Wetland Delineation
JSTT Warehouse and Land - Tax Lot 400
Cornelius, Oregon

(Township 1 North, Range 3 West, Section 33CA, Tax Lot 400)

Prepared for

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PHS Project Number: 6942

March 24, 2021

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I. INTRODUCTION

Pacific Habitat Services, Inc. (PHS) conducted a wetland delineation for JSTT Warehouse and Land property in Cornelius, Oregon (Township 1 North, Range 3 West, Section 33CA, Tax Lot (TL) 400). The study area is within the *North Holladay Industrial Park* delineation study area (DSL File Number WD2013-0348), which expired in March 2019. This report presents the results of PHS's wetland delineation within the study area. Figures (1-5C), including a map depicting the location of wetlands within the study area (Figure 6), are located in Appendix A. Data sheets documenting on-site conditions are in Appendix B. Ground-level photos of the site are located in Appendix C. The results of the U.S. Corps of Engineers (Corps) Antecedent Precipitation Toll are included in Appendix D. A discussion of the wetland delineation methodology, provided for the client, is in Appendix E.

II. RESULTS AND DISCUSSION

A. Landscape Setting and Land Use

The study area is located northeast of the intersection of N. Holladay Street and N. 4th Avenue in Cornelius, Oregon, and consists of one tax lot (TL 400). The site is bounded by light industrial and/or agriculture fields on all sides. Land use around the study area includes light industrial, commercial, agriculture, single-family residential, and open space.

The topography of study area is generally flat (elevations on site range from 172 to 180 feet), with the lowest elevations located in the northwestern portion of the study area. The site has been managed for agricultural production for decades and is currently managed for grass seed/hay. Dominant vegetation includes tall false rye grass (*Schedonorus arundinaceus*, FAC) and bluegrass (*Poa* sp., assumed FAC).

B. Site Alterations

Google Earth historical photos of the study area from 1994 through 2020 shows no changes on the site. No recent fill material or deposits were observed within the study area. Three recent aerial photographs are included in Appendix A (Figures 5A-5C).

C. Precipitation Data and Analysis

The delineation field work was conducted on January 20, 2021. Trace precipitation was recorded on January 20; precipitation for the prior two weeks totaled 3.79 inches (NRCS, 2021). Precipitation for the month of January totaled 7.18 inches, which is 155% of normal for the period of record. Precipitation for the water year starting October 1, 2020 through January 31, 2021 totaled 19.85 inches, which is 103% of normal for the period of record.

Table 1 shows the average monthly precipitation for the Portland-Hillsboro airport for the three months prior to the January site visit, as well as the upper and lower values considered within normal ranges for the period of record (NRCS WETS table for Portland-Hillsboro Airport 1999-2019).

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Table 1. Comparison of average and observed monthly precipitation prior to the January 2021 delineation field work.

Month	Average*	30% chance will have		Observed Precipitation**
		Less than	More than	
October 2020	3.22	2.00	3.89	1.38
November 2020	5.02	3.41	6.00	5.34
December 2020	5.96	3.96	7.14	5.27
January 2021	5.06	3.51	6.02	7.86

***Average Monthly Rainfall (NRCS WETS Table for Portland-Hillsboro Airport)**
****Recorded monthly rainfall (NRCS) for Portland-Hillsboro Airport, 2021**

Recorded precipitation for October was well below average, and below the normal range for the area. Rainfall for November and December was within normal range for the area. Rainfall in January was well above average and above the normal range for the area. The results of the Corps Antecedent Precipitation Tool (Appendix D) indicate that the delineation was conducted during a period that was "wetter than normal," though the area's longer-term climatic condition is "mild drought."

The precipitation fluctuations preceding the delineation are not expected to have affected the wetland delineation because the delineation generally relied on topography, presence of hydric soil indicators, and/or primary or secondary indicators of hydrology to determine likely wetland locations.

D. Methods

PHS delineated the limits of the wetlands on the site based on the presence of wetland hydrology, hydric soils, and hydrophytic vegetation, in accordance with the Routine On-site Determination, as described in the *Corps of Engineers Wetland Delineation Manual, Wetlands Research Program Technical Report Y-87-1* ("The 1987 Manual") and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*. PHS conducted the wetland delineation within the study area on January 20, 2021.

The entire study area was investigated for the presence of wetlands or other waters. Much of the tax lot has a vegetation signature that is assumed to be associated with saturation. Two wetlands were delineated within the study area, in approximately the same location as delineated in 2013 (WD2013-0348).

PHS excavated soils at seven locations within the study area. Three pairs of data plots and one additional upland data point were deemed sufficient to document the wetland and upland conditions associated with the wetlands, though dozens of excavations were made to delineate the boundaries of each of these agriculture wetlands.

Vegetation throughout the project area consists of facultative grasses, although percent cover is generally less than 100 percent. Vegetation and topographic changes are very slight or absent and were not useful in identifying the boundary. The wetlands were delineated based primarily on the presence of oxidized rhizospheres (ORs) and the transition from hydric to non-hydric soils. ORs were not present in one sample point within the wetland, but the area was considered to have met the wetland hydrology criteria due to the presence of hydric soils and hydrophytic vegetation.

E. Description of all Wetlands and Other Non-Wetland Waters

Within the study area, PHS delineated two wetlands. Wetlands A and B are located within an agricultural field. Both wetlands are located entirely within the project tax lot and do not extend off-site. Vegetation is dominated by pasture grasses including tall fescue and annual bluegrass. As vegetation is managed within the agricultural fields, there is very little difference between vegetation in the wetland areas and vegetation in the upland areas. The only notable difference is that in some instances vegetation in the upland areas was in a slightly more advanced phenological stage than the same species in the wetland areas at the time of survey. Primary hydrologic indicators within these wetlands are limited to oxidized rhizospheres (ORs) as no surface water or saturation associated with a high water table were present at the time of survey.

Wetland A

Wetland A is located in the southern portion of the tax lot and is approximately 564 square feet (0.01 acre) within the study area. The Cowardin class is palustrine, emergent, seasonally flooded/saturated, farmed (PEMEf) and the Hydrogeomorphic (HGM) class is Flats.

Vegetation in and around Wetland A (Sample Point 2) is annual bluegrass. Soils within Wetland A meet the definition for depleted matrix (F3), and are considered hydric. Although there were no primary indicators of wetland hydrology during the field investigation, the area is assumed to be wetland based on the presence of hydric soils. The upland area surrounding Wetland A (Sample Point 1) does not contain hydric soils.

Wetland B

Wetland B is located north of Wetland A in the central and northern portion of the tax lot. It is approximately 27,922 square feet (0.64 acre) within the study area. The Cowardin class is PEMEf and the HGM class is Flat.

Vegetation in and around Wetland B (Sample Points 4 and 6) is bluegrass and tall fescue. Soils within Wetland B meet the definition for depleted matrix (F3) and/or redox dark surface (F6), and are considered hydric. Approximately 2 percent of the living roots within the wetland contain ORs. The upland area surrounding Wetland B (Sample Points 3, 5, and 7) does not meet any hydric soil criteria.

F. Deviation from Local or National Wetland Inventories

The Local Wetland Inventory (LWI) for Cornelius shows data point PW1 on TL 400, indicating a "potential wetland" in the western portion of the site. The Statewide Wetland Inventory shows a predominantly hydric soil map unit, a riverine wetland (R4SBC), and a National Hydrology Dataset (NHD) stream within Tax Lot 400.

PHS's delineation of Wetlands A and B in 2021 is consistent with the LWI mapping. There were no other wetlands or waters identified within the study area.

G. Mapping Method

PHS used a Trimble GPS unit to survey the boundary and sample point locations for the wetland delineation map. The accuracy of the GPS data is +/- 3 feet.

H. Additional Information

In June of 2013, PHS conducted a wetland delineation of the *North Holladay Industrial Park*, which included TL 400, as well as several other tax lots (WD 2013-0348). The field work found two wetlands within TL 400, labeled Wetlands A and B, that correspond to the wetlands delineated in 2021 and described in this report.

I. Results and Conclusions

PHS performed a wetland delineation on TL 400 on January 20, 2021. Two wetlands were delineated, as detailed in the following table.

Table 2: Summary of Potentially Jurisdictional Wetlands within the Study Area

Wetland	Area (square feet / acres)	Cowardin Class	HGM Class
Wetland A	27,922 / 0.64	PEMEf	Flats
Wetland B	564 / 0.01	PEMEf	Flats
Total	**28,486 / 0.65**		

J. Required Disclaimer

This report documents the investigation, best professional judgment and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055.

III. REFERENCES

Adamus, P.R. and D. Field. 2001 *Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and Riparian Sites. Willamette Valley Ecoregion, Riverine Impounding and Slopes/Flats Subclasses*. Oregon Division of State Lands, Salem, OR.

GoogleEarth Map. 2021. Aerial photograph.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. *State of Oregon 2018 Plant List. The National Wetland Plant List*: *2018 Wetland Ratings* http://wetland-plants.usace.army.mil/nwpl_static/v34/home/home.html#

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NRCS WETS table for Portland-Hillsboro Airport. http://agacis.rcc-acis.org/?fips=41071

NRCS monthly rainfall data for Portland-Hillsboro. https://efotg.sc.egov.usda.gov/

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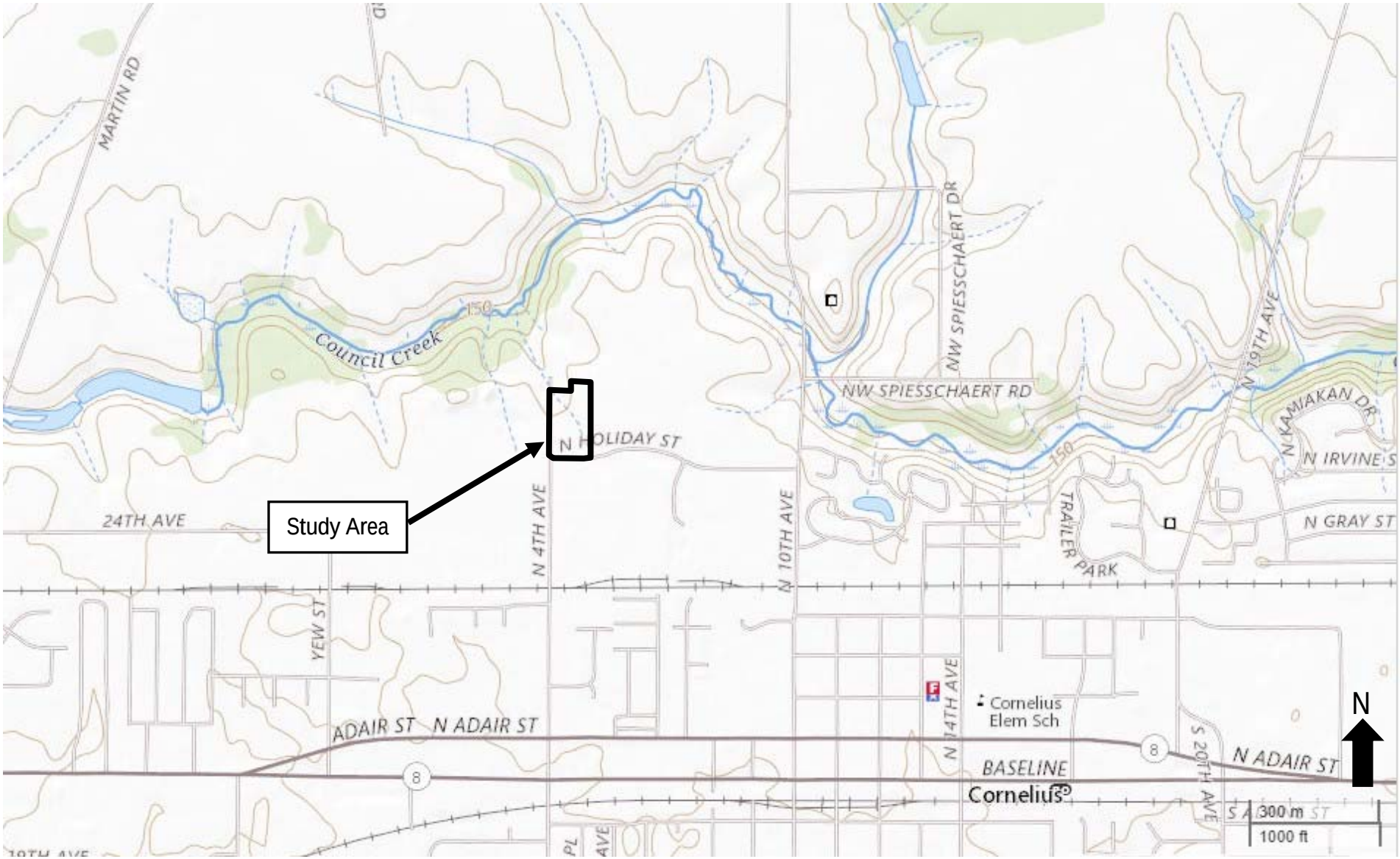
USDA, Web Soil Mapper, 2021. *Soil Survey of Washington County, Oregon.* *http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx*

US Geologic Survey, 2017. *7.5-minute topographic map, Forest Grove SW, Oregon quadrangle*.

Appendix A

Figures



#6942
3/5/21

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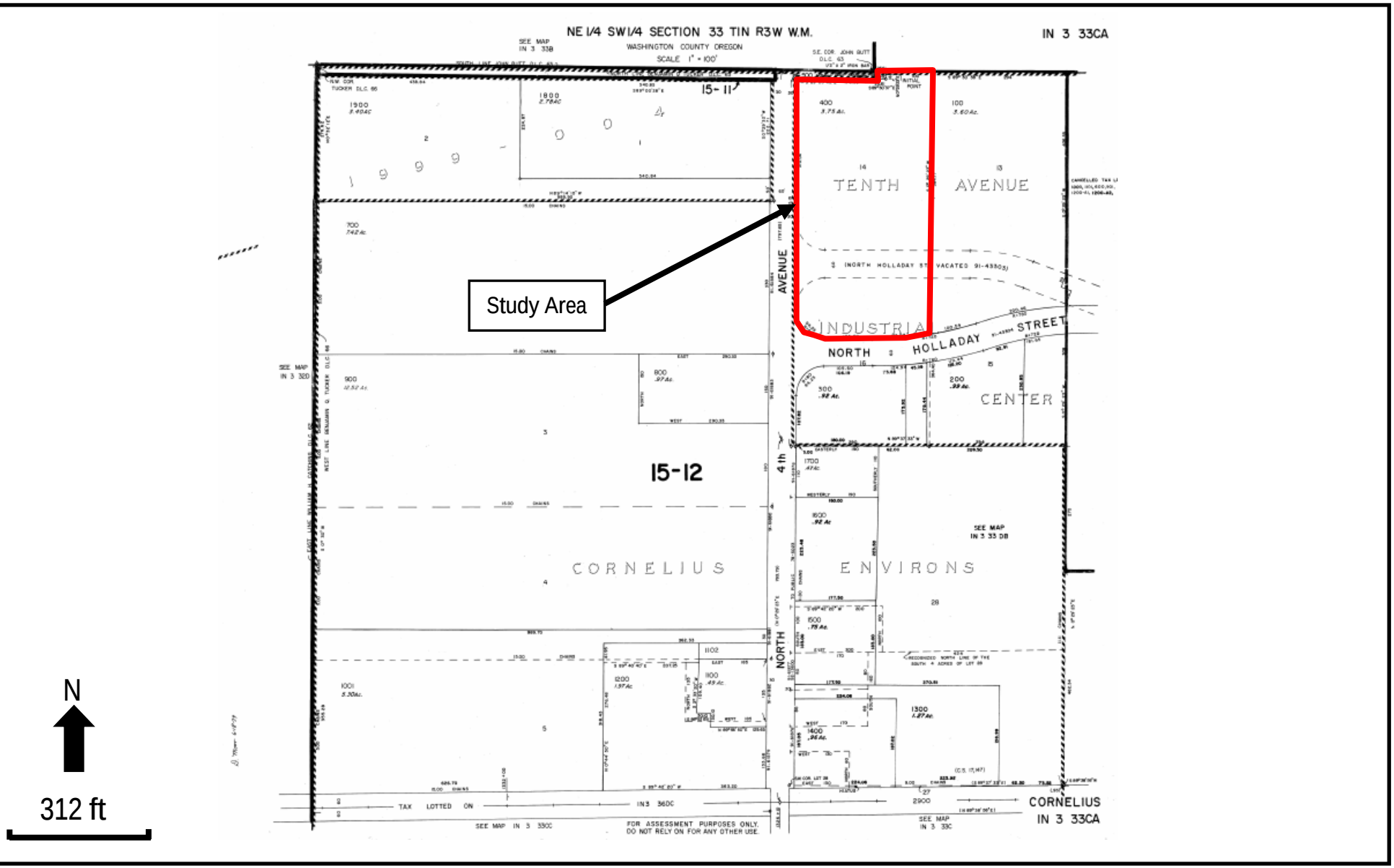
General Location and Topography
JSTT Warehouse and Land, Tax Lot 400 - Cornelius
United States Geological Survey (USGS) Forest Grove, Oregon, 7.5 quadrangle, 2017
(viewer.nationalmap.gov/basic)

FIGURE
1



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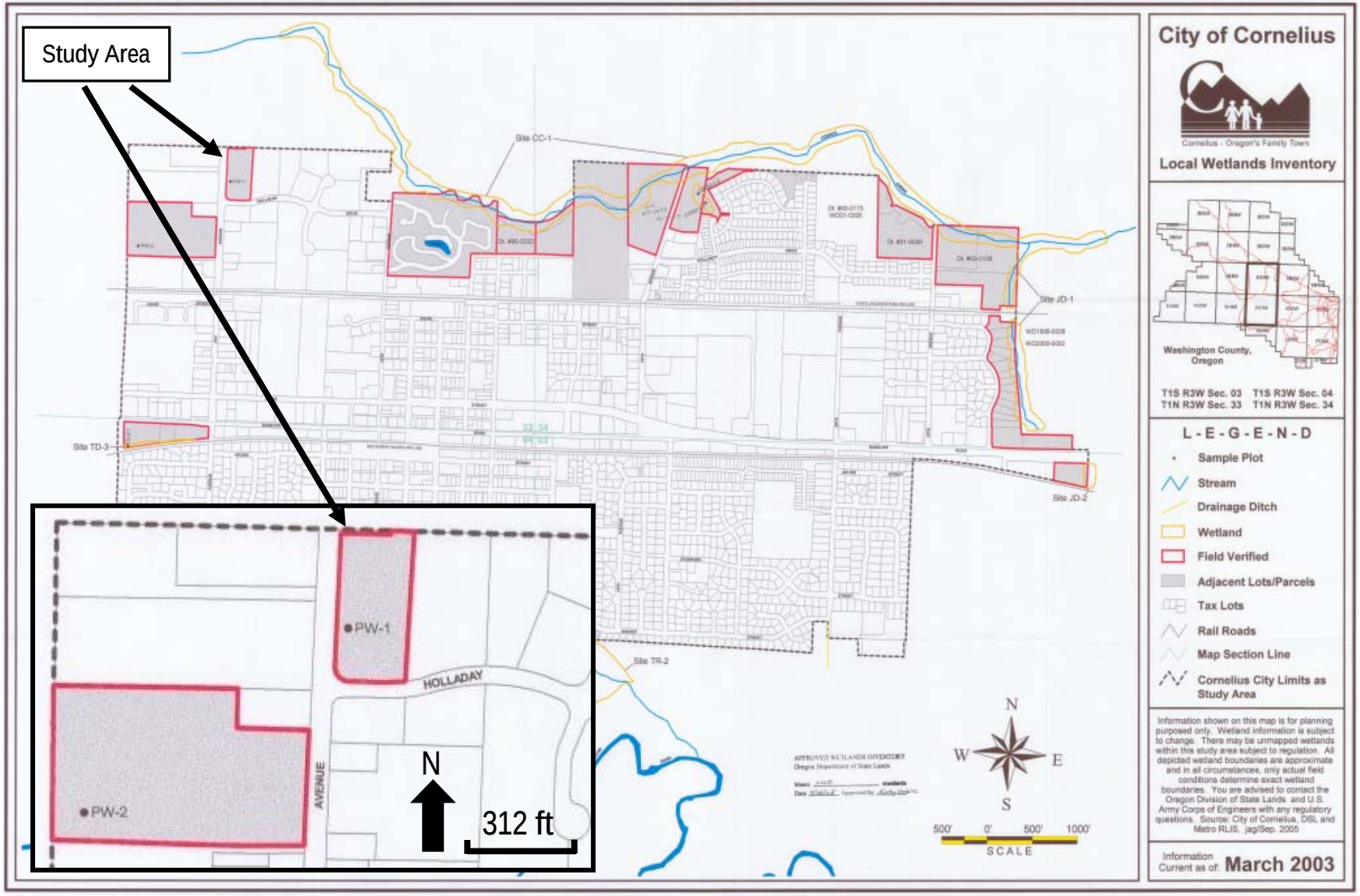
Tax Lot Map
JSTT Warehouse and Land, Tax Lot 400 - Cornelius
The Oregon Map (ormap.net)

FIGURE
2



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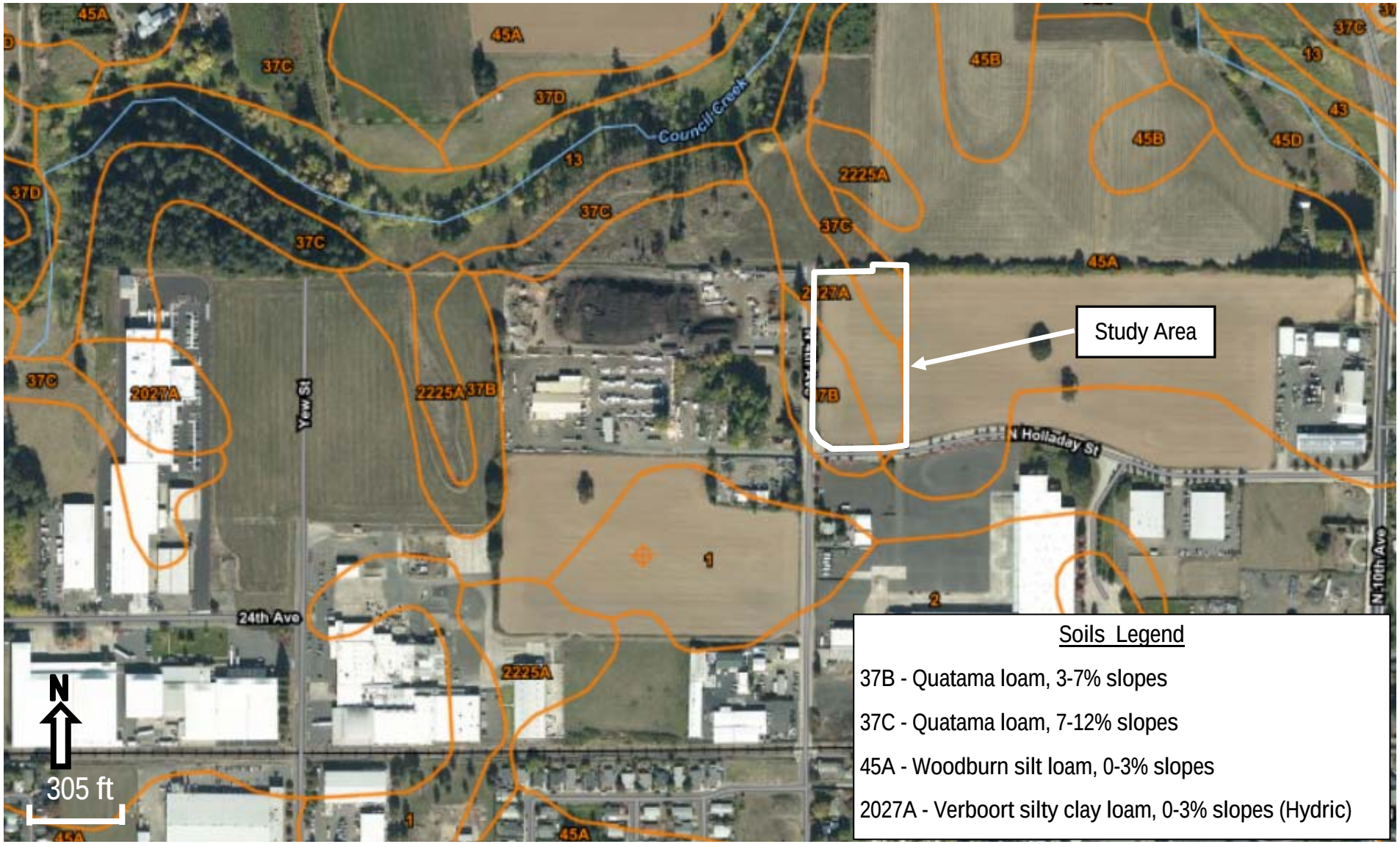
Wilsonville, OR 97070

Local Wetland Inventory
JSTT Warehouse and Land, Tax Lot 400 - Cornelius
Department of State Lands, 2003

FIGURE
3



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Wilsonville, OR 97070

Natural Resources Conservation Service—Soils
JSTT Warehouse and Land, Tax Lot 400 - Cornelius
Natural Resources Conservation Services, Web Soil Survey, 2019
(websoilsurvey.sc.egov.usda.gov)

FIGURE
4

#6942
3/5/21

Pacific Habitat Services, Inc.
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Wilsonville, OR 97070

August 13, 2020 Aerial Photo
JSTT Warehouse and Land, Tax Lot 400 - Cornelius
GoogleEarth, 2021

FIGURE
5A

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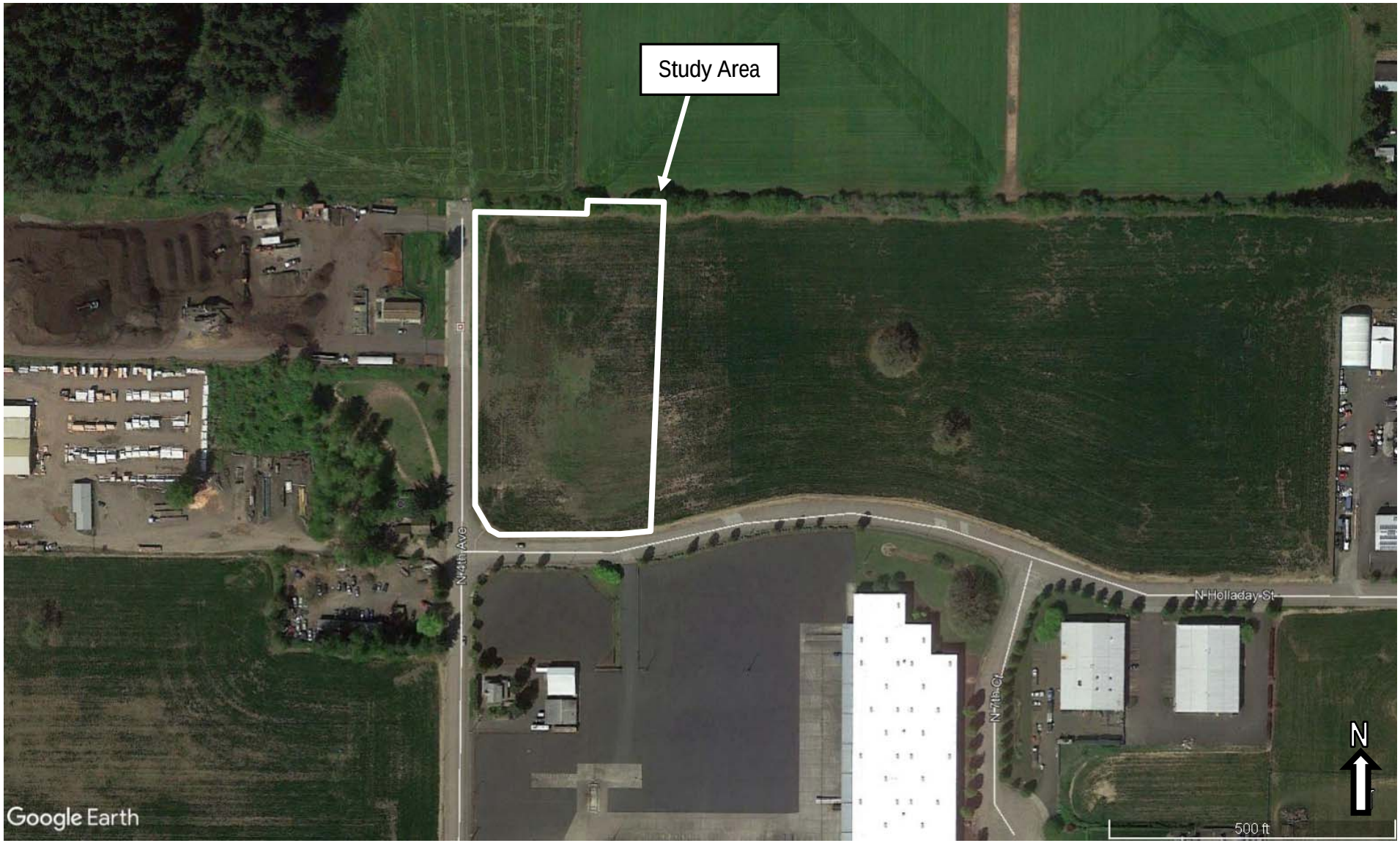
3/5/21

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

May 22, 2017 Aerial Photo
JSTT Warehouse and Land, Tax Lot 400 - Cornelius
GoogleEarth, 2021

FIGURE
5B



#6942
3/5/21

Pacific Habitat Services, Inc.
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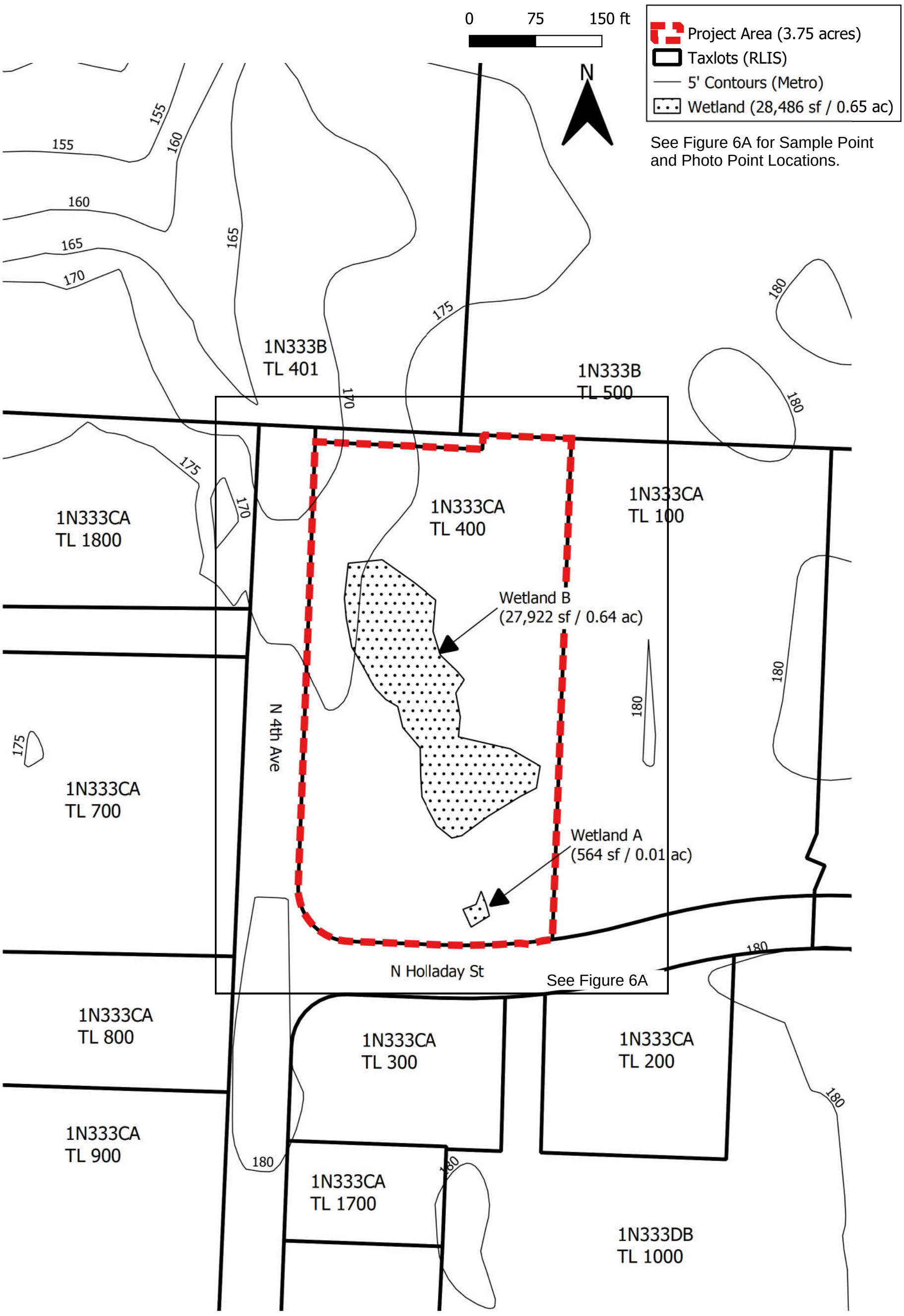
April 17, 2015 Aerial Photo
JSTT Warehouse and Land, Tax Lot 400 - Cornelius
GoogleEarth, 2021

FIGURE
5C



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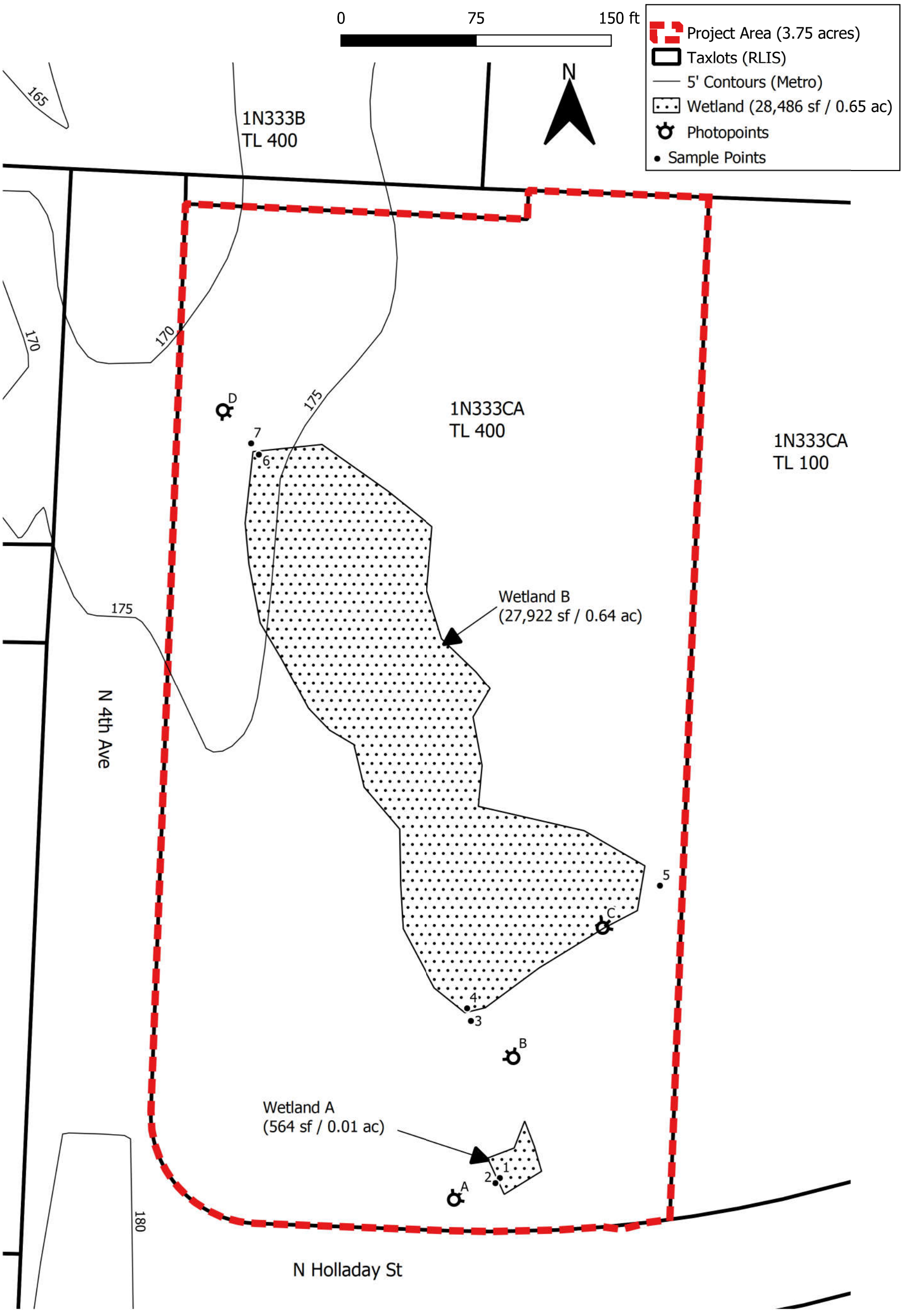
Wetland boundaries and sample points were surveyed using a Trimble Geo7X GPS unit and are submeter accurate. Tax lot boundaries were downloaded from RLIS as shapefiles. Contours were downloaded from Metro as shapefiles.

Wetland Delineation
JSTT Warehouse and Land - Tax Lot 400

FIGURE
6

3/12/2021



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Wetland Delineation
JSTT Warehouse and Land - Tax Lot 400

FIGURE
6A

3/12/2021

Appendix B

Wetland Determination Data Sheets

PHS # 6942

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

Project/Site: JSTT Delineation - TL 400 City/County: Cornelius/Washington Sampling Date: 1/20/2021

Applicant/Owner: JSTT Wareshouse and Land State: OR1 Sampling Point: 1

Investigator(s): JT/CM Section, Township, Range: 33CA, 1 North, 3 West

Landform (hillslope, terrace, etc.:) Depression Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): LRR A Lat: 45.5269 Long: -123.0657 Datum: WGS84

Soil Map Unit Name: Verboort silty clay loam, 0 to 3% slopes NWI Classification: Riverine

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

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) N

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)			
1			
2			
3			
4			
	0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb Stratum (plot size: 5)			
1 *Poa sp*	20	X	(FAC)
2			
3			
4			
5			
6			
7			
8			
	20	= Total Cover	
Woody Vine Stratum (plot size: ____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

PHS # 6942 Sampling Point: 1

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	99	7.5YR 4/6	1	C	M	Silty Clay Loam	Fine
5-8	10YR 3/1	98	7.5YR 4/6	2	C	M	Silty Clay Loam	Medium
8-14	10YR 3/3	100					Silty Clay Loam	
14-17	10YR 3/3	100					Silty Clay Loam	Rocky

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: **Rocks**

Depth (inches): **17**

Hydric Soil Present? Yes ____ **No X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ____ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- ____ Drainage Patterns (B10)
- ____ Dry-Season Water Table (C2)
- X Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Fac-Neutral Test (D5)
- ____ Raised Ant Mounds (D6) **(LRR A)**
- ____ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):	____	
Water Table Present?	Yes ____	No X	Depth (inches):	>17	**Wetland Hydrology Present?**
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches):	>17	**Yes** ____ **No X**

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

Remarks:

PHS # 6942

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

Project/Site: JSTT Delineation - TL 400 City/County: Cornelius/Washington Sampling Date: 1/20/2021

Applicant/Owner: JSTT Wareshouse and Land State: OR1 Sampling Point: 2

Investigator(s): JT/CM Section, Township, Range: 33CA, 1 North, 3 West

Landform (hillslope, terrace, etc.:) Depression Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): LRR A Lat: 45.5268 Long: -123.0658 Datum: WGS84

Soil Map Unit Name: Verboort silty clay loam, 0 to 3% slopes NWI Classification: Riverine

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

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) N

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)			
1			
2			
3			
4			
	0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb Stratum (plot size: 5)			
1 *Poa sp*	20	X	(FAC)
2			
3			
4			
5			
6			
7			
8			
	20	= Total Cover	
Woody Vine Stratum (plot size: ____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

PHS # **6942** Sampling Point: **2**

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	**10YR 3/2**	**100**					**Silty Clay Loam**	
8-14	**10YR 4/2**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Silty Clay Loam**	**Medium**

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: **Rocks**

Depth (inches): **14**

Hydric Soil Present? Yes X **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

	Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
	Drainage Patterns (B10)
	Dry-Season Water Table (C2)
X	Saturation Visible on Aerial Imagery (C9)
	Geomorphic Position (D2)
	Shallow Aquitard (D3)
	Fac-Neutral Test (D5)
	Raised Ant Mounds (D6) **(LRR A)**
	Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes		No	X	Depth (inches):	>14
Saturation Present? (includes capillary fringe)	Yes		No	X	Depth (inches):	>14

Wetland Hydrology Present? **Yes** X **No** _____

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

Remarks:

Presence of Hydric Soils indicates an aquic moisture regime.

PHS # 6942

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

Project/Site: JSTT Delineation - TL 400 City/County: Cornelius/Washington Sampling Date: 1/20/2021

Applicant/Owner: JSTT Wareshouse and Land State: OR1 Sampling Point: 3

Investigator(s): JT/CM Section, Township, Range: 33CA, 1 North, 3 West

Landform (hillslope, terrace, etc.:) Slope Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): LRR A Lat: 45.5271 Long: -123.0658 Datum: WGS84

Soil Map Unit Name: Verboort silty clay loam, 0 to 3% slopes NWI Classification: Riverine

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

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) N

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)			
1			
2			
3			
4			
	0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb Stratum (plot size: 5)			
1 *Poa sp*	45	X	(FAC)
2			
3			
4			
5			
6			
7			
8			
	45	= Total Cover	
Woody Vine Stratum (plot size: ____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum 55

Dominance Test worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

PHS # 6942 Sampling Point: 3

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	**10YR 3/2**	**100**					**Silty Clay Loam**	
10-14	**10YR 3/1**	**90**	**7.5YR 4/6**	**10**	**C**	**M**	**Silty Clay Loam**	**Medium**

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ____

Depth (inches): ____

Hydric Soil Present? Yes ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ____ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- ____ Drainage Patterns (B10)
- ____ Dry-Season Water Table (C2)
- X Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Fac-Neutral Test (D5)
- ____ Raised Ant Mounds (D6) **(LRR A)**
- ____ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):	____	
Water Table Present?	Yes ____	No X	Depth (inches):	>14	**Wetland Hydrology Present?**
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches):	>14	**Yes** ____ **No** X

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

Remarks:

PHS # 6942

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

Project/Site: JSTT Delineation - TL 400 City/County: Cornelius/Washington Sampling Date: 1/20/2021

Applicant/Owner: JSTT Wareshouse and Land State: OR1 Sampling Point: 4

Investigator(s): JT/CM Section, Township, Range: 33CA, 1 North, 3 West

Landform (hillslope, terrace, etc.:) Slope Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): LRR A Lat: 45.5271 Long: -123.0658 Datum: WGS84

Soil Map Unit Name: Verboort silty clay loam, 0 to 3% slopes NWI Classification: Riverine

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

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) N

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)			
1			
2			
3			
4			
	0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb Stratum (plot size: 5)			
1 *Poa sp*	30	X	(FAC)
2			
3			
4			
5			
6			
7			
8			
	30	= Total Cover	
Woody Vine Stratum (plot size: ____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum 70

Dominance Test worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

PHS # 6942 Sampling Point: 4

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	100					Silty Clay Loam	
2-10	10YR 3/2	90	7.5YR 4/6	8	C	M	Silty Clay Loam	Medium
2-10			7.5YR 4/6	2	C	PL	Silty Clay Loam	
10-14	10YR 4/2	79	10YR 2/1	1	C	M	Silty Clay Loam	Manganese, Medium
10-14			10YR 3/3	20	C	M	Silty Clay Loam	Large

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ___ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Fac-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	___	
Water Table Present?	Yes ___	No X	Depth (inches):	>14	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	>14	

Wetland Hydrology Present? Yes X No ___

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

Remarks:

PHS # 6942

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

Project/Site: JSTT Delineation - TL 400 City/County: Cornelius/Washington Sampling Date: 1/20/2021

Applicant/Owner: JSTT Wareshouse and Land State: OR1 Sampling Point: 5

Investigator(s): JT/CM Section, Township, Range: 33CA, 1 North, 3 West

Landform (hillslope, terrace, etc.:) Slope Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): LRR A Lat: 45.5273 Long: -123.0654 Datum: WGS84

Soil Map Unit Name: Verboort silty clay loam, 0 to 3% slopes NWI Classification: Riverine

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

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) N

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)			
1			
2			
3			
4			
	0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb Stratum (plot size: 5)			
1 *Schedonorus sp*	60	X	(FAC)
2			
3			
4			
5			
6			
7			
8			
	60	= Total Cover	
Woody Vine Stratum (plot size: ____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum 40

Dominance Test worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Monoculture crop

SOIL

PHS # 6942 Sampling Point: 5

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-11	**7.5YR 3/2**	**100**					**Silty Clay Loam**	
11-13	**10YR 3/2**	**97**	**5YR 4/6**	**3**	**C**	**M**	**Silty Clay Loam**	**Fine; ~50% cobble gravel**
13-15	**10YR 3/4**	**100**					**Silty Clay Loam**	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ____

Depth (inches): ____

Hydric Soil Present? Yes ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ____ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- ____ Drainage Patterns (B10)
- ____ Dry-Season Water Table (C2)
- X Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Fac-Neutral Test (D5)
- ____ Raised Ant Mounds (D6) **(LRR A)**
- ____ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	____	No	X	Depth (inches):	____
Water Table Present?	Yes	____	No	X	Depth (inches):	**>15**
Saturation Present? (includes capillary fringe)	Yes	X	No	____	Depth (inches):	**0-8;>15**

Wetland Hydrology Present?

Yes ____ **No** X

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

Remarks:

Saturation is present in the surface layer (0-8 inches) associated with recent heavy rain in the wet season. The saturation is not associated with a high water table as soils from 8-15+ inches do not contain saturation and no water table was present.

PHS # 6942

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

Project/Site: JSTT Delineation - TL 400 City/County: Cornelius/Washington Sampling Date: 1/20/2021

Applicant/Owner: JSTT Wareshouse and Land State: OR1 Sampling Point: 6

Investigator(s): JT/CM Section, Township, Range: 33CA, 1 North, 3 West

Landform (hillslope, terrace, etc.:) Slope Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): LRR A Lat: 45.5279 Long: -123.0663 Datum: WGS84

Soil Map Unit Name: Verboort silty clay loam, 0 to 3% slopes NWI Classification: Riverine

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

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) N

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes	X	No		
Wetland Hydrology Present?	Yes	X	No		

Is Sampled Area within a Wetland? Yes X No ____

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)			
1			
2			
3			
4			
	0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb Stratum (plot size: 5)			
1 *Poa sp*	50	X	(FAC)
2 *Plantago lanceolata*	2		FACU
3			
4			
5			
6			
7			
8			
	52	= Total Cover	
Woody Vine Stratum (plot size: ____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum 48

Dominance Test worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

PHS # 6942 Sampling Point: 6

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					Silty Clay Loam	
3-10	10YR 3/2	78	5YR 3/4	20	C	M	Silty Clay Loam	Blotchy
3-10				2	C	PL	Silty Clay Loam	
10-14	10YR 3/2	98	5YR 3/4	2	C	M	Silty Clay Loam	Medium

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ___ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Fac-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	___	
Water Table Present?	Yes ___	No X	Depth (inches):	>14	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	>10	

Wetland Hydrology Present? Yes X No ___

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

Remarks:

PHS # 6942

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

Project/Site: JSTT Delineation - TL 400 City/County: Cornelius/Washington Sampling Date: 1/20/2021

Applicant/Owner: JSTT Wareshouse and Land State: OR1 Sampling Point: 7

Investigator(s): JT/CM Section, Township, Range: 33CA, 1 North, 3 West

Landform (hillslope, terrace, etc.:) Slope Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): LRR A Lat: 45.5279 Long: -123.0664 Datum: WGS84

Soil Map Unit Name: Verboort silty clay loam, 0 to 3% slopes NWI Classification: Riverine

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

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) N

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)			
1			
2			
3			
4			
	0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb Stratum (plot size: 5)			
1 *Schedonorus arundinaceus*	60	X	FAC
2			
3			
4			
5			
6			
7			
8			
	60	= Total Cover	
Woody Vine Stratum (plot size: ____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum 40

Dominance Test worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

PHS # 6942 Sampling Point: 7

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

Depth (Inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/3	100					Silt	
10-12	10YR 4/2	95	5YR 3/4	5	C	M	Silty Clay Loam	Fine
12-15	10YR 3/3	95	10YR 3/6	5	C	M	Silty Clay Loam	Fine

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: ____

Depth (inches): ____

Hydric Soil Present? Yes ____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

- ____ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- ____ Drainage Patterns (B10)
- ____ Dry-Season Water Table (C2)
- X Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Fac-Neutral Test (D5)
- ____ Raised Ant Mounds (D6) **(LRR A)**
- ____ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	____	No	X	Depth (inches):	____
Water Table Present?	Yes	____	No	X	Depth (inches):	____
Saturation Present? (includes capillary fringe)	Yes	X	No	____	Depth (inches):	0-4;>15

Wetland Hydrology Present?

Yes ____ **No** X

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

Remarks:

Saturation is present in the surface layer (0-4 inches) associated with recent heavy rain in the wet season. The saturation is not associated with a high water table as soils from 4-15+ inches do not contain saturation and no water table was present.

Appendix C

Site Photos

Photo A:

View to the northeast of Wetland A and Sample Points 1 & 2.

Photo B:

View to the northwest of the southern end of Wetland B and Sample Points 3 & 4.

#6942
3/8/21

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photo documentation
JSTT Warehouse and Land Tax Lot 400 - Cornelius, OR
Photos taken January 20, 2021

Photo C:

View to the northeast of the eastern boundary of Wetland B and Sample Point 5.

Photo D:

View to the southeast of the northern end of Wetland B and Sample Points 6 & 7.

#6942
3/8/21

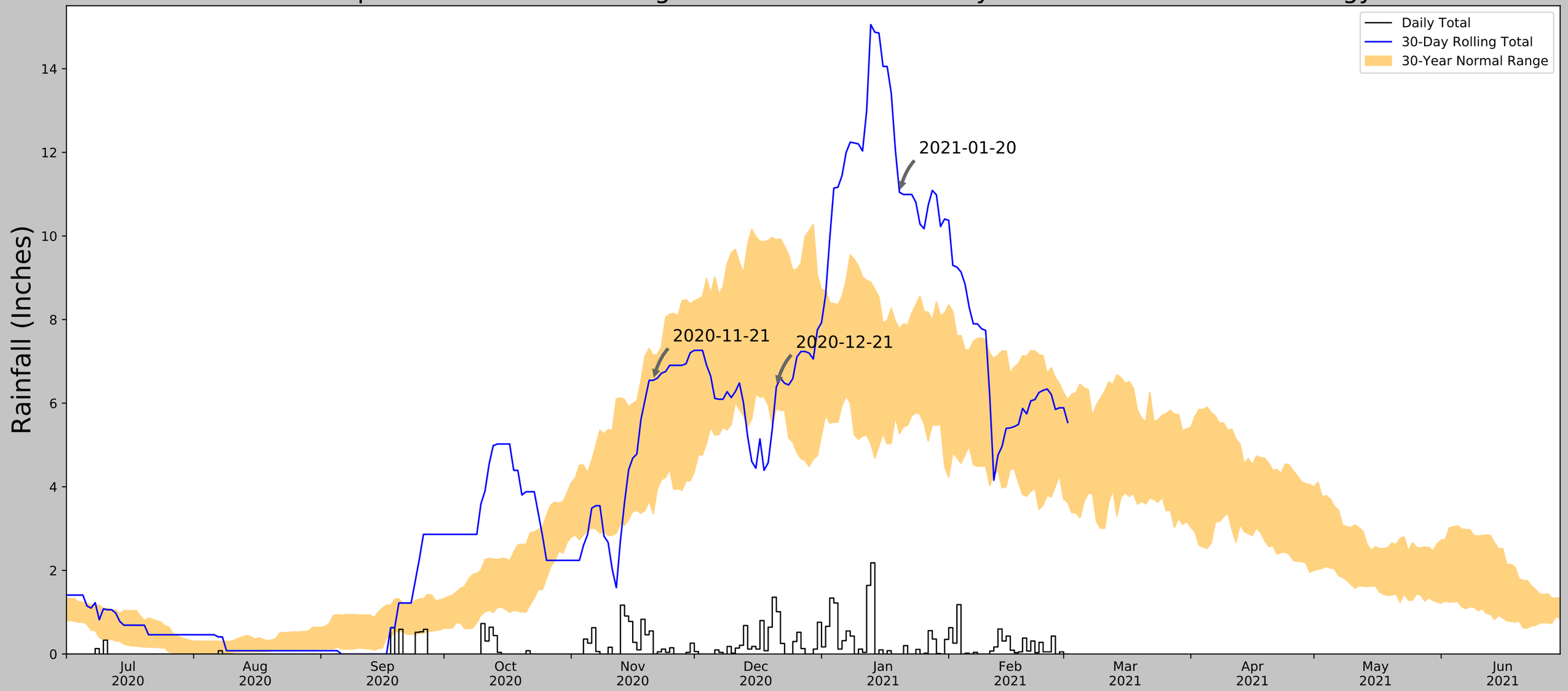
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photo documentation
JSTT Warehouse and Land Tax Lot 400 - Cornelius, OR
Photos taken January 20, 2021

Appendix D

Antecedent Precipitation Tool Results

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	45.527541, -123.065923
Observation Date	2021-01-20
Elevation (ft)	180.97
Drought Index (PDSI)	Mild drought
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-01-20	5.270473	7.782284	11.043307	Wet	3	3	9
2020-12-21	5.874803	9.905118	6.393701	Normal	2	2	4
2020-11-21	3.353937	7.147638	6.547244	Normal	2	1	2
Result							Wetter than Normal - 15

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
DILLEY 2 S	45.4633, -123.1136	193.898	5.003	12.928	2.316	11251	90
FOREST GROVE	45.5247, -123.1025	180.118	1.781	0.852	0.803	81	0
FOREST GROVE 0.6 N	45.5317, -123.1041	172.9	1.87	8.07	0.857	20	0
PORTLAND-HILLSBORO AP	45.5406, -122.9486	204.068	5.75	23.098	2.72	1	0