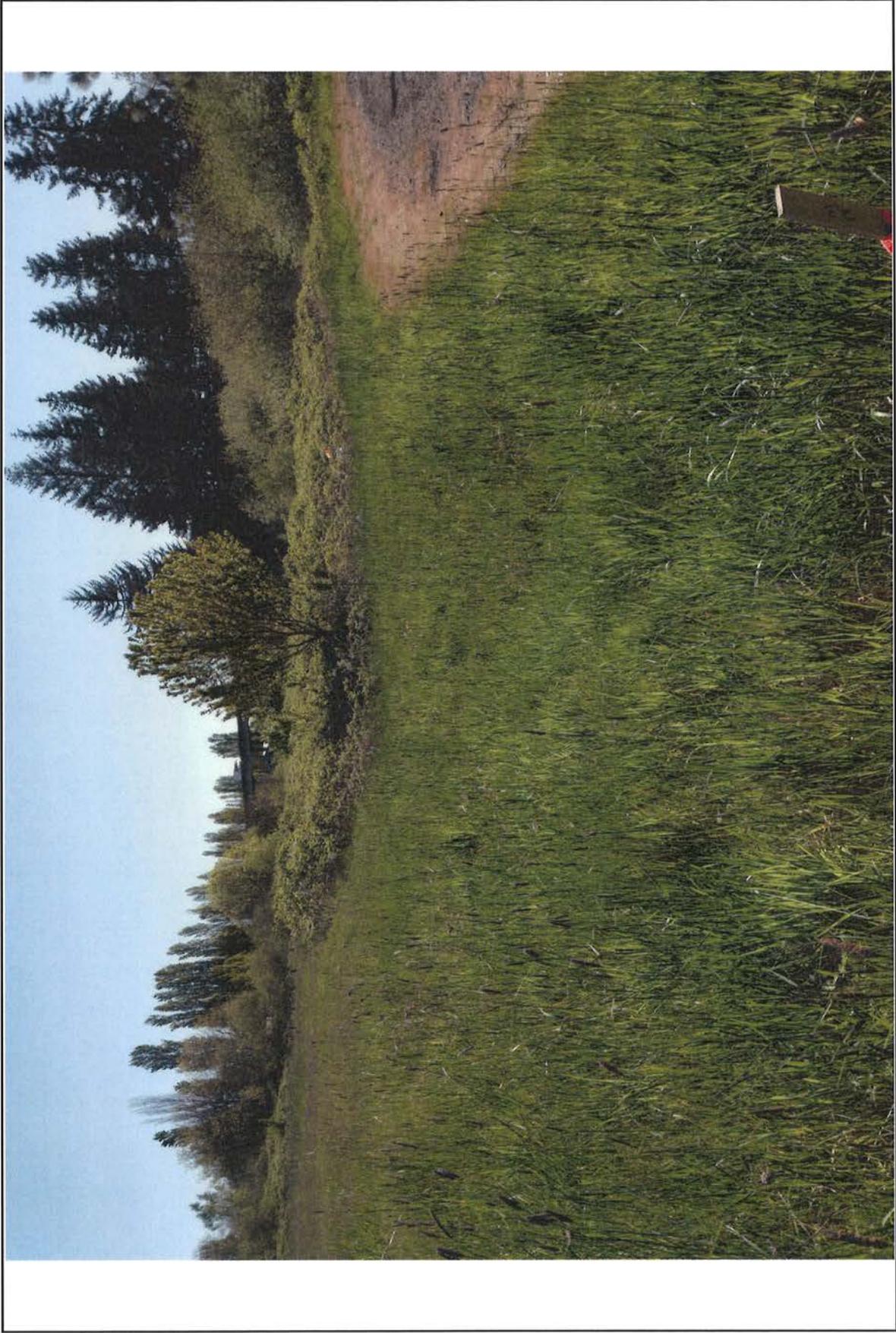
Herb Stratum	Plot Size: <u>r = 10ft</u>	Absolute Cover (%)	Native? (Y/N)	Invasive? (Y/N)
1. <i>Agrostis tenuis</i>		80	N	N
2. <i>Alopecurus pratensis</i>		15	N	N
3. <i>Hypochaeris radicata</i>		5	N	N
4.				
5.				
6.				
7.				
8.				
9.				
10.				
Total Herb Cover =		100		

Corridor Condition Parameters	
Good	>80% Native Combined Cover and >50% Tree Canopy Exists
Marginal	50-80% Native Combined Cover and 26-50% Tree Canopy Exists
Degraded	<50% Native Combined Cover and <25% Tree Canopy Exists

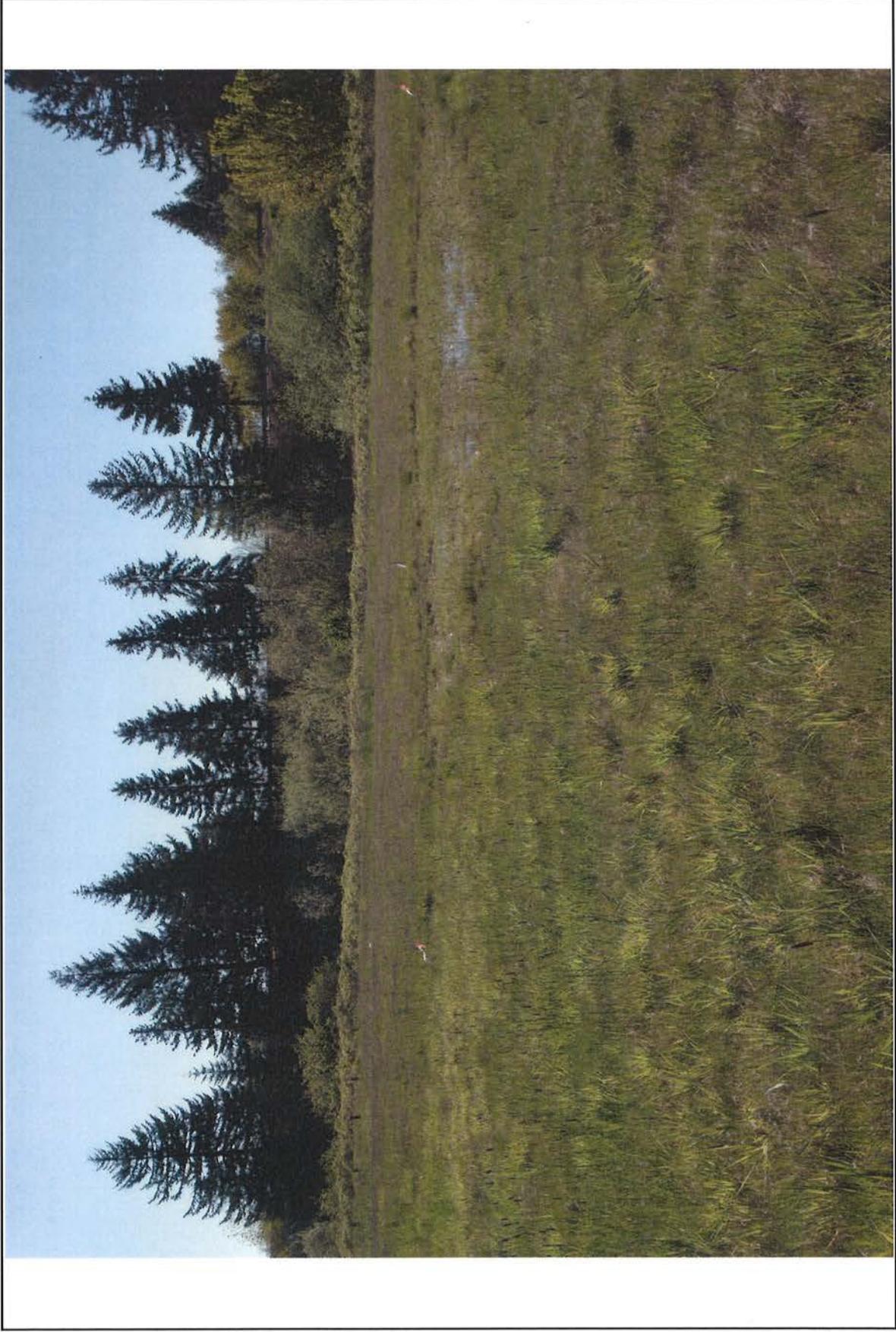
Comments:
 Data plot within vegetated corridor of Wetland E.

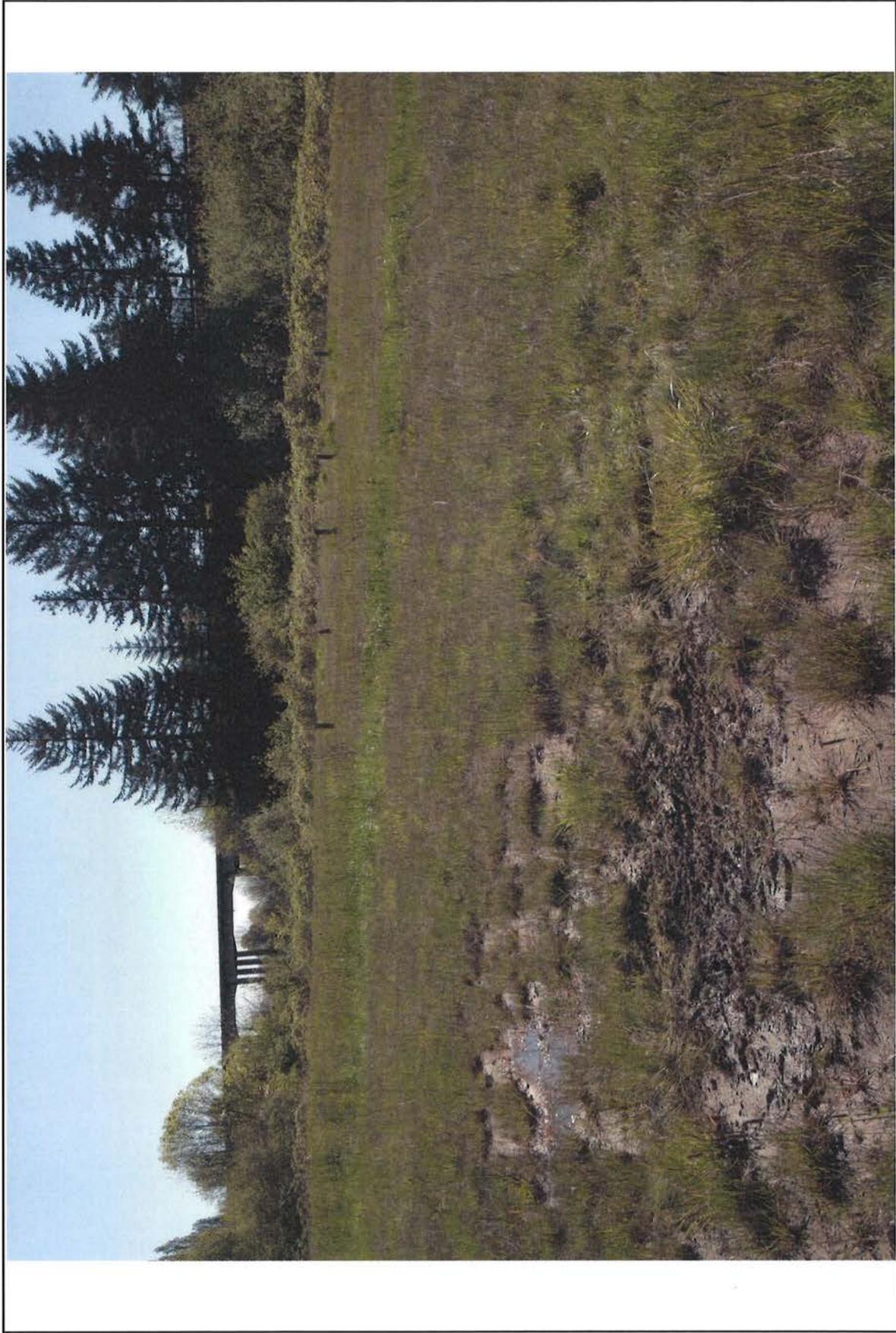
APPENDIX C

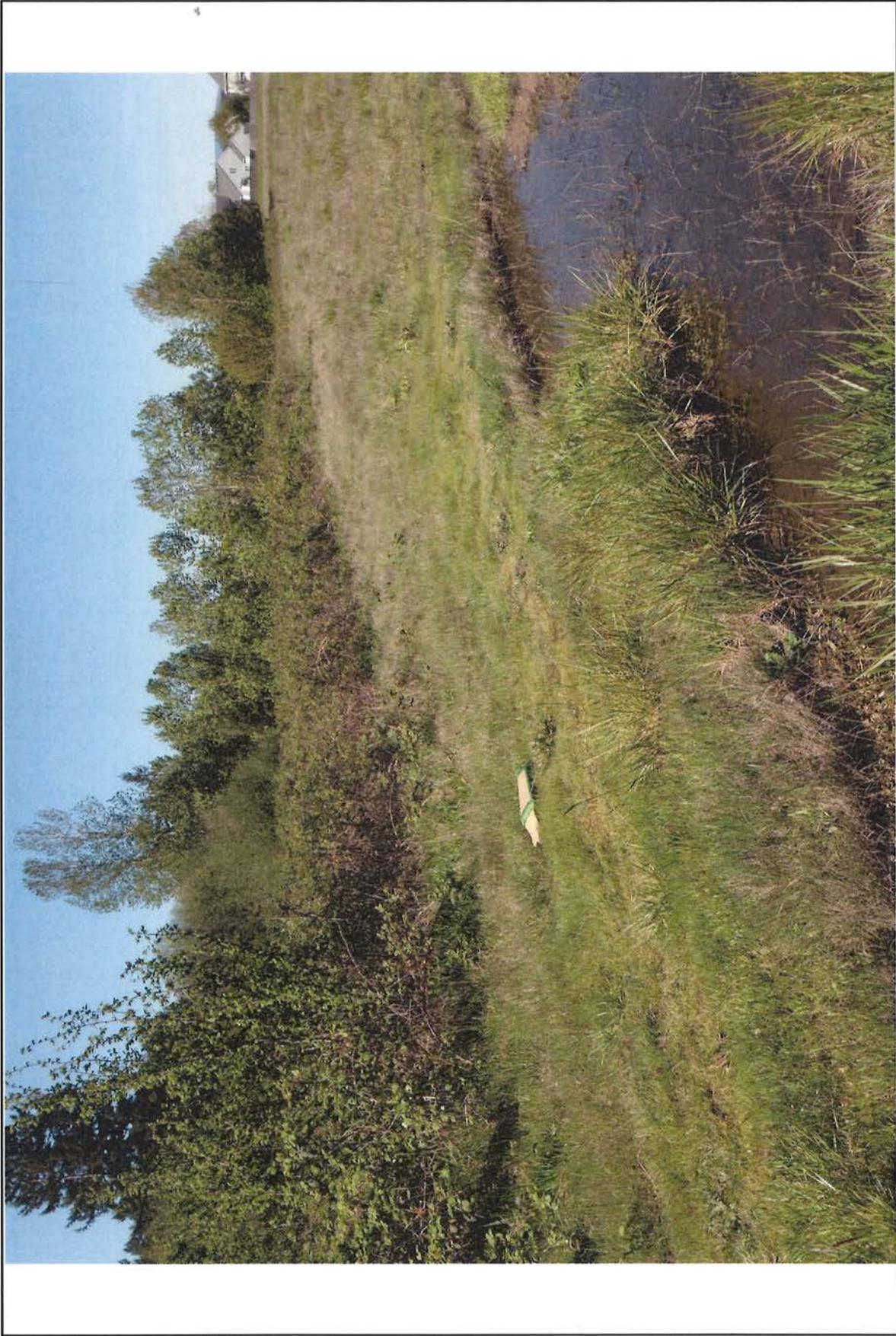
STUDY AREA PHOTOGRAPHS



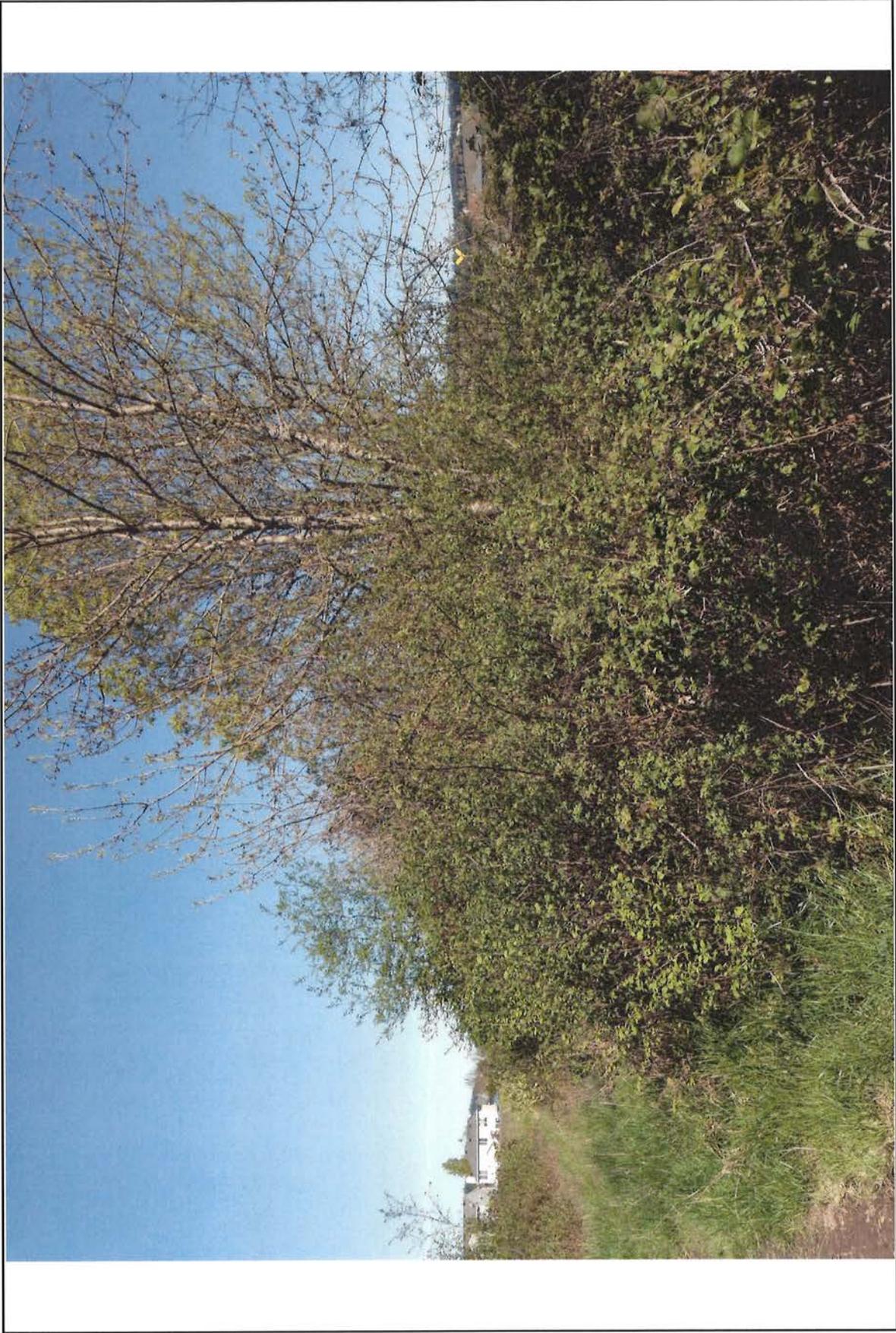
















APPENDIX D
FUNCTIONAL ASSESSMENT

1 INTRODUCTION

A functional assessment for the wetlands of the Arbor Village No. 9 property (study area) was performed using a hydrogeomorphic (HGM)-based assessment technique that was developed by the Oregon Department of State Lands (DSL) for wetland and riparian sites in Oregon (Adamus and Field 2001). This methodology, commonly referred to as the Oregon HGM method, is an adaptation of a national wetland functions assessment approach developed by the U.S. Army Corps of Engineers that is based on the concept that hydrologic and geomorphic factors control how wetlands function. This approach uses HGM classification, reference wetlands, assessment models, and functional indices to assess the ability of a wetland to perform selected functions (Smith et al. 1995).

2 ASSESSMENT AREA SELECTION

For this assessment, only the wetlands that would be directly impacted by the construction of the Arbor Village No. 9 residential development were assessed. These include Wetlands B through E, which are located along the fill portion of the study area.

3 WETLAND CLASSIFICATION

As required by the Oregon HGM method, the HGM classifications of the wetlands to be assessed were determined prior to performing the assessment method. Wetlands were classified in accordance with the HGM-based classification system for Oregon presented in *Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and Riparian Sites – Statewide Classification and Profiles* (Adamus 2011). Because these wetlands are similar in HGM position (scraped or rutted areas on the fill), soil, and hydrological characteristics, they are collectively described in this site assessment.

3.1 Wetlands B through E

Wetlands B through E are located on a fill area of the project site. Sometime after the late 1990s, the fill was placed and leveled in the northern half of the site to bring the elevation to grade, likely in preparation for future development. This created a broad, level terrace that ends at a 4- to 5-foot fill slope running west to east through the east-central portion of the project site. These wetlands receive seasonal water from surface runoff, lateral

subsurface flow, and direct precipitation. Based on their landscape position and hydrologic sources, Wetlands B through E are classified as slope/flats wetlands.

4 STUDY AREA ASSESSMENT

The Oregon HGM method evaluates the ability of a wetland to perform 13 different functions using data collected by the visual observation of various indicators in the field, as well as information obtained from existing maps, aerial photographs, and other data sources (e.g., local soil surveys). The 13 functions assessed by HGM are as follows:

1. Water Storage and Delay
2. Sediment Stabilization and Phosphorus Retention
3. Nitrogen Removal
4. Thermoregulation
5. Primary Production
6. Resident Fish Habitat Support
7. Anadromous Fish Habitat Support
8. Invertebrate Habitat Support
9. Amphibian and Turtle Habitat Support
10. Breeding Waterbird Support
11. Wintering and Migratory Waterbird Support
12. Songbird Habitat Support
13. Support of Characteristic Vegetation

Of these functions, the following three were not assessed because they are not applicable to slope/flats wetlands: thermoregulation, resident fish habitat support, and anadromous fish habitat support. In addition, Wetlands B through E were not assessed for breeding waterbird support because that function requires the presence of greater than 0.5 acre of stagnant surface waters that remain until July 1 of most years. None of these wetlands exhibit such characteristics.

The Oregon HGM method allows for two functional assessment approaches: 1) the reference-based method, which assesses functions quantitatively by comparing observations of functional indicators within the wetland being assessed to data from reference wetlands;

and 2) the judgmental method, which assesses functions based on a qualitative checklist. Currently, the Oregon HGM method only has reference-based methods for wetlands and riparian sites in the riverine impounding, slope/flats, and tidal HGM classes. Assessment of wetlands in other HGM classes must use the judgmental method.

Anchor QEA used the reference-based method for the assessment of Wetlands B through E and completed the Excel-based HGM slope/flats data form available from the DSL Aquatic Resource Management Forms and Publications page for each assessment site. Under this method, functions are assessed by comparing the assessment site to a series of indicators representing either the highest functioning or least altered conditions, as determined during development of the HGM method. Anchor QEA opted to compare the wetlands to the highest functioning wetlands scores because Wetlands B through E appear to have been created over the years after the site was leveled by soil compaction and scraping from maintenance and recreational vehicles. The total area of all four wetlands is 0.094 acre or 4,095 square feet (Table 1).

**Table 1
Delineated Wetlands in Assessment Site**

Wetland	Description	Classification		On-site Area	
		Cowardin 1979	HGM (Adamus 2001)	Acres	Square Feet
Wetland B	PEM wetland	PEM	Slope/flats	0.030	1,307
Wetland C	PEM wetland	PEM	Slope/flats	0.007	305
Wetland D	PEM wetland	PEM	Slope/flats	0.005	218
Wetland E	PEM wetland	PEM	Slope/flats	0.052	2,265
Total area of wetlands				0.094	4,095

Note:

HGM = hydrogeomorphic

PEM = palustrine emergent

4.1 Assessment Results – Impacted Wetlands

Table 2 summarizes the qualitative function levels based on the function score. The functional score rating from the HGM methodology is assigned a rating level from low to high based upon an even distribution of the potential scores.

Table 2
Interpretation of Functional Assessment Scores

Function Score Range	Qualitative Function Level
0 – 0.19	Low
0.20 – 0.39	Moderately low
0.40 – 0.59	Moderate
0.60 – 0.79	Moderately high
0.80 – 1.00	High

4.1.1 Wetlands B through E

Wetlands B through E are located on a fill area of the study area. All are isolated palustrine emergent wetlands smaller than 2,300 square feet or 0.053 acre in size and are seasonally saturated with ponded water that is 0 to 4 inches deep during the wet season. The wetlands are dominated by grasses interspersed by various weedy forbs. No shrubs or trees are present within or immediately adjacent to the wetlands. The vegetation in Wetlands B through E is dominated by water foxtail (*Alopecurus geniculatus*; obligate wetland [OBL]) and pennyroyal (*Mentha pulegium*; OBL), along with small floating mannagrass (*Glyceria borealis*; OBL), water plantain (*Alisma subcordatum*; OBL), and white clover (*Trifolium repens*; facultative [FAC]). Vegetation in Wetland D also contained small amounts of meadow foxtail (*Alopecurus pratensis*; FAC), fescue (*Festuca* spp.), and colonial bentgrass (*Agrostis tenuis*; FAC).

Results of the HGM assessment for Wetlands B through E are summarized in Table 3.

Table 3
Summary of Wetland Functional Assessment Results for Wetlands B through E

Functions	Wetland Scores (HFR = 1.0)	Qualitative Function Level
Water Storage and Delay	0.15	Low
Sediment Stabilization and Phosphorus Retention	0.31	Moderate low
Nitrogen Removal	0.30	Moderate low
Thermoregulation ¹	0.0	N/A
Primary Production	0.24	Moderately low
Resident Fish Habitat Support ¹	0.0	N/A
Anadromous Fish Habitat Support ¹	0.0	N/A
Invertebrate Habitat Support	0.25	Moderately low
Amphibian and Turtle Habitat Support	0.61	Moderately high
Breeding Waterbird Support ²	0.0	N/A
Wintering and Migratory Waterbird Support	0.46	Moderate
Songbird Habitat Support	0.28	Moderately low
Support of Characteristic Vegetation	0.30	Moderately low

Notes:

1. Not applicable to slope/flats wetlands
 2. Not applicable to sites that lack ≥0.5 acre of stagnant surface water that remains until July 1 of most years
- HFR = highest functioning reference
N/A = not applicable

Wetlands B through E received a low score (0.15) for the Water Storage and Delay function. This is primarily because these wetlands are shallow, small in size, and exhibit only limited seasonal inundation and, therefore, do not provide significant water storage function.

Wetlands B through E received a moderately low score (0.31) for the Sediment Stabilization and Phosphorous Retention function. Factors that positively influenced this score include the variable microtopography in the form of ruts or scraps, presence of emergent herbaceous vegetation, and underlying hydric soils, all of which impede overland flow, increase residence time, and facilitate sedimentation, as well as bind phosphorous during growth cycles. Site characteristics that limit the performance of this function include the lack of permanent surface water and the relatively high degree of past and current soil disturbance (leveling, compaction, scraping, and rutting) from past development-related activities and ongoing maintenance and recreational vehicle disturbance.

The Nitrogen Removal functional capacity score for the Wetlands B through E assessment site was moderately low (0.30). Limiting factors for this function include the limited seasonal inundation and the absence of woody debris and trees. The relatively high degree of soil disturbance from past and current activities also limits the site's ability to remove nitrogen. Factors positively affecting nitrogen removal include the presence of hydric soils and microtopographic variation from scrapes and ruts caused by maintenance and recreational vehicles.

The Wetlands B through E assessment site received a moderately low functional capacity score (0.24) for Primary Production. Factors that limit the site's ability to perform this function include the low variation of vegetation categories, distribution of vegetation covering the site from regular mowing or vehicle disturbance, and the lack of permanent surface water. The percentage of herbaceous vegetation cover and presence of some seasonal inundation positively influence this function.

The Invertebrate Habitat Support function was rated moderately low (0.25) for the Wetlands B through E assessment site. Factors limiting this function are the lack of permanent surface, low vegetation diversity, the lack of woody debris, and the regular disturbance by maintenance and recreational vehicles. Factors that could positively influence the site include the seasonal inundation and proximity to a larger wetland complex within 200 feet of the site.

The Wetlands B through E assessment site received a marginally moderately high score (0.61) for the Amphibian and Turtle Habitat function. Factors that positively influenced this functional score are the microtopographic variation from the scrapes and ruts, presence of hydric soils, and the presence of herbaceous emergent vegetation. Limiting factors include the absence of permanent ponding, high degree of past and current soil disturbance, lack of basking sites, lack of woody debris and trees, and the site's proximity to a busy road and railroad corridor. Given these limiting factors, Anchor QEA is of the opinion that this score is too high and that a moderate to moderately low rating for this function is more appropriate.

The Wetlands B through E assessment site received a moderate score (0.46) for the Wintering and Migratory Waterbird Support function. Site characteristics that favored the performance of this function include presence of seasonal surface water with variable water depths, the presence of hydric soils, and proximity to surrounding wetlands and non-wetland waters. Site characteristics that limit its ability to perform this function include the absence of hummocks, limited distribution of vernal pools, and a high degree of disturbance from maintenance and recreational vehicle use.

The Wetlands B through E assessment site received a moderately low score (0.28) for the Songbird Habitat Support function. Site characteristics that limit the performance of this function include the lack of permanent surface water, low percentage of adjacent grasslands and wooded areas, the site's proximity to a busy road and regular disturbance from vehicles, and the absence of woody debris.

For the Support of Characteristic Vegetation function, the Wetlands B through E assessment site received a moderately low score (0.30). Limiting factors include the relatively high cover of non-native herbaceous species, the site's proximity to a busy road, regular disturbance from mowing and recreational vehicles, the lack of shrubs and trees present, and the limited extent of natural cover in the immediate vicinity of the site.

5 SUMMARY

5.1 Wetlands B through E

Overall, Wetlands B through E are numerically rated as moderately low for most functions. The small extent of the individual wetlands (all less than 0.053 acre) and the low vegetation diversity (herbaceous layer with no shrubs or trees present) may limit the actual functional contribution of the wetlands to the landscape. Other limitations include frequent soil disturbance from vehicles, the lack of sufficient hydrology to develop permanent surface water, and shallow seasonal water depths that result in low diversity of plants and habitats within the wetland boundary. Additionally, although there is a larger wetland complex nearby and a narrow band of forest to the south and east, Wilson River Highway Road is also immediately to the south, a railroad corridor is immediately to the east, and existing residential development is immediately to the north and west, and this results in substantial

alteration to much of the area surrounding the site. Habitat fragmentation and surrounding land use (e.g., agricultural, golf course, and residential housing) within the larger landscape context further isolate these wetlands.

6 REFERENCES

- Adamus, P.R., 2001. *Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and Riparian Sites – Statewide Classification and Profiles*. Oregon Division of State Lands, Salem, Oregon. February 2001.
- Adamus, P.R., and D. Field, 2001. *Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetlands and Riparian Sites. I. Willamette Valley Ecoregion, Riverine Impounding and Slope/Flat Subclasses*. Volume IA: Assessment Methods. Oregon Division of State Lands, Salem, Oregon. February 2001.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe, 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Government Printing Office. December 1979.
- Smith, R.D., A. Amman, C. Bartoldus, and M.M. Brinson, 1995. *An Approach for Assessing Wetland Functions Using Hydrogeomorphic Classification, Reference Wetlands, and Functional Indices*. Wetlands Research Program Technical Report WRP-DE-9, Waterways Experiment Station. U.S. Army Corps of Engineers. October 1995.

SHEET FOR AUTOMATIC CALCULATION OF FUNCTION SCORES - revised June 2008

Slope or Flats subclass

Site Name: Ralston-Ferris Wetland A

Date: 06/03/2015

It is recommended to do a "Save As" from this blank spreadsheet for each use, assigning different file names. This will help reduce the chance of accidentally confusing new data with previously entered data. For reference, the function(s) addressed by each indicator are noted in column E. Codes are shown below next to the function names. The capital letter in the code (e.g., sp-**B**) in column E refers to the code for the indicator in the published Volume IA. **HFR**= scaled to highest functioning site of this subclass found by DSL; **LAR**= scaled to least-altered site of this subclass found by DSL. Scores greater than 1 indicate the capacity of the function at the site you assessed may be greater than in all sites of this subclass assessed by the DSL team during model calibration. Data **must** be entered for every indicator, unless the scale block for this subclass is shaded. Each value in column D must be less than or equal to 1.

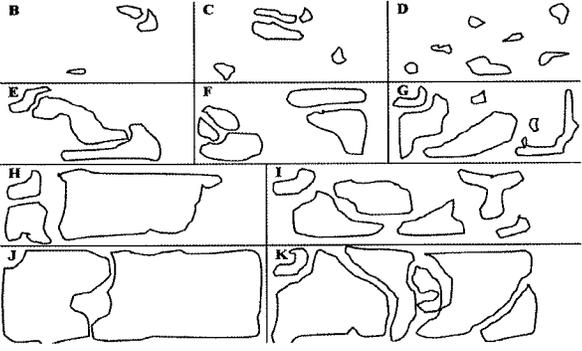
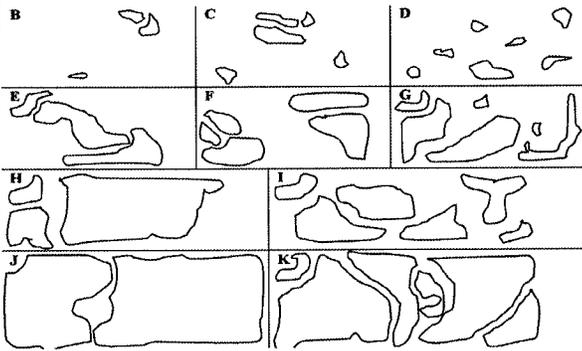
Function:	Calculated Function Capacity for SF sites	
	if HFR:	if LAR:
Water Storage & Delay (ws)	0.15	0.33
Sediment Stabilization & Phosphorus Retention (sp)	0.31	0.33
Nitrogen Removal (n)	0.30	0.35
Primary Production (pp)	0.24	0.24
Invertebrate Habitat Support (i)	0.25	0.25
Amphibian & Turtle Habitat (at)	0.61	0.80
Breeding Waterbird Support (bw)	0.00	0.00
Wintering & Migrating Waterbird Support (ww)	0.46	0.53
Songbird Habitat Support (sb)	0.28	0.43
Support of Characteristic Vegetation (v)	0.30	0.31

Note 1: Models and scores for ws, sp, n, and pp intentionally do not account for the **area** of the wetland, an especially important factor for these functions.

Note 2: This method should be applied to an entire contiguous wetland, not just to the portion affected directly by a planned alteration or restoration.

Indicator	Raw Datum	Scale for SF sites	Scaled Datum	Function
Presence of permanent surface water (water year-round during most years)? (p. 82)	absent	absent = 0 present = 1.0	0	sb-P rf-X
Percent of permanent zone that is open water (i.e., lacking emergent and underwater plants) (p. 79) (Answer "0" if no permanent zone is present)	0	100 =.1 80-99 =.8 60-80 = 1.0 40-60 =.8 20-40 =.4 0-20 =.2	0.2	at-M
Percent of site that is inundated only seasonally (i.e., watermarks, moss lines, debris lines, etc.) (p. 81)	20	none = 0 1-10 =.1 10-25 =.6 25-50 =.8 > 50 = 1.0	0.6	i-B n-A ws-A
		none = 0 1-20 =.5 20-40 =.7 40-60 =.8 60-80 =.9 >80 = 1.0	0.6	ww-A
At least 0.5 acre of surface water persists until at least July 1 and water is mostly wider than 10 ft?	No	Yes = 1 No = 0	0	bw-X

Predominant water depth during biennial low water (p. 82)	0"	0" = 0 1-2" =.6 2-24" = 1.0 2-6 ft =.8 >6 ft =.6	0	bw-D
		0 =.1 1-2" = 1.0 2-24" =.8 >24" =.2	0.1	i-D
Percent of site occupied by the most extensive depth category at this site during biennial low water. (p. 81). (Delimit the low water zone first, then break into these depth categories, then identify the category that predominates horizontally). (Possible categories are: 0 inches; 1-2 inches; 2-24 inches; 2-6 feet; < 6 feet)	100	100 = 0 80-100 =.1 50-80 =.4 30-50 =.8 <30 = 1.0	0	bw-B
Difference between the predominating biennial high and low water levels (p. 71) 0) = No change 1) = Difference of 1 class 2) = Difference of 2 classes 3) = Difference of 3 classes 4) = Difference of 4 classes Class 1 = 0 inches Class 2 = 1-2 inches Class 3 = 2-24 inches Class 4 = 2-6 feet Class 5 = > 6 feet	2	0) = 0 1) =.3 2) =.5 3) =.8 4) = 1.0	0.5	n-B at-E bw-E
		0) = 0 1) = .25 2) = .5 3) = .75 4) = 1.0	0.5	ww-F
Predominant vertical increase in surface water level (ft) in most of the seasonal zone (i.e., water marks, moss lines, debris lines, etc. Look at the highest point for 2 year flood and measure the difference from biennial low)	0.3	0 = 0 .1 - .4 =.25 .5- 1.0 =.5 1 - 2 =.75 >2 = 1.0	0.25	ws-B
Number of depth categories during biennial high water. (p. 77) Categories are: ___ 1 - 2 inches ___ 2 - 24 inches ___ 2 - 6 ft ___ > 6 ft	2	1 = 0 2 =.3 3 =.6 4 = 1.0	0.3	bw-C
		1 = .1 2 = .3 3 = .6 4 = 1.0	0.3	ww-E

<p>Percent & distribution of pools during biennial high water. (p. 80)</p> <p>(Note: if site is > 1 acre, select the condition that predominates in 1 acre sub-units of the site.)</p> <p>A = None</p> 	A	A = 0 B = .6 C = .65 D = .7 E, F = .75 K = .8 H = .85 I = .9 J = .95 G = 1.0	0	sp-C ww-D i-E, at-A
<p>Percent & distribution of pools during biennial low water. (p. 80)</p> <p>(Note: if site is > 1 acre, select the condition that predominates in 1 acre sub-units of the site.)</p> <p>A = None</p> 	A	A = 0 B = .6 C = .65 D = .7 E, F = .75 J = .8 H = .85 I = .9 K = .95 G = 1.0	0	bw-A, pp-E, n l
<p>Percent of the site occupied by hummocks (p. 74, 75)</p>	none	none = 0 1-10 = .6 10-90 = .8 >90 = 1.0	0	at-B ww-C sb-M sp-B pp-C n-G i-F

<p>Maximum annual extent of vernal pools/ shorebird scrapes and mudflats: (p. 76)</p> <p>A = none B = 1 – 100 sq. ft. C = 100-1000 sq. ft. D = 1000 – 10,000 sq. ft. E =>10,000 sq. ft</p> <p>Must meet ALL of the following: a) herbs are generally < 4” and comprise < 80% ground cover during winter or early spring b) topography is basically flat c) inundated to a depth of < 6” for 2 or more continuous weeks d) never shaded by trees, shrubs, or buildings</p>	A	A = 0 B =.6 C =.7 D =.8 E = 1.0	0	ww-B
Presence of logs or boulders that extend above the surface of permanent water (p. 84)	absent	absent = 0 present = 1.0	0	at-G
Predominant soil texture: (p 83) GC= gravel or cobble SA=sand, sandy loam, or loamy sand L= loam, silty loam, gravelly loam C= clay, sandy clay, silty clay, clay loam, silty clay loam O= organic particles<1mm <u>Guidance:</u> 1. Soil remains in a ball when squeezed YES...Go to 3; NO ...Go to 2 2. > 50% of the particles (by weight) are > 1 mm YES..."GC"; NO ..."SA" 3. Squeezed soil forms an even ribbon YES...Go to 4; NO ..."SA" 4. Soil ribbon extended > 1" without breaking YES..."C/O"; NO ...Go to 5 5. Soils feels very gritty YES... "SA"; NO..."L"	L	GC =.1 SA =.2 L =.8 C/O = 1.0	0.8	sp-D
Presence of some mottling and/or other features that indicate oxygen deficits, or, permanent water is present	Present	absent = 0 present = 1.0	1	n-X
Mapped soil series is hydric (not simply a hydric inclusion). See county soil map and p. 75.	Yes	1= yes 0= no	1	v-C at-D ww-G i-I
Percent of site that was constructed on former uplands (non-hydric soil) (p. 81): 6) = recent, >90% of site 5) = recent, 10-90% of site 4) = recent, 1-10% of site 3) = >5 years ago, >90% of site 2) = >5 years ago, 10-90% of site 1) = >5 years ago, 1-10% of site 0) = none	2	6) = 0 5) = .1 4) = .2 3) = .3 2) = .4 1) = .5 0) = 1.0	0.4	i-J at-K v-K n-D

Tally the percent of surrounding land cover (exclude the site itself) as exists during a typical May. Answer each row independently. They do not necessarily sum to 100%.

within 200 ft of the site boundary:

a. % Water, wetland =	15
b. % Grassland, water, wetland =	20
c. % Grassland, row crops =	5
d. % Wooded =	10
e. % Natural (not lawn, crops, paved, building)=	40

within 1000 ft:

f. % Water, wetland =	5
g. % Grassland, water, wetland =	15
h. % Grassland, row crops =	30
i. % Wooded =	10
j. % Natural =	25

within 5,280 ft:

k. % Water, wetland =	5
l. % Grassland, row crops =	75
m. % Wooded =	15

In column D, enter the scaled value for the number in column B. (= a), above)	15	0 = 0 1-10 =.4 10-20 =.8 >20 = 1.0	0.8	bw-I ww-I
In column D, enter the scaled value for the number in column B. (= (b), above)	20	<10 =.1 10-20 =.2 20-40 =.4 40-60 =.6 60-80 =.8 >80 = 1.0	0.2	sb-N
In column D, enter the scaled value for the number in column B. (= (c), above)	5	<10 = 0 10-20 = .1 20-40 = .3 40-80 = .5 80-90 = .7 90-100 = 1.0	0	ww-K
In column D, enter the scaled value for the number in column B. (= (d), above)	10	0 = 0 1-10 =.1 10-20 =.2 20-40 =.4 40-60 =.6 60-80 =.8 >80 = 1.0	0.1	sb-I
In column D, enter the scaled value for the number in column B. (= (e), above)	40	<10 = 0 10-20 = .1 20-40 = .3 40-80 = .5 80-90 = .7 90-100 = 1.0	0.3	i-L at-O v-R
In column D, enter the scaled value for the number in column B. (= (a+f+k)/3), above)	8	none = 0 1 - 10 =.4 10-20 =.8 >20 = 1.0	0.4	ww-H bw-J

In column D, enter the scaled value for the number in column B. $(=(c+h+1)/3)$, above)	37	<10 = 0 10-20 = .1 20-40 = .3 40-80 = .5 80-90 = .7 90-100 = 1.0	0.3	ww-J
In column D, enter the scaled value for the number in column B. $(=(d+i+m)/3)$, above)	11.66666667	<10 =.1 10-20 =.2 20-40 =.4 40-60 =.6 60-80 =.8 >80 = 1.0	0.2	sb-J
In column D, enter the scaled value for the number in column B. $(=(e+j)/2)$, above)	32.5	<10 = 0 10-20 = .1 20-40 = .3 40-80 = .5 80-90 = .7 90-100 = 1.0	0.3	bw-K
In column D, enter the scaled value for the number in column B. $(=(b+g)/2)$, above)	17.5	<10 =.1 10-20 =.2 20-40 =.4 40-60 =.6 60-80 =.8 >80 = 1.0	0.2	sb-O
Percent of land cover within 200 ft (but only in the contributing watershed) that is "natural" – that is, NOT cropland, lawns, pavement, or buildings (p. 79)	40	<10 = 0 10-20 =.1 20-40 =.3 40-90 =.5 90-100 = 1.0	0.3	pp-F
		<10 = 0 10-20 =.1 20-40 =.3 40-90 =.5 90-99 =.9 100 = 1.0	0.3	i-M v-Q
Percent woodland divided by percent grassland-crops within 200 ft of the site (p. 71)	1	<.1 =.1 0.1-0.8 =.6 0.8-1.2 = 1.0 1.2-2.0 =.6 >2.0 =.1	1	at-P
Distance (ft) to nearest busy road (p. 71) This includes a) any road or parking lot in a develop area that contains >4 buildings per acre, b) any road with a maximum traffic rate of > 6 vehicles per minute, during an average day during the summer	150	<100 = 0 100-300 =.3 300-600 =.5 600-1200 =.7 1200-2400 =.8 2400-4800 =.9 >4800 = 1.0	0.3	bw-G at-N v-P sb-R

Note: The following 5 rows must sum to 100%. The number of visitors is immaterial.

Percent of site including 100-ft buffer that is visited 365 days a year or almost so =	0
Percent of site including 100-ft buffer that is visited more than 80 days a year (>20% of year), but less than daily =	25
Percent of site including 100-ft buffer that is visited 20-80 days a year (e.g., about once a week) =	50
Percent of site including 100-ft buffer that is visited just a few days a year =	25
Percent of site including 100-ft buffer that is almost never visited =	0

Scale the calculated value in the box on the right (sum of the above 5 rows) and enter the scaled value in column D (p. 72)	300	100-200 = 0 200-300 =.3 300-400 =.7 400-500 =1.0	0.3	bw-H v-O sb-Q
Percent of site affected by soil leveling (i.e., portion previously leveled by equipment for farming)	100	100 =.1 10-99 =.3 1-10 =.6 0 = 1.0	0.1	at-C i-G pp-D sp-F n-H
Percent of site currently affected by soil compaction: (i.e., by equipment, vehicles, livestock, humans, fill) 6 = recent, at >90% of site 5 = recent, at 10-90% of site 4 = recent, at 1-10% of site 3 = >5 years ago, >90% of site 2 = >5 years ago, 10-90% of site 1 = >5 years ago, 1-10% of site 0 = none	5	5/6) =.1 4) =.2 3) =.4 2) =.6 1) =.8 0) = 1.0	0.1	sp-G v-M sb-K
Percent of site's vegetation that is mowed or subject to extreme grazing at least annually (p. 81)	100	>90 = 0 10-90 =.2 1-10 =.4 none = 1.0	0	sb-L v-N
Most of site is burned, or harvested for hay or timber, at least biennially? (p. 72)	No	no = 0 yes = 1.0	0	n-J
Percent of site currently affected by soil mixing (plowing, excavation, bulldozing, etc.): (p. 81) 6 = recent, at >90% of site 5 = recent, at 10-90% of site 4 = recent, at 1-10% of site 3 = >5 years ago, >90% of site 2 = >5 years ago, 10-90% of site 1 = >5 years ago, 1-10% of site 0 = none	3	5 or 6 =.1 4 =.2 3 =.4 2 =.6 1 =.8 0 = 1.0	0.4	at-f i-H v-L pp-A n-C sp-E
Percent of the site that is vegetated (including submersed aquatics) (p. 82)	60	<10 =.1 10-20 =.2 20-40 =.4 40-60 =.6 60-80 =.8 >80 = 1.0	0.6	sb-A v-A

Percent of site with woody vegetation (p. 82)	<10	<10 =.1 10-20 =.2 20-40 =.4 40-60 =.6 60-80 =.8 >80 = 1.0	0.1	sb-b
Percent of seasonal zone that is bare during most of the dry season. (i.e., devoid of vegetation, except trees) (Answer "0" if no seasonal zone)	0.5	>80 = 0 60-80 =.2 40-60 =.4 20-40 =.6 1-20 =.8 0 = 1.0	0.4	pp-G sp-H
Percent of site that is inundated permanently and contains emergent, floating, or submersed plants (p. 72)	0	0 = 0 1-10 =.9 >10 = 1.0	0	i-A
		0 = 0 1-10 =.4 10-30 =.8 30-60 = 1.0 60-90 =.9 >90 =.6	0	bw-F
Percent cover of herbs within the seasonal zone (p. 72)	60	0 = 0 1-30 =.1 30-50 =.6 50-70 =.75 70-100 = 1.0	0.75	at-L
Percent of whole site that has closed canopy (p. 80)	<10	<10 =.1 10-20 =.2 20-40 =.4 40-60 =.6 60-80 =.8 >80 = 1.0	0.1	sb-C
Percent understory shrub & vine cover beneath the drip line of trees (p. 82) (Answer "0" if no wooded areas)	<10	<10 =.1 10-20 =.2 20-40 =.4 40-60 =.6 60-80 =.8 >80 = 1.0	0.1	sb-D

<p>Number & distribution of vegetation forms --- herbs, shrubs, trees. If only one form, answer "A". To count, the patch must comprise >0.5 acre or >5% of vegetated area. See p. 77 for enlargement of diagram.</p> <table border="1"> <thead> <tr> <th></th> <th>Veg forms are mostly in discrete quite homogeneous zones or patches:</th> <th>Zones/patches are recognizable but not homogeneous, and are:</th> <th>Forms are highly intermixed; zones are mostly not recognizable; no patch >20% of site</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Two forms ...</td> <td>B 1. of about equal area </td> <td>C 1. of about equal area </td> <td rowspan="2">D </td> </tr> <tr> <td>B 2. of unequal areas </td> <td>C 2. of unequal areas </td> </tr> <tr> <td rowspan="2">All three forms ...</td> <td>E 1. of about equal area </td> <td>F 1. of about equal area </td> <td rowspan="2">G </td> </tr> <tr> <td>E 2. of unequal areas </td> <td>F 2. of unequal areas </td> </tr> </tbody> </table>		Veg forms are mostly in discrete quite homogeneous zones or patches:	Zones/patches are recognizable but not homogeneous, and are:	Forms are highly intermixed; zones are mostly not recognizable; no patch >20% of site	Two forms ...	B 1. of about equal area 	C 1. of about equal area 	D 	B 2. of unequal areas 	C 2. of unequal areas 	All three forms ...	E 1. of about equal area 	F 1. of about equal area 	G 	E 2. of unequal areas 	F 2. of unequal areas 	A	A = 0 B2 = .60 C2 = .65 B1 = .70 C1, D = .75 E2 = .80 F2 = .85 E1 = .90 F1 = .95 G = 1.0	0	pp-B v-B at-J i-K sb-H
	Veg forms are mostly in discrete quite homogeneous zones or patches:	Zones/patches are recognizable but not homogeneous, and are:	Forms are highly intermixed; zones are mostly not recognizable; no patch >20% of site																	
Two forms ...	B 1. of about equal area 	C 1. of about equal area 	D 																	
	B 2. of unequal areas 	C 2. of unequal areas 																		
All three forms ...	E 1. of about equal area 	F 1. of about equal area 	G 																	
	E 2. of unequal areas 	F 2. of unequal areas 																		
Number of woody species (p. 82)	unwooded	unwooded= 0 1-2 =.1 3-4 =.25 5-6 =.5 7-9 =.75 10-18 =.9 >18 = 1.0	0	sb-E																
Number of native woody species (p. 78)	0	0 = 0 1 =.1 2-3 =.25 4-5 =.5 6-9 =.75 10-13 =.9 >14 = 1.0	0	v-F																
Percent of woody species list consisting of species that are native (p. 78)	0	0 = 0 1-57 =.1 58-66 =.25 67-74 =.5 75-79 =.75 80-99 =.9 100 = 1.0	0	v-g																
Percent of woody cover within stratum that is comprised of non-native species (p. 82) (Use the greater of the tree, understory shrub, or open shrub stratum's percent)	N/A	100 = 0 80-99 =.1 30-79 =.25 10-29 =.5 5-9 =.75 1-4 =.9 0 = 1.0	0	v-H																
Spatial predominance of non-native herbs (p. 84) A = Non-natives predominate B = Cannot determine (about equal) C = Natives predominate	A	A = 0 B = .5 C = 1.0	0	v-D																

Percent of herb species list comprised of species that are non-native (p. 80)	95	100 = 0 80-99 =.1 67-79 =.25 60-66 =.5 25-59 =.75 1-24 =.9 0 = 1.0	0.1	v-E
Average diameter (inches) of the 3 largest trees. (p. 71)	none	none = 0 1-5 =.1 6-9 =.25 10-17 =.5 18-25 =.75 26-35 =.9 >35 = 1.0	0	sb-G v-J at-I n-F
Number of deadwood types. Potentially 12 types: (p. 77) <input type="checkbox"/> Class 1: freshly fallen, have bark & branches, 4-8" <input type="checkbox"/> Class 1: freshly fallen, have bark & branches, 8-20" <input type="checkbox"/> Class 1: freshly fallen, have bark & branches, >20" <input type="checkbox"/> Class 2: mildly rotted and mostly on ground: 4-8" <input type="checkbox"/> Class 2: mildly rotted and mostly on ground: 8-20" <input type="checkbox"/> Class 2: mildly rotted and mostly on ground: >20" <input type="checkbox"/> Class 3: well rotted, losing shape: 4-8" <input type="checkbox"/> Class 3: well rotted, losing shape: 8-20" <input type="checkbox"/> Class 3: well rotted, losing shape: >20" <input type="checkbox"/> Standing stumps/snags: 4-8" <input type="checkbox"/> Standing stumps/snags: 8-20" <input type="checkbox"/> Standing stumps/snags: >20" <input type="checkbox"/> Artificial debris – check only if no others present	0	0 = 0 1 =.1 2 =.25 3-4 =.5 5-7 =.75 >7 = 1.0	0	sb-F v-I n-E at-H
<p>Class 1</p>  <p>Class 2</p>  <p>Class 3</p> 				
Land cover in the vicinity of the site in the 1850's was wooded?	Yes	1 = Yes 0 = No	1	n-K pp-H at-R sb-S v-S

APPENDIX E
ALTERNATIVE DESIGN EXHIBIT

MISSOURI
 License No. 50
 P 175-000001
 P 175-000002
 P 175-000003
 P 175-000004
 P 175-000005
 P 175-000006
 P 175-000007
 P 175-000008
 P 175-000009
 P 175-000010

30 LOTS
QUAIL VALLEY (-8 LOTS)

- LOTS NORTH OF STREET B TOO SHALLOW, LOSE LOTS.
- IMPACTS TO MAINTENANCE ROAD FOR EXISTING POND

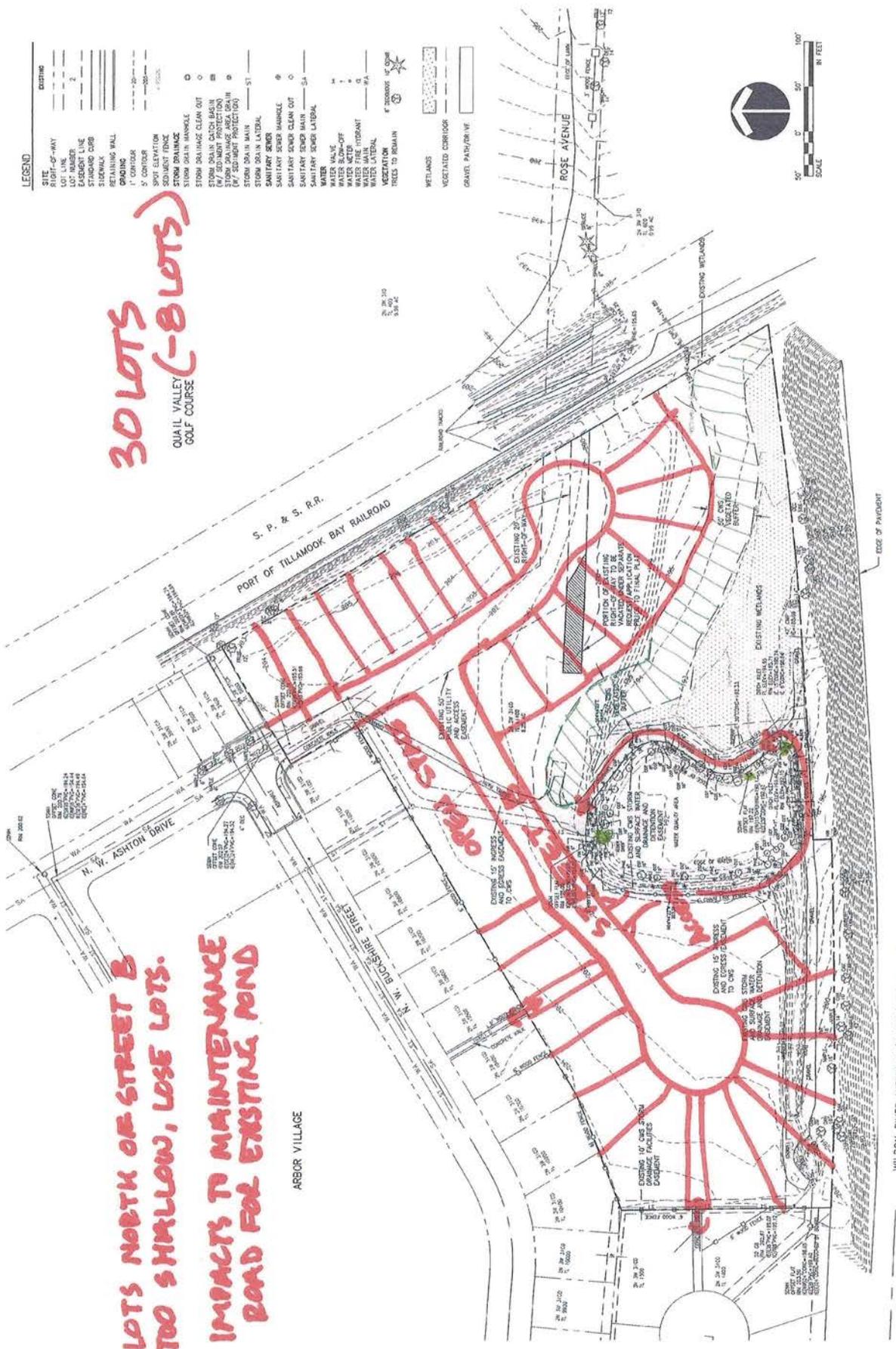


EXHIBIT 13
REDUCED-SIZE PLAN SET

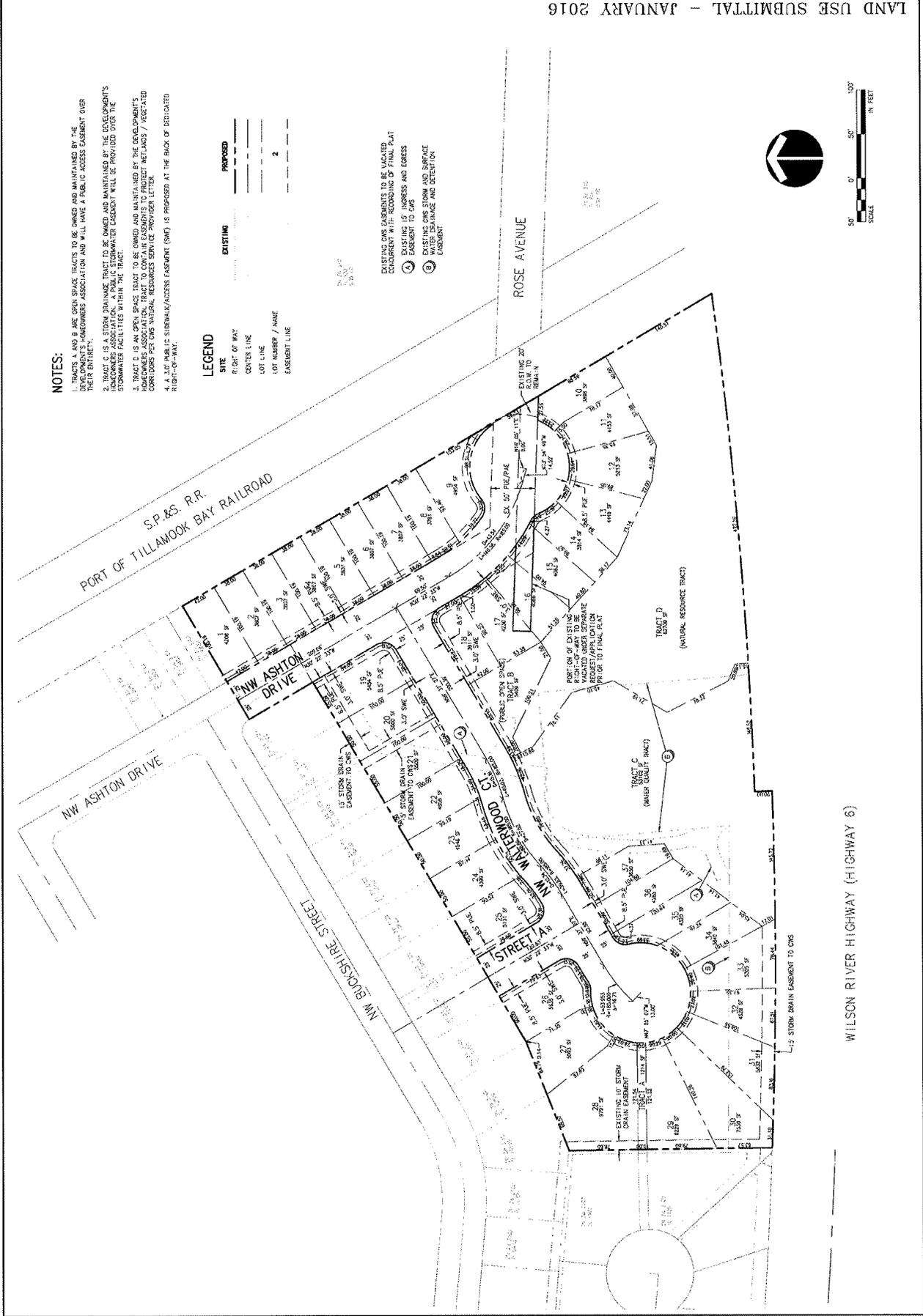
NO.	DATE	BY	REVISION COMMENTS
001	01/14/16	JWB	ISSUE FOR PERMITTING
002			
003			
004			
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006			
007			
008			
009			
010			

WEST HILLS DEVELOPMENT, INC.
 725 SW 168TH AVENUE
 BEAVERTON, OR 97008

oak
 BANKS, OREGON
 PRELIMINARY SUBDIVISION PLAT

ARBOR VILLAGE No. 3
 LAND USE SUBMITTAL - JANUARY 2016

Map No: 1575109201
 Project No: 1575109201
 Street No: 02 OF 03
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 EXHIBIT 13
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WILSON RIVER HIGHWAY (HIGHWAY 6)

STAFF MEMOS

8 April 2016

Memorandum

To: Stacey Goldstein, City Planner
From: Rob Peacock, PE, City Engineer
Subject: Arbor Village Phase 9 Planning Submittal
K/J 0791015.00

Kennedy/Jenks Consultants reviewed West Hills Development Company's Application for Comprehensive Plan Amendment, Zoning Map Amendment, Concept Master Plan, and Preliminary Subdivision Approval dated 2 March 2016. The proposed development consists of 37 residential units, sidewalks, streets, underground utilities, landscaping, stormwater facilities, and natural areas. We have the following comments on the proposed development:

- The narrative page 3, item C. 1. describes alternating side of the street parking however plans show one side parking on the street. Either method is acceptable provided emergency vehicles can pass easily.
- The narrative page 39, Item (D) (2) indicates public access to the wetlands, stormwater detention pond, or associated CWS wetland buffers is not proposed due to the safety concerns related to the proposed retaining walls. It appears the maintenance road through the natural area would allow public access, and would likely attract people walking into the area. The City would prefer to allow pedestrian access if it can be made safe. Will there be additional controls preventing public access or is access along the maintenance road acceptable?
- Clean Water Services has final approval of stormwater facilities; provide storm drainage report with development submittal.
- Proposed retaining walls may results in fall hazards. Provide fall-prevention for drop-offs created by retaining walls as required by code.
- Maintain underground utility separation as required under Section 4.50 of the City of Banks Design Standards and ORS 333.
- Streets and sidewalks shall be constructed in accordance with the City of Banks Public Works Design Standards.
- Water Mains and services shall be installed in accordance with City of Banks standards. City of Banks revised design standards for water meters were adopted in January 2016.
- City of Banks design standards for Street Trees were adopted in January 2016, including species appropriate for each planting strip width. These standards shall be implemented in proposed development.



720 SW Washington St.
Suite 500
Portland, OR 97205
503.243.3500

MEMORANDUM

DATE: April 15, 2016

TO: Jolynn Becker, City of Banks
Stacey Goldstein, City of Banks

FROM: Randy Johnson, PE, PTOE

SUBJECT: **Review Comments on West Hills Development Company Application for Comprehensive Plan Amendment, Zoning Map Amendment, Concept Master Plan, and Preliminary Subdivision Approval.**

P# 14120-000-002

DKS Associates has completed a review of the West Hills Development Company Application for Comprehensive Plan Amendment, Zoning Map Amendment, Concept Master Plan, and Preliminary Subdivision Approval. This review focuses on traffic operations, multi-modal connectivity and access, and general site layout for the proposed subdivision. Comments regarding the reviewed application materials are provided below.

Application Reference: *Exhibit 4 – Arbor Village Traffic Impact Study*

Comment (1): The traffic impact study trip distribution assumption of 5 percent to the north is too low as previously commented. In April 2015 Kittelson and Associates provided an updated trip distribution based on a review of new count data that resulted in a trip distribution of 35 percent to the north. The revised trip distribution provided in April 2015 was more reasonable and satisfactory. While this difference in trip distribution is significant, the total trip generation for this development is so low that updating the trip distribution would result in 10 additional trips going north on Main Street. Therefore, an updated traffic study based on this finding is not recommended as doing so would not result in a significant change in the overall conclusions.

Application Reference: *III.C.3 [pdf page 7] - "Open Space and Pedestrian Connectivity" ... "Tract B shall be open and accessible to the public as an active open space".*

Comment (2): Further clarification is needed on what will be implemented for "active open space". The City code states, " Plans shall provide space for both active and passive recreational uses, and may include but are not limited to: neighborhood parks, pathways/trails, natural areas, plazas, and play fields". At a minimum it is recommended that this open space incorporate irrigated landscaping, a maintained lawn, benches and picnic tables, but something more substantial would provide more benefit to the community. For example, a "tot lot" play structure or swing set to provide year-round usage. Lawns as an active use are typically not usable for the majority of the year in Oregon due to wet weather conditions.

West Hills Development Application Review

April 15, 2015

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Application Reference: § 152.054 (B) [pdf page 40] - "Access. Each lot and parcel shall abut upon a street other than an alley for a width of at least 20 feet."

Comment (3): Need further clarification if 20 foot frontage abutting street applies at the curb line or parcel boundary for parcels that do not have boundaries perpendicular to street. The site plan appears to show shared driveway aprons for some adjacent parcels on the cul-de-sac. Do these parcels allow for two-vehicle driveways on each parcel?

Application Reference: IV.6 [pdf page 9] "The Applicant has also entered into an agreement with the City (Washington County Document No. 2015-037807) that requires the Applicant to make certain improvements and repairs to the existing sidewalks and curbs in Arbor Village and replace certain street trees. The Applicant shall be obligated to make these repairs if the Application is approved."

Comment (4): Prior to application approval it is recommend that a detailed scope of improvements and repairs be defined and agreed upon between the City and applicant. An example of a needed improvement is the addition of an ADA ramp to be installed on the north end of the pedestrian crossing on Oak Way as shown below.



Application Reference: Site Plan Review

Comment (5): The application appears to indicate the access drive to the Clean Water Services (CWS) facility will remain as existing, which is currently a gravel surface. Per CWS design requirements, all access roads have design criteria that include asphalt, turnarounds, reinforced apron and sidewalk crossings to support heavy trucks and minimum grade thresholds. Consideration should be made to bring access drive up to CWS code requirements if warranted.

Comment (6): On the Ashton Drive cul-de-sac where the right-of-way extends to the rail right-of-way, consideration should be made for a barricade to be installed with a sign that states road may be extended with future development. If there ever is a chance Ashton Drive will get extended to East Banks following a vacation of the railroad, this type of sign informs existing and potential future residents that there could be the possibility

West Hills Development Application Review

April 15, 2015

Page 3 of 4

of a future extension at this location. Without this type of sign, it may become politically challenging to extend a street when residents on the street purchased properties with the assumption they would be forever on a cul-de-sac. Below is an example from the City of Sherwood of a barricade with future extension sign.

